



2023
*International
Conference*

**FACULTY OF EDUCATION
UNIVERSITY OF IBADAN**



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2023
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BOOK OF PROCEEDINGS



2023
*International
Conference*

**FACULTY OF EDUCATION
UNIVERSITY OF IBADAN**

THEME
**CREATING CONNECTIONS,
BUILDING BRIDGES:
INITIATING PARADIGM
SHIFT IN EDUCATION**

DATE
MON. 8TH - WED. 10TH MAY, 2023

EDITORS
A. O. FAKOLADE, Ph.D.
D. A. OLUWOLE, Ph.D.
C. A. AKANGBE, Ph.D.



BOOK OF PROCEEDINGS
ON
**CREATING CONNECTIONS, BUILDING BRIDGES:
INITIATING PARADIGM SHIFT IN EDUCATION**

**2023 FACULTY OF EDUCATION
INTERNATIONAL CONFERENCE
UNIVERSITY OF IBADAN, IBADAN, NIGERIA
MAY 8 – 10, 2023**



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FACULTY OF EDUCATION INTERNATIONAL CONFERENCE
UNIVERSITY OF IBADAN
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ORDER OF EVENTS

DAY 1: Opening Ceremony: Monday 8 May, 2023

MC: 1. Dr. C.A. Akangbe
 2. Mr Dayo Olajide

VENUE: Faculty of Education Lecture Theatre

S/N	Time	Activity	Person/ committee
1	9:00 am-10:00 am	Arrival/Registration/Ushering in of Guests/Dignitaries	Ushers
2	10.00am-10.10am	Opening Prayers, Anthems	MC – Dr. C.A. Akangbe
3	10.10am-10.40 am	Welcome Speech by the VC/Dean	Prof. O.A. Fakolade
4	10:40 – 10.50am	Citation of the Keynote Speaker	Dr. C.A. Akangbe
5	10.50 am-11.20 am	Keynote Address	Dr. Nureni Adeniran, Chairman, Oyo SUBEB
6	11.20am -11.30am	Awards	Dean
7	11.20am-12.00pm	Breakfast	
	12:00pm – 12.10pm	Citation of the Lead Paper Presenter	Mr. Dayo Olajide
7	12.10pm-1:10pm	Lead Paper Presentation	Prof. Ayodele Babatola, DVC, EKSU
8	1.10pm – 1.20pm	Closing remarks/Vote of thanks	LOC Chairman, Professor D.A. Oluwole
9	1:20pm	Anthems	MC – Dr. C.A. Akangbe
10	1:20pm – 1.30pm	Group photographs	
11	1.30pm-2.10pm	Lunch	Dr. Abiola Omokhabi



			Chairperson Welfare sub-committee
12	2:10 – 2.20pm	Citation of the Preconference Facilitator	Professor D.A. Oluwole
13	2.20pm-3:20pm	Skill Training	Professor M.A. Adeleke

DAY 2: Technical /Syndicate Sessions: Tuesday 9 May, 2023

Facilitators: 1. Prof. D.A. Fakeye (IJES Editor)
2. Dr. C.A. Akangbe

Time: 9 a.m.

Tea break: 11 a.m.

Lunch: 12.00 noon

SN	Groups	Venue
1	Language and Art Education	Faculty Boardroom
2	Science, Mathematics and Technology Education	Faculty Seminar Room
3	Educational Foundations, Moral/Religious Education	LARIS Seminar Room I
4	Counselling, Special Education, Adult Education, Management, Library Science	Counselling Multipurpose Room –Top Floor A Block
5	Virtual presentations and others	LARIS Seminar Room II
6	General	Large lecturer theatre

DAY 3: Tour/ Departure: Wednesday 10 May, 2023

Facilitator: 1. Prof. O. A. Fakolade
2. Prof. Adebayo Oluwole
3. Mr. Dayo Olajide

9.00am – 10.00am	Sightseeing visit to UI community	Guests and Participants
DEPARTURE		



PREFACE

The educational landscape includes many types of connections. An important one is the connection between educational pathways from kindergarten to graduate school. What and how we teach needs to build on how content is presented and assessed, and how students learn as they progress through their educational journey. Most teachers teach as taught, and students prefer familiar teaching approaches. However, as educators, we need to use a spectrum of pedagogies and technologies to learn and adapt to the ever-changing educational landscape.

If the global pandemic has taught us one thing, it's that humans have an innate need for connection. Many people sought connections within work communities, neighborhood groups, faith-based groups, communities of like-minded teachers, or communities of post-secondary students. Often, these communities have used the Internet to stay connected using digital resources and virtual platforms, including social media, which allow for mutual interaction and feelings of connection. Regardless of the type of community members sought to belong to or the methods they chose to maintain connection, this need for connection was inherent in everyone in the community. The purpose of this chapter is to introduce the concept of the connectedness cycle, clarify its subcomponents, and provide clear and specific examples and strategies for how connection can create a paradigm shift in workplace and educational environments.

The theme of the 2023 Faculty of Education International Conference, University of Ibadan, Ibadan, Nigeria, held between 8 and 10 May, 2023 is “Creating Connections, Building Bridges: Initiating a Paradigm Shift in Education”. The theme is apt and relevant because today's conceptualisation of education is becoming amorphous, complex and nebulous.

About sixty papers were submitted and presented by scholars from across Nigeria for the three-day conference. It was a joyful experience for me and the members of the local organising committee.

I sincerely commend the Dean of the Faculty of Education, Professor Olufemi Aremu Fakolade, for his visionary leadership that enabled us to achieve success with this conference.

Professor Adebayo David Oluwole

2023 Faculty of Education Conference LOC Chairman
University of Ibadan, Nigeria



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CHAPTER 1

APPROPRIATION OF ADULT EDUCATION FOR ACADEMIC ACHIEVEMENT TOWARDS SUSTAINING THE RIGHTS OF PHYSICALLY CHALLENGED STUDENTS IN HIGHER INSTITUTIONS IN LAGOS

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and

Temitope Raheedat ARANMOLATE

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Abstract

The study examined the appropriation of adult education for academic achievement towards sustaining the rights of physical challenged students in higher institutions in Lagos. The study adopted a descriptive survey research design. Population comprises all higher institutions in Lagos State. Simple random sampling technique was used to select ten (10) higher institutions in which fifteen (15) physically challenged students from each of the chosen institutions in Lagos State to make a total of one hundred and fifty (150) respondents as sample for study. A self-developed questionnaire was used as instrument for data collection. It was developed in 2 Likert scale of Agreed and Disagreed. The instrument was moderated by experts who affirmed its validity. Reliability of the instrument was determined using Pearson Product Moment Correlation Coefficient (PPMC). Data collected were analysed using simple percentage and standard deviation statistical tools. Findings revealed that, adult literacy plays a key role in adult sustainable development and promotes economic, social, and environmental dimensions of sustainable development and creates favourable conditions for empowering global active citizens. Through the appropriate use of adult education, physically challenged students are able to acquire an efficient understanding of the concepts and live their lives in an effectual manner. Adult education has positive effects on a wide range of adult issues, such as empowerment, social inclusion, social networking, motivation for learning, work-related matters, including improved job and career prospects, performance and earnings, job satisfaction and commitment to work and innovative skills, as well as other parts of everyday life for both individual physically challenged students. It was therefore recommended that, in order to ensure sustainability of human right of physically challenged students, government should take the lead in the responsibility of providing trained and qualified teachers/facilitators as well as other supporting staff that will teach these special students



Keywords: *Appropriation, Adult education, Academic achievement, Sustaining, Physically challenged*

Introduction

The main characteristic of an inclusive education system is that it prohibits any discriminatory practice, promotes the recognition of differences rather than sameness, embraces plurality and guarantees equal opportunities, and, therefore, benefits the entire collective of individuals. From that perspective, Campaña Latinoamericana por el Derecho a la Educación (CLADE) in Adediran and Adeniji (2012) has been mobilising and strongly advocating for international laws that guarantee inclusive education in our region. Despite advancement in the recognition of inclusion as a key element for the realisation of the right to education for all, it is still necessary to demand governments to adopt and implement inclusive policies (Williams-Oladapo, 2022). Many countries in Latin America and the Caribbean have laws and policies that guarantee the right to education of persons with disabilities and an inclusive education model, but there are still many obstacles for the enrolment and completion of studies of persons with disabilities in regular education systems.

Education according to Adediran and Onifade (2013) is a lifelong process; it is the unique investment for the present and the future, which leads to augmentation of completeness and richness within the lives of the individuals. It is a major instrument that leads to socio-economic growth of the country and a powerful tool for social change. It is a vehicle for acquiring knowledge and skills that has the capacity to conscience and empowers the individuals. Through the acquisition of education, individuals develop the competencies and traits among themselves to alleviate the problems of poverty, ignorance, misery, inequalities, exploitation, degradation, unemployment and other societal problems. The individuals have the right to learn and acquire education throughout their lives. There is not any particular age of attaining education (Historical Development of Adult Education in Adediran, Erikitola and Atoba, 2023).

The concept of adult education has undergone changes. Adult education has been understood as the field that makes provision of educational facilities to the adults, who could not undergo the regular course of formal education, during their school years. Adult education according to Adediran, Erikitola and Atoba (2023) is a practice in which adults participate in methodical and organized activities through which they can facilitate their understanding and learning. Adult education includes the entire body of educational processes. The content, methods or levels or whether they prolong or replace initial education in schools, colleges or universities, as well as apprenticeship.



The physically challenged is an individual who has a malformation or abnormality of body parts and /or ill health conditions that result in restrictions of normal movement and /or limitations of energy in the individual. They include those with crippling conditions or with chronic health problems, physically challenged is used to refer to a variety of individuals such as the orthopedically impaired, the crippled; the physically impaired, motor impaired and the neurologically impaired (Hakijamii, 2011). Dealing with appropriateness of adult education for academic achievement towards sustaining the rights of physical challenged students, today Adult Education is intrinsically linked to lifelong learning, affects the actors involved and envisages the extension of multiple educational networks encompassing all possible institutions. Adult education understood as a common good is achieved in a society when there are accessibility, availability, affordability and social commitment to its functioning for physical challenged students (Boyadjieva and Ilieva-Trichkova, 2018).

Adult education is a manifestation of lifelong learning and the integrated part of the entire education system for regular and special students. Adult education provides opportunities in enhancing knowledge and skills; an innovative education and learning mechanism, area with reaction to the needs and requirements of the economy and labour market, technological innovations, testing and introduction of new profiles, programmes, skills and competencies, these are flexible and open for new forms of work and learning; and finally, important ways that are needed to be taken into consideration to promote self-development are, to acquire employment opportunities, have better income, acquire independence, remain active and in good health, reinforce the family and encourage independence among society members (Despotovic and Pejatovic, 2005).

According to previous research by Desjardins (2019) adult education has positive effects on a wide range of aspects, such as empowerment, social inclusion, social networking, motivation for learning, work-related aspects, including improved job and career prospects, performance and earnings, job satisfaction and commitment to work and innovative skills, as well as other parts of everyday life for both individual especially physical challenged students (Ryan and Griffiths, 2015). Adult education can also have an impact on adults with special educational needs. By “adults with special educational needs” we mean people who have long-term physical, mental, intellectual, or sensory impairments which, in interaction with various barriers, may prevent their full and effective participation in society on an equal basis with others (UN, 2006). Recent research in education suggests that learning environments based on inclusive interactions help promote learning and development of students with Special Educational Needs (SEN). In the case of children with special educational needs, previous research suggests that their participation in educational activities developed in inclusive, interactive environments has clear benefits on learning.



However, this result has not yet been discussed in the case of adults. According to the findings of Moni in Adediran, Erikitola and Atoba (2023) with adults with SEN in community-based adult education contexts, community organisations contribute to the literacy processes of participants with SEN in these programmes. This study points out that, for many years, functional skills training (such as cooking and manual jobs) has dominated community-based programmes for people with SEN and there has been limited recognition of the role that literacy can play in improving the quality of life of learners with SEN through lifelong learning. There is currently no research investigating the degree of literacy needed by adults with SEN in a variety of contexts in adulthood. Depending on the adults' needs, literacy needs can vary widely from employment, family, daily living challenges, leisure and recreation, even to the degree of literacy needed in specific areas such as computers/internet and the broad area of health issues.

In any case, it is a basic instrumental knowledge necessary in diverse contexts; therefore it is relevant to identify venues to enhance its learning. The development of social competences is an integral part of education of this collective. According to de Morais and Rapsová (2019), several specific criteria have to be considered when working with people with special educational needs. Some of them are: (1) to perceive the education of older people as a lifelong process, (2) to take into account the possibilities of education in the system, (3) to recognise the needs and interests of individuals, (4) to enable education without discrimination, (5) to improve the quality of life through education and occupations, and (6) to make use of their life experience for themselves and society as an asset (de Morais and Rapsová, 2019).

In this sense, training focused on social aspects can be beneficial because competences to manage a wide range of social situations provide specific protection in cases of stress, tensions and conflicts. A reasonable level of social competences significantly determines the ability to cope with everyday stress, create excellent and non-conflictual interpersonal relationships, and find more efficient ways of resolving conflicts and misunderstandings. Socially competent people play an active role in their lives, can express their needs and achieve their personal goals. Some studies focus on analysing the participation of adults with Special Educational Needs (SEN) in training and lifelong learning activities from a labour economic perspective (Myklebust and Båtevik, 2014; Båtevik, 2019) and highlight the value of receiving formal education for the acquisition of future employment opportunities. However, this study does not delve into the educational characteristics of such learning opportunities for this specific group. Other research highlight the importance of collaborative work between caregivers of people with learning difficulties and educators in charge of training programmes as this raises awareness of the value of education for these adults and facilitates the establishment of learning opportunities in the everyday lives of people with learning difficulties.



These contributions also apply to students with disabilities, as they benefit from interactive learning contexts to progress to higher levels of learning and higher stages of development. Duque, Gairal, Molina and Roca (2020) state that interaction and dialogue positively impact students with SEN. According to the results they present, participating in activities such as interactive groups or dialogical discussions with the rest of the students makes students with SEN improve their learning and social integration skills with the rest of the group. Interacting with peers with higher academic competence levels under the same curriculum allows students with special needs to make more significant learning progress in mainstream schools. Each person, regardless of their condition, can contribute from their cultural intelligence to the learning process. Previous research suggests that placing students with SEN in the mainstream classroom, together with the rest of their peers, and promoting interactions based on egalitarian dialogue, has benefits both on the learning of students with SEN and the rest of the students. Inclusion fosters the acquisition of academic skills (Dessemontet, Bless and Morin 2012), improves educational outcomes (Nahmias, Kase and Mandell, 2014) and intellectual engagement of students with SEN. It also has positive impacts on social development, as interacting with the rest of the student body leads these students with SEN to improve their social skills and the acceptance they receive from other students.

Research also includes the analysis of how interactive learning environments through adult education are developed in special schools to create better learning opportunities for students with physically challenged. The results put forward by the authors suggest that rethinking the learning context by introducing interaction-based instructional models' benefits children with disabilities and provides high-quality learning and safe and supportive relationships for these students, thus promoting their educational and social inclusion (GarcíaCarrión, Villarejo-Carballido and Villardón-Gallego, 2019). However, such research is usually focused on children, so there is a gap in education for adults with physically challenged. This paper discusses the appropriation of adult education for academic achievement towards sustaining the rights of physical challenged students in higher institutions in Lagos.

Objectives of the Study

The main objectives of the study is to examine the appropriation of Adult of Education for academic achievement towards sustaining the right of physically challenged students in higher institutions in Ogun State. Specifically, the objectives of this study are to:

- i. ascertain the appropriateness of adult education programme for academic achievement towards sustaining the rights of physical challenged students in higher institutions in Lagos; and



- ii. examine the role of adult education programme for academic achievement towards sustaining the rights of physical challenged students in higher institutions in Lagos.

Research Questions

Based on the study, the research questions are;

1. What is the appropriateness of adult education programme for academic achievement towards sustaining the rights of physical challenged students in higher institutions in Lagos?
2. What are the roles of adult education programme for academic achievement towards sustaining the rights of physical challenged students in higher institutions in Lagos?

Methodology

The study adopted a descriptive survey research design. Population comprises all higher institutions in Lagos State. Simple random sampling technique was used to select ten (10) higher institutions in which fifteen (15) physically challenged students from each of the chosen institutions in Lagos State to make a total of one hundred and fifty (150) respondents as sample for study. A self-developed questionnaire was used as instrument for data collection. It was developed in 2 Likert scale of Agreed and Disagreed. To ensure the validity of the instrument, the researcher gave the draft of the questionnaire to the experts to restructure the instrument in line with the research questions. To determine the reliability of the instrument, a pilot test was conducted and the scores were tabulated and the Pearson Product Moment Correlation Coefficient formula was applied and a correlation coefficient of 0.72 was obtained. On the basis of the corrections done on the questionnaire items, and the test-retest reliability coefficient computed, the instrument was judged adequate, valid and reliable for the purpose of gathering relevant data for the study. Data collected were analysed using simple percentage, mean and standard deviations statistical tools.

Presentation of Data Analysis and Results

Research Question 1: What are the appropriateness of adult education programme for academic achievement towards sustaining the rights of physically challenged students in higher institutions in Lagos?



Table 1: Appropriateness of adult education programme for academic achievement towards sustaining the rights of physically challenged students in higher institutions in Lagos

S/N	ITEMS	AGREED		DISAGREED		Mean (\bar{x})	S.D
		Freq (N)	Percent %	Freq (N)	Percent %		
1.	Adult education programme sometimes is mainly designed to enhance rights of physically challenged students	160	80.0	40	20.0	3.25	0.996
2.	Provide physically challenged students ability to read up to a particular grade level to sustain their human rights	160	80.0	40	20.0	3.30	1.008
3.	Provision of physically challenged students' opportunities in enhancing knowledge and skills; an innovative education and learning mechanism.	150	75.0	50	25.0	3.13	1.056
4.	Promote the physically challenged need to be taken into consideration for self-development.	140	70.0	60	30.0	3.13	1.147
5.	Inculcate the basic literacy skills of reading, writing and arithmetic.	165	82.5	35	17.5	3.28	0.924
		Weighted Mean (\bar{x}) = 3.215 and STD = 1.0261					

Table 1 above, indicated that, Adult education sometime mainly designed to enhance rights of physical challenged students ($\bar{x} = 3.25$, $SD = 0.996$), provide physically challenged students ability to read up to a particular grade level sustain their human right ($\bar{x} = 3.30$, $SD = 1.008$), provision of physically challenged students opportunities in enhancing knowledge and skills; an innovative education and learning mechanism ($\bar{x} = 3.13$, $SD = 1.056$), promote the physically challenged need to be taken into consideration to promote self-development ($\bar{x} = 3.13$, $SD = 1.147$) and inculcate the



basic literacy skills of reading, writing and arithmetic ($\bar{x} = 3.48$, $SD = 0.820$). From table 4.7 above, research question 4 has a weighted mean of 3.215 which is above the bench mark of 2.50. Thus, this shows the appropriateness of adult education programme for academic achievement towards sustaining the rights of physically challenged students in higher institutions in Lagos.

Research Question 2: What is the role of adult education programme for academic achievement towards sustaining the rights of physically challenged students in higher institutions in Lagos?

Table 2: Role of adult education programme for academic achievement towards sustaining the rights of physically challenged students in higher institutions in Lagos

S/N	ITEMS	AGREED		DISAGREED		Mean (\bar{x})	S.D
		Freq (N)	Percent %	Freq (N)	Percent %		
1.	Adult education is at the heart of adult sustainable human right	150	75.0%	50	25.0%	3.15	1.016
2.	Adult education brings a new hope for physically challenged students and enhance their educational skills	166	83.0%	34	17.0%	3.43	0.954
3.	Adult education plays a key role in adult sustainable development and creates favourable conditions for empowering global active citizens	180	90.0%	20	10.0%	3.56	0.819
4.	Adult education contributes to the individual as well as collective development of societies in many ways.	148	74.0%	52	26.0%	3.11	1.058
5.	Adult education is a practical tool of adult empowerment on each of the three main pillars of sustainable development.	160	80.0%	40	20.0%	3.30	1.008
		Weighted Mean (\bar{x}) = 3.308 and STD = 0.971					



Table 2 above, shows that, adult educationist at the heart of adult sustainable human right($\bar{x} = 3.15$, $SD = 1.016$), adult education brings a new hope for physical challenge people and enhance their educational skills($\bar{x} = 3.43$, $SD = 0.954$), adult education plays a key role in adult sustainable development and creates favourable conditions for empowering global active citizens($\bar{x} = 3.56$, $SD = 0.819$), adult education contributes to the individual as well as collective development of societies in many ways($\bar{x} = 3.11$, $SD = 1.058$) and adult education is a practical tool of adult empowerment on each of the three main pillars of sustainable development($\bar{x} = 3.30$, $SD = 1.008$). From table 2 above, research question 2 has a weighted mean of 3.308 which is above the bench mark of 2.50. It can be concluded that adult education programme play vital roles on academic achievement towards sustaining the rights of physical challenged students in higher institutions in Lagos.

Discussion of Findings

Table 1 revealed the appropriateness of adult education programme for academic achievement towards sustaining the rights of physically challenged students in higher institutions in Lagos states. It was indicated that adult education programme is mainly designed to enhance rights of physically challenged students, provide physically challenged students ability to read up to a particular grade level sustain their human right, enhancing knowledge and skills; an innovative education and learning mechanism and promote the physical challenged need to be taken into consideration to promote self-development. The findings agree with Despotovic and Pejatovic (2005) who stated that adult education is a manifestation of lifelong learning and the integrated part of the entire education system for regular and special students. Adult education provides opportunities in enhancing knowledge and skills; an innovative education and learning mechanism, area with reaction to the needs and requirements of the economy and labour market, technological innovations, testing and introduction of new profiles, programs, skills and competencies, these are flexible and open for new forms of work and learning; and finally, important ways that are needed to be taken into consideration to promote self-development are, to acquire employment opportunities, have better income, acquire independence, remain active and in good health, reinforce the family and encourage independence among society members.

Table 2 therefore shows the role of adult education programme for academic achievement towards sustaining the rights of physically challenged students in higher institutions in Lagos. It was shows that adult education is at the heart of adult sustainable human right; it brings a new hope for physically challenged people and enhances their educational skills. Adult literacy contributes to the individual as well as collective development of societies in many ways. Adult literacy is a practical tool of adult empowerment on each of the three main pillars of sustainable development. This finding echos that of UNESCO (2010) also stated that literacy is a human right,



a tool of personal empowerment and a means for social and human development. Educational opportunities depend on literacy. Adult literacy is a key lever of change and a practical tool of adult empowerment on each of the three main pillars of sustainable development: economic development, social development and environmental protection. As the foundation of learning throughout life, literacy is at the heart of sustainable human right.

Conclusion

Education is a human right, a tool of personal empowerment and a means for social and human development. Adult literacy plays a key role in adult sustainable development and promotes economic, social, and environmental dimensions of sustainable development and creates favourable conditions for empowering global active citizens. Through appropriate adult education, physical challenged students are able to acquire an efficient understanding of the concepts and live their lives in an effectual manner. Adult education has positive effects on a wide range of aspects, such as empowerment, social inclusion, social networking, motivation for learning, work-related aspects, including improved job and career prospects, performance and earnings, job satisfaction and commitment to work and innovative skills, as well as other parts of everyday life for both individual especially physical challenged students.

Recommendations

Based on the findings of the study, it is recommended that;

1. To ensure sustainability of human right for physical challenged students, government should take the lead in the responsibility of providing trained and qualified teachers/facilitators as well as other supporting staff in adult literacy centre.
2. Government should draw on solidarity which can contribute to approaching the right to quality inclusive education for people with disabilities at all levels and lifelong learning, as recognised in the Convention on the Rights of Persons with Disabilities.
3. Adult Literacy centre should be properly backed up by government legislation and well formulated policy that would spell out in clear terms the roles and expectations of the institution. In addition, government should, as a matter of necessity, invest in ongoing feedback and evaluation mechanisms, data systematisation and research.



4. Furthermore, teachers/facilitators, on the one hand, should be given substantial initial training and regular retraining courses, and be exposed to opportunities for professional development. On the other hand, learners should be actively motivated through the use of a wide range of participatory methods, and through addressing issues of relevance to their lives.

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CHAPTER 2

PREDICTIVE INFLUENCE OF BIRTH ORDER AND FAMILY SIZE ON THE ACADEMIC ACHIEVEMENT OF HIGH-ABILITY LEARNERS IN IBADAN NORTH LOCAL GOVERNMENT, OYO STATE, NIGERIA

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Abstract

There has been continuous outcry from stakeholders against the discrepancies between the potential and the actual performance of high-ability learners who are expected to perform incredibly high in school subjects. Meanwhile, the prevalence of academic underachievement among this category of learners has shown the need for a body research into the likely causes and possible solutions. The study investigated the predictive influence of birth order and family size on the academic achievement of high-ability learners in Ibadan North Local Government, Oyo State, Nigeria.

The Social Cognitive Model of Achievement, Walberg's Theory of Academic Achievement, Confluence Theory and Family System Theory provided the framework while the descriptive survey research design of the correlational type was adopted. To achieve the purpose of this study, three research questions were formulated and tested at a 0.05 level of significance. The simple random sampling technique was adopted in selecting the ten (10) public (5) and private (5) secondary schools and one hundred (100) high-ability learners from SS1, SS2 and SS3 classes used for the study were purposively selected with their academic records. A self-constructed questionnaire on birth order and family size, and Academic Performance Assessment Scale (APAS) and Students' achievement tests in English (ELAT) and Mathematics (MAT) were the instruments used for data collection. Data collected was analysed using One-way Analysis of Variance (ANOVA).

The results revealed a significant influence ($r = .035, p < .05$) of birth order on academic achievement of high-ability learners in Ibadan North Local Government, Oyo State, Nigeria while the influence of family size ($r = .864, p$



<.05) on academic achievement of the participants was also significant. Also, the results show that there exists a very significant relationship ($r = 0.510$, $p < 0.05$), between birth order, family size and the academic achievement of the high-ability learners used for the study. First Children had the least academic achievement mean score (71%) while the Only Children and the Middle Children had the highest academic achievement mean score (75%). Findings also revealed that there are slight differences in the academic achievement mean score of the participants from Nuclear Family (74%), Polygamous Family (73%) and the Extended Family (73%).

Based on these findings, it is recommended that parents should be adequately sensitized by teachers of high-ability learners on how best they can assist their children irrespective of their order of birth, family size and other confounding variables such as birth spacing and family structure.

Keywords: Birth order, Family size, Academic achievement, High-ability learners, Teachers and parents

Introduction

Academic achievement of students, especially at the secondary school level is not only a pointer to effectiveness or otherwise of schools but also a major determinant of the future of youths in particular and the nation in general, (Muraina and Oyedeyi, 2014, cited in Fakolade and Akinmosin, 2017). Attaining a high level of academic achievement is what every parent or guardian as well as teacher wishes for their children, wards and students (Fakolade and Akinmosin, 2017). Academic achievement is generally regarded as the display of knowledge attained, or skills developed in the school subject. It is the level of performance in school subjects as exhibited by an individual student. However, there has been a general concern in recent times in the educational arena regarding the academic performance of high-ability learners as some of them tend to perform below expectations.

The investigation of the phenomena surrounding the ordinal position of birth started in late 19th century and was termed “birth order” research. Birth order is the placement of a child and their family. Birth order is the location in which a child is born in a family system. It refers to four basic positions of a child: firstborn, middle-born, lastborn and only. Each position has personality traits and other dynamics that reflect how their position is carried out in a person’s childhood (Kalkan, 2008). The order in which a person lands in their family can affect their life (Leman, 2009). Birth order is further shaped by the way a child’s parents and siblings have an effect on them (Leman, 2009). The order of a person’s birth has a lasting impact on personal development. Studies have indicated a strong relationship between birth order and



perception of favouritism, where there is clearly a tendency for favouritism to be perceived from the opposite-sex parent.

According to Groose (2000) “the position of a child in a family is a powerful predictor of personality and academic achievement and it is a factor that parents and teachers need to consider as they look for ways to raise happy and well-adjusted children”. The opinion of scholars on birth order and academic achievement has been contradictory. Conley and Glauber (2005) argued that additional children put a strain on the monetary and non-monetary resources of the family, thereby hampering academic achievement of the children. Since some of these resources cannot be accumulated (such as parental time), the amount available for each sibling depends on his/her position in the ‘sibling-ship’ and the spacing of children.

The middle-born children often report feeling inferior to older children because they do not possess their sibling’s advanced abilities. Sometimes they are very competitive with their firstborn sibling. Most middle-born choose to focus their energies in areas different from those in which their older sibling is already established. This competition with firstborns drive middle born children to innovation, doing something or being different from their older siblings in order to make themselves stand out in the family dynamics. They appear more competent at an earlier age than their older siblings because they follow the examples of their older siblings, (Ejekwu, 2016).

Children who are lastborn often have to use creative methods to carve out their place in a family where older siblings already occupy niches, such as the academic or the social butterfly. This creativity makes them more open to new and radical ideas. According to birth order expert Sulloway (2010), lastborn children were nine times as likely as firstborns to become martyrs during the protestant Reformation, which revolutionised the Christian religion. Only children do not have to compete with other kids for their parents’ attention, they can be very self-sufficient, but sometimes aloof. Groose (2003) further stated that, only children are often demanding perfectionists who have high expectations of themselves and this drives them to high academic achievement

Family characteristics have contributed to academic success or otherwise of learners generally. More importantly, for high-ability learners, who demonstrate high cognitive capacity, to perform academically at a level commensurate with their abilities, there are certain influences from the home, being their first point of socialisation. The home plays a major role in determining children’s academic output. In the home, factors such as family size, parenting style, parental involvement and socio-economic status contribute to how children perform in academic activities. Moreover, family size has been found to have explanatory potential with respect to academic achievement. Most studies coincide that as the number of family members increases, children’s academic results become worse (Ejekwu, 2016).



The family has been conceptualized as a group of people who are closely related by birth, marriage or adoption (Laizos, 2004). Traditionally in Nigeria, the family is not restricted to the father-mother-child triangle. It rather encompasses a wider group of people related by blood, marriage or by adoption. Hence; family members in the traditional Nigerian family include such persons as grandparents, aunts, uncles, nieces, cousins among others (Mbakwe, 2005). The family is the basic social unit of any society. The structure of the family affects the lives of members of the family in several ways especially that of children in the family (Berk, 2002). Family structures in Nigeria have changed over the years as a result of industrialisation and the introduction of modern family planning methods. Couples are now more able to determine the number of children they will have and when to have them. In addition, the inception of the Christian religion through embracing of western ideology has contributed to the changing structure of families in Nigeria. The new family structures are characterised by smallness in size, nuclear family structure, divorce and separation, adoptive families and single parent families while the traditional families are characterised by large family size, (family size of eight people and above) extended family structure and polygamy.

Berk (2001) was of the view that adult and children benefit from small family sizes. This is because in small families, parents are less stressed economically and emotionally. Again in small families, family members are more patient with each other and have more time to devote to each child's development. On the other hand, children in large families receive little attention and care as these have to be shared among the siblings (Berk, 2001). Involvement of family members not only enhances academic performance but it also has a positive influence on student attitude and behavior. A parent's interest and encouragement in a child's education can affect the child's attitude toward school, classroom conduct, self-esteem, absenteeism and motivation. Meanwhile, family size affects the level of parental involvement in a child's education.

Statement of the Problem

Researches have shown that family characteristics such as birth order and family size have influence on the academic performance of learners. The order in which a child is born into the family affects their academic achievement. This is because most families have less of burden in the early years of marriage. Similarly, when the family size is small, parents have the chance to be highly involved in their children's education. This contributes to good academic performance. However, when the family size grows larger, it becomes herculean for parents to adequately perform their roles in supporting the education of their wards.

Unfortunately, most high-ability learners are grossly affected by these family social characteristics because they require adequate support from home to nurture



their high academic potentials to reflect in their academic outputs. Most parents' of high-ability learners erroneously assume that they are already good academically, hence they do not require their care, attention and support before they can perform, academically to their fullest potential. This assumption leads to lack of adequate family support, which in turn affects the high-ability learner's academic achievement in schools.

It is in the light of the above discourse that the study was designed to find out whether or not birth order and family size have any influence on the academic achievement of high-ability learners, a case study of some selected secondary schools in Ibadan North Local Government, Oyo State, Nigeria.

Research Questions

The study sought to answer the following questions:

1. Does birth order influence academic achievement of high-ability learners?
2. Does family size influence academic achievement of high-ability learners?
3. What is the joint relationship between birth order and family size on academic achievement of high-ability learners?

Significance of the Study

The study investigated the predictive influence of birth order and family size on the academic achievement of high-ability learners in Ibadan North Local Government, Oyo State, Nigeria. Findings from the study would be useful in the following respects:

1. The study would provide empirical information on the socio-cultural effect and psychological influence of birth order and family size on the general academic performance of high-ability learners.
2. Findings from this study would serve as eye-opener to the parents of the high-ability children on why and how there could be a greater level of discrepancy in the academic performance of their children and their superior intelligence because not many parent could expect their high-ability children to underachieve in school and academic-related activities.
3. This study would propel parents to be more conscious of their roles towards encouraging better academic performance from their high-ability children.
4. This study would be useful to the teachers to work with parents of high-ability learners for a better approach to support their children's education.



5. Findings from the study would help government, teachers, school administrators, parents and students to understand the social issues that affect achievement of high-ability learners with a view to taking giant steps to address the prevalent circumstances such as family social characteristics.

Methodology

The study adopted a descriptive research of survey type. The population consisted of high-ability learners in selected secondary schools in Ibadan North Local Government Area of Oyo State. Ten (10) Secondary Schools were randomly sampled for the study. In each of the schools, a total of ten (10) senior secondary students were selected to participate in the study, making a total number of one hundred (100) students in all.

Four instruments, namely, Birth Order and Family Size Questionnaire, Academic Performance Assessment Scale (APAS), English Language Achievement Test (ELAT), Mathematics Achievement Test (MAT) were used to collect data for the study. The questionnaire was a self-developed instrument which was used in the collection of information on birth order and family size of the students. The questionnaire was divided into four sections; section A consists of background information of the respondents, while Section B and C contain items to elicit information on birth order and family size effects on academic achievement of the respondents. The items in the questionnaire were rated as follows: SA= Strongly Agree, A= Agree, N= Neutral, D= Disagree, and SD= Strongly Disagree. The achievement tests were constructed by the researcher based on WAEC past questions in English Language and Mathematics. The questionnaire and the achievement tests were given to experts in the field of research. Further comments were factored into production of final draft of the four instruments. The reliability of the Academic Performance Assessment Scale (APAS) was determined using Crombach alpha yielding an internal consistency of 0.89 and a test retest reliability of 0.85. The reliability of the questionnaire was determined using Crombach alpha yielding coefficient of .89. The achievement test was administered on a separate group of students from two schools, which were not part of the schools for the main study. The reliability was determined through test re-test yielding a value of .75.

The researcher sought permission from the principals of the sampled schools before embarking on the data collection process. The principals referred the research to the class teachers of SS1, SS2 and SS3 classes who nominated the participants through their previous academic record of three terms showing consistency of 75-100% achievement in both English Language and Mathematics. The data collected were analysed using frequency counts, simple percentage. In addition, One-Way Analysis of Variance (One-Way ANOVA) and Pearson Product Moment Correlation was employed to find out the relationship between independent variables and the dependent variable.



Results and Discussion

Answering the Research Questions

Research Question 1: Does birth order influence academic achievement of high-ability learners?

Table 1: Descriptive Analysis of the Mean Scores of the predictive influence of birth order (first independent variable) on the academic achievement (independent variable) of the participants.

ACHIEVEMENT		Descriptives							
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	Between - Component Variance
					Lower Bound	Upper Bound			
ONLY CHILD	3	75.6944	7.57295	4.37224	56.8822	94.5067	69.58	84.17	
FIRST CHILD	22	71.0227	5.83153	1.24329	68.4372	73.6083	59.17	82.08	
MIDDLE CHILD	45	75.7593	6.61037	.98542	73.7733	77.7452	64.58	100.42	
LAST BORN	24	73.5069	5.67715	1.15884	71.1097	75.9042	59.58	85.00	
Total	94	74.0736	6.42661	.66285	72.7573	75.3899	59.17	100.42	
Model	Fixed Effects		6.22968	.64254	72.7971	75.3501			
	Random Effects			1.31970	69.8737	78.2734			3.79468

Table 2: Analysis of Variance of the Predictive influence of birth order (first independent variable) on the academic achievement (independent variable) of the participants

ACHIEVEMENT		Oneway ANOVA			
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	348.225	3	116.075	2.991	.035
Within Groups	3492.801	90	38.809		
Total	3841.026	93			



The tables 1 and 2 above present the descriptive mean score analysis and One way Analysis of variance (ONEWAY ANOVA) that answers the RQ1 of the study. Specifically, the results show the predictive influence of birth order on the academic achievement of the participants as demonstrated in the achievement test scales.

The results show that there is a significant influence of birth order on the academic achievement of the participants ($r = .035$, $p < 0.05$). Therefore, the RQ1 returns positive. It is hereby accepted that birth order has a significant predictive influence on academic achievement of high-ability learners in Ibadan North Local Government, Oyo State, Nigeria. This is premised on the significant differences in the academic achievement mean score of the First Child (71%), Only Child (75%) and the Middle Child (75%). Lastborn has a mean academic achievement of 73% while the total mean academic achievement of the 4 birth order variables is 74%.

Research Question 2: Does family size influence academic achievement of high-ability learners?

Table 3: Descriptive Analysis of the Mean Scores of the predictive influence of family size (second independent variable) on the academic achievement (independent variable) of the participants.

ACHIEVEMENT		Descriptives								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	Between-Component Variance	
					Lower Bound	Upper Bound				
NUCLEAR		62	74.3280	5.47304	.69508	72.9381	75.7178	61.67	86.25	
POLYGAMOUS		19	73.6842	10.02530	2.29996	68.8522	78.5162	59.17	100.42	
EXTENDED		13	73.4295	4.00432	1.11060	71.0097	75.8493	67.08	80.00	
Total		94	74.0736	6.42661	.66285	72.7573	75.3899	59.17	100.42	
Mode	Fixed Effects			6.48645	.66903	72.7446	75.4025			
	Random Effects				.66903 ^a	71.1950 ^a	76.9522 ^a			-1.51391

- a. Warning: Between-component variance is negative. It was replaced by 0.0 in computing this random effects measure



Table 4: Analysis of Variance of the Predictive influence of family size (second independent variable) on the academic achievement (independent variable) of the participants

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	12.286	2	6.143	.146	.864
Within Groups	3828.740	91	42.074		
Total	3841.026	93			

Tables 3 and 4 above present the answer to the RQ2 which seeks to know if family size predictively influences the academic achievement of the participants. The result ($r = 0.864$, $p < 0.05$) shows that family size is significant and it did influenced academic achievement of high-ability learners in Ibadan North Local Government, Oyo State, Nigeria. Therefore, the research question 2 also returns positive and is hereby accepted. However, there are slight differences in the academic achievement mean score of the participants from Nuclear Family (74%), Polygamous Family (73%) and the Extended Family (73%) while the total academic achievement mean score of the 3 family size variables is 74%.

Research Question 3: What is the relationship that exists among family size, birth order and academic achievement of high-ability learners?

Table 5: Multiple Comparisons of the sub-variables of the first independent variable (birth order) with the dependent variable (academic achievement)

Multiple Comparisons

Independent Variable: BIRTH ORDER

Dependent Variable: ACHIEVEMENT

(I) Birth Order	(J) Birth Order	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
ONLY CHILD	FIRST CHILD	4.67172	3.83410	1.000	-5.6720	15.0155
	MIDDLE CHILD	-.06481	3.71466	1.000	-10.0863	9.9567
	LAST BORN	2.18750	3.81488	1.000	-8.1044	12.4794
FIRST CHILD	ONLY CHILD	-4.67172	3.83410	1.000	-15.0155	5.6720



	MIDDLE CHILD	-4.73653*	1.62064	.026	-9.1087	-.3643
	LAST BORN	-2.48422	1.83877	1.000	-7.4449	2.4765
MIDDLE CHILD	ONLY CHILD	.06481	3.71466	1.000	-9.9567	10.0863
	FIRST CHILD	4.73653*	1.62064	.026	.3643	9.1087
	LAST BORN	2.25231	1.57463	.936	-1.9958	6.5004
LAST BORN	ONLY CHILD	-2.18750	3.81488	1.000	-12.4794	8.1044
	FIRST CHILD	2.48422	1.83877	1.000	-2.4765	7.4449
	MIDDLE CHILD	-2.25231	1.57463	.936	-6.5004	1.9958
*. The mean difference is significant at the 0.05 level.						

The table 5 shows the relative comparison of achievement scores of the participants with their birth order variables.

(I) Family Size	(J) Family Size	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
NUCLEAR	POLYGAMOUS	.64375	1.70089	1.000	-3.5048	4.7923
	EXTENDED	.89847	1.97866	1.000	-3.9276	5.7245
POLYGAMOUS	NUCLEAR	-.64375	1.70089	1.000	-4.7923	3.5048
	EXTENDED	.25472	2.33471	1.000	-5.4397	5.9492
EXTENDED	NUCLEAR	-.89847	1.97866	1.000	-5.7245	3.9276
	POLYGAMOUS	-.25472	2.33471	1.000	-5.9492	5.4397

It is further established that there is a significant difference in the academic achievement of the high-ability learners and their birth orders ($r = 0.026$, p value < 0.05), First Children and Middle Children among the participants have different academic achievements and this is due to their birth order variations. Again, this shows that the RQ1 is valid. That is, there is a significant influence of birth order on the academic achievement the high-ability learners used for the study. The results also reveal that there was no significant difference between academic achievements of Only Children and Lastborn Children.



Table 6: Multiple Comparisons of the sub-variables of the second independent variable (family size) with the dependent variable (academic achievement)

DESCRIPTIVES

	Mean	Standard Deviation	N
BIRTH ORDER	19.0000	4.43350	94
FAMILY SIZE	28.8298	5.30903	94
ACADEMIC ACHIEVEMENT	74.0736	6.42661	94

Table 6 shows the relative comparison of achievement scores of the participants with their family size variables. It is further established that there are no significant differences between the academic achievement of the high-ability learners used for the study and their family size variables ($r = 1.0$, $p < 0.05$).

The results also reveal that there exist no relationship between family size of learners and their academic achievement either between or within.

Table 7: Pearson Product Moment Correlation table of the independent variables (birth order and family size) and the dependent variable (academic achievement)

Correlations				
		BIRTHORDER	FAMILY SIZE	ACADEMIC ACHIEVEMENT
FAMILY SIZE	Pearson Correlation	.510**	1	-.063
	Sig. (2-tailed)	.000		.549
	N	94	94	94
BIRTH ORDER	Pearson Correlation	1	.510**	-.072
	Sig. (2-tailed)		.000	.492
	N	94	94	94
ACADEMIC ACHIEVEMENT	Pearson Correlation	-.072	-.063	1
	Sig. (2-tailed)	.492	.549	
	N	94	94	94
**. Correlation is significant at the 0.01 level (2-tailed).				



The table 7 above shows that there is exists a very significant relationship ($r = 0.510$, $p < 0.05$), between birth order, family size and the academic achievement of the high-ability learners used for the study.

Therefore, the study is right to conclude that there is a joint predictive influence of birth order and family size on the academic achievement of high-ability learners.

Discussion of Findings

The study found there was a significant influence of birth order on the achievement of high-ability learners. Findings from the study show that the orders of birth of the high-ability learners predicted their academic achievement. The result of this study shows that Middle children and Only Children had higher academic achievement than the First Children and the children who are lastborn used in this study.

This finding agrees with other studies like Albarkheel, Masuadi, Riba, Al-Jundi and Sakka (2019) who conducted a research on the association between birth order and academic performance of undergraduate Dental College students in Riyadh, Saudi Arabia. They found out that middle born children have higher achievement scores than other categories of the students on sibling-rank. Sanni (2019) also found a similar result in his study of the relationship among birth order, learning styles and academic performance of senior Secondary School science students in Osun State, Nigeria. He found out that there is a difference between academic achievements of the students based on their different order of birth. This shows the relevancy of the findings of this study.

The finding is in contrast with the seminal works that were conducted with both gifted and non-gifted samples, which showed that first-born children are higher achievers than other-born children. For instance, Adams and Phillips (1972) studied differences between first-born and later-born elementary school students and concluded that first-borns scored significantly higher than did later-borns on four different measures of intellectual and academic performance. Moreover, Paulhus *et al.* (1999) studied the effect of birth order on personality and achievement. They found that first-borns were more achieving compared with later-born students.

Furthermore, the second research question of this study seeks to know if family size, in terms of the number of parents, children and dependents who live in the same house, can influence academic achievement of high-ability learners from such homes. The result shows that family size had significant influence on the academic achievement of the high-ability learners used for the study. In other words, there was a significant difference in the academic achievement of learners from various family sizes. This means family size has a predictive influence on the academic achievement of high-ability learners used for the study. This result agrees



with the findings of Okon (1994) that the nuclear family tends to make for co-operation and democratic type of relationship and those parents in such families pay attention to the education of their children by providing physical materials while at same time preparing the child for subsequent career. The result disagrees with the findings of Oni and Olaniran (2018) that there is no significant difference in academic performance of children and their family type.

Similarly, Iwork and Uwah (2008) were of the opinion that polygamous and extended family systems are made up of more than one family unit and extends across more than two generations of human beings and that extended family system leads to parents not being able to provide basic school needs such as text books which are necessary for students' academic performance. According to Ella (2015), the family type that a child comes from, nuclear, polygamous or extended, usually has an impact on a child's academic performance.

Meanwhile, related studies which explored parents' socio-economic status and parenting styles proved that family variables affect academic achievement of learners. Azumah, Adjei and Nachinaab (2017) researched on the effects of family size on the investment of child education, case study of Atonsu-Buokro, Kumasi, Ghana. Findings from the study indicated that children from large families mostly enroll late in school perform poorly and leave school early as compared to those from small family. The results from the study revealed financial problem, lack of parental attention and poor health as the main causes. Other socio-economic variables also influenced child quality in the suburb. Based on the findings, it can be concluded that large family size has negative influence on children education in suburb.

Adongo, Awinaba, Dapaah, Jonathan, Wireko and Daniel (2022) found out that family size characteristics have an influence on high school students' academic performance. A small family influences academic performance more than a large family does. The findings demonstrate the importance of family size in determining educational quality and perceived influence on academic performance. Furthermore, the findings revealed that a small family's basic needs are met with a smaller portion of the family's income than a large family's basic needs.

On the joint relationship of the independent variables (birth order and family size) and the dependent variable (academic achievement), the results show that there is a positive relationship among the variables. This relationship is however more significant in birth order and academic achievement than in family size and academic achievement. This indicated that there is a relative relationship among birth order, family size and academic achievement of high-ability learners. This shows that academic underachievement among this category of learners can be attributed to birth order and family social factors. The finding from this study complements the submission of Lawrence (2004), who stated that high-ability children are born with an insatiable desire to learn and assimilate information about the world they are living in and each is programmed genetically to develop new skills and abilities. As children



start their first day of kindergarten most are excited, wide-eyed, and eager to begin their new world of learning in the education setting. Unfortunately, as times goes by, for some, the excitement, eagerness, and willingness to learn fizzles out as they progress in life due to inherent family and home factors.

The various findings from this study support the hypothesis that birth order and family size predictively influence academic performance of high-ability learners. The magnitude of this academic underachievement increases as the severity or frequency of the family variables increases.

From the result, Firstborn children have a lot of responsibilities to look after their younger siblings. This accounts for their being overwhelmed with responsibilities as they grow older. Meanwhile, they enjoy such privileges when they were the only child with their parents. Their good academic achievement at early age is therefore transferred unto their successive siblings who inherit and take advantage to progress academically. The results have also held that when controlling for multiple confounding factors; that may also contribute to lower academic performance. Confounding factors such as parents' socio-economic status, parental level of education and family structures can negatively or otherwise influence the academic achievement of high-ability learners.

The counseling implication of outcome of this study is that family size and birth order are fundamental variables in academic success. Parents should maintain high commitment, for optimal range for academic success because the number of children in the family, birth order, and birth spacing will help in interactions, supports and financial assistance.

Finally, birth order and family size are two indivisible family variables that can jointly or individually influence academic achievement of learners. There are other co-existing variables within these two variables. Birth order characteristics can further be broken into birth spacing, gender in birth order, and parental expectation of the gender of their unborn baby. Family size can also be further divided into family background, culture, structure, religion and parental involvement in their children's education. These factors and many others are critical in the educational outcomes of high-ability learners.

Conclusion and Recommendation

The study investigated the predictive influence of birth order and family size on the academic achievement of high-ability learners in Ibadan North Local Government Area of Oyo State. The study revealed that birth order and family size influence academic achievement of high-ability learners. Middle born children and only children had positive influence of their birth order on their academic achievement while the first born and the lastborn had negative influence of their birth order on their



academic achievement. Also, the result revealed that family size influenced academic achievement of the high-ability learners with the learners from small family size having higher academic achievement than their peers from large family size. Therefore, it can be deduced that birth order, family size and other family social variables have huge contribution to the academic achievement of learners, and more importantly high-ability learners like their peers. Based on these findings, it is recommended that parents should be sensitized by teachers on the greater effect of their contribution to the educational outcome of their children. Parents should also endeavor to make adequate provisions for their children to be able to cope with their peers from other families academically. Therefore, parents should always build their family structure on their resources and socio-economic status in order to avoid inadequacy which will affect educational progress of their children. Lastly, parents should always create time for their children's education and success in life regardless of their order of birth into the family.

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CHAPTER 3

ASSESSING THE EFFECTIVENESS OF THE USE OF INSTRUCTIONAL MEDIA BY TEACHERS OF ENGLISH LANGUAGE IN UKWUANI LOCAL GOVERNMENT AREA OF DELTA STATE

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Abstract

The study investigated the Effectiveness of the Use of Instructional Media by Teachers of English Language in Ukwuani Local Government Area of Delta State. Four research questions were raised to guide the study. The researcher adopted a descriptive survey research design for the study. The population of the study comprised the entire teachers in public junior secondary schools in Ukwuani Local Government Area of Delta State, from which a sample size of 69 teachers were selected using simple random sampling technique. The instrument for data collection was a self-structured questionnaire organized into four parts in line with the four research questions to elicit responses on a 4-points Likert scale. Data was analysed using mean rating and standard deviation. The findings revealed that recent and relevant textbooks of English, pictures, models, charts, diagrams, drawings and specimen are available, laboratories, school farms and community resource places are also available and utilised by teachers for teaching and learning effectiveness of English language. The researcher therefore concluded that no meaningful teaching of English language could be done without the use of instructional material. From the findings, it was recommended that government should provide recent textbooks and other instructional materials to schools for the utilisation of the teachers; and that experienced and qualified teachers who have the requisite skills in the utilisation and improvisation of instructional materials/media for the teaching and learning of English should be recruited to teach the subject.



Keywords: *Teaching and learning, Instructional media, Effectiveness, Requisite skills, Improvisation*

Introduction

Learning could be more effective when various means that portray sightseeing or visualization are deployed in teaching. This kind of effectiveness in teaching can be achieved through the use of instructional media. According to Umaru (2011), instructional media/materials are learning aids on a particular subject area. They are provided by the school authorities and in most times improvised by the teacher, and meant to improve the quality of education effective academic performance of students in schools. The performance of students in the teaching and learning of English language is a function of education quality and success in achieving educational goals. Iwu, Ijioma, Onoja and Nzewiue (2011) posit that the place of teaching aids or instructional media cannot be taken for granted; that teaching aids are those relevant materials utilized by the teacher during instructional process in lessons and they in turn affect the behaviour of the learner, in this case the learners of English.

Instructional media according to Emma and Ajayi (2014) are those things which help teaching and learning process, help to promote understanding of the concept and generalization by making lesson practical and realistic, which to a larger extent impart on students' academic performance positively. In the opinion of Onyemezi (2010), instructional media in education are anything in the teaching and learning environment which is or that are of value in forwarding the thinking and understanding of students and make teaching easy for the teacher. As mentioned earlier, effective instruction cannot be fully accomplished without the use of instructional media/materials. Instructional materials include both visuals and audio-visuals such as pictures, flash, cards, posters, charts, tape recorders, radio, video, television, computers among others. These materials serve as supplement to the normal process of instruction. It helps to promote understanding of the concept and generalization of practical oriented subject or classroom by making lessons practical and realistic. Any teacher who has the interest of the students at heart is bound to think of the ways and means he will employ to make his teaching and learning of English more effective and more interesting to the students. Adeniyi (2010) posits that the effect of instructional materials is to communicate more permanently and information is retained when supplemented with these teaching aids. Certainly, instructional media/materials when carefully selected and skillfully used will make learning more effective at secondary school level.

Secondary school is the school education for young people between the ages of 11 (for junior secondary) and 16 to 18 (for senior secondary). According to the National Policy on Education (NPE, 2004), secondary education is the education children received after primary education and before the tertiary stage. It therefore



means that quality education is indispensable in creating a bright future for individuals and nations alike. The Federal Republic of Nigeria (2013) stated that the broad goal of secondary education is to prepare individuals for useful living within the society and higher education. Therefore, for effective and quality secondary education, the instructional materials utilized by ‘teachers in the effective teaching and learning of English needs to be assessed.

The effectiveness of the use of appropriate instructional materials in secondary school teaching and learning of English have been influenced by a number of factors which determine the impact it has on students’ academic performance. One important factor is the extent of availability of instructional media/materials in most secondary schools. Teachers become handicapped when instructional materials are not available and there is a popular saying that one cannot use what one does not have. In some cases where the needed instructional media are not provided by the school, the onus lies on the teachers to improvise instructional materials. Please bear in mind that for the purpose of this study the terms instructional media and instructional materials will be used interchangeably. Another factor is the extent of utilisation of these available instructional materials. This requires quality teachers of English who have built their capacity to use these instructional materials to aid students understanding of concepts and terms taught. Some teachers have challenges in utilizing modern ICT devices as instructional media because they have not been trained in the use of modern technologies. Ibelegbu (2013), in a study, reported that some present day teachers of English and other subjects in public schools are those that were trained and had been working in school system many years ago before the introduction of modern technologies and facilities. In this situation, teachers find it difficult to utilize the available ICT facilities in teaching.

This further calls for the quality of teachers which another factor influencing the impact of instructional media on students learning in secondary schools. In order to give quality education to the younger generation, there is the need for employment of more competent, experienced and qualified English teachers in secondary schools who could utilise modern instructional materials. Quality of school instructional materials positively affects students’ performance while teacher quality is negatively correlated (Suryadarma, Suryabadi, Symaito and Rogers (2016). Mullis Kennedy, Martin and Sainsburg (2014) argue that teacher quality is an important determinant for effective teaching and that both qualified teacher and students will be helpless if certain fundamental policies and facilities are not in place to activate conducive teaching and learning environment. This is to say that there is a direct relationship between teacher qualification and teachers effectiveness. Therefore, the utilisation of instructional media is necessary to supplement the available instructional resources and qualified teachers.

Moreover, the time or period allotted for the teaching of English is another significant factor that influences the use of instructional materials. English language



just like some practical-oriented subjects are not allotted sufficient time on the timetable and usually competes with academic subjects (Lauglo, 2016), hence the teacher of English has time constraint to teach and demonstrate certain concepts using instructional materials.

The present status of the use of instructional materials in Nigeria is reported to be very low and unsatisfactory. As Ogunsanya (2014) noted in his study that there is need for improvement in the utilization of instructional materials while Ajayi (1988) cited in Umaru (2011) reported that most science and arts based subjects cannot be taught effectively without the use of appropriate instructional materials. He further stated that in making use of any instructional media/materials, such materials must be previewed, that is having full knowledge of the material, prepare the environment where it will be used, prepare audience by means of making sure that the materials to be used will attract attention arouse, motivate and provide the rationale that could be used in the beginning, middle and end.

Objectives of the study:

The objectives of the study are to:

- i. find out the extent of availability of instructional materials in public secondary schools in Ukwuani Local Government Area of Delta State;
- ii. ascertain the extent of utilisation of instructional material by teachers in Ukwuani Local Government Area; and
- iii. determine the extent to which teachers qualification influences the utilisation of instructional materials in public schools in Ukwuani Local Government Area.

Research Questions

The following research questions guided the study:

- i. To what are extent instructional materials available in public secondary schools in Ukwuani Local Government?
- ii. To what extent are instructional materials utilised in teaching students in Ukwuani Local Government Area of Delta State?

Purpose of the Study

The main purpose of this research is to carry out an assessment of instructional media/materials utilised by teachers for teaching and learning effectiveness in



secondary schools in Ukwuani Local Government Area of Delta State. The purpose is to make good teachers of English, who can effectively use instructional materials in delivering their lessons. In this whole sense the work is aimed at making a complete and competent teacher both in subject mastery and pedagogy.

Methodology

The study adopted a descriptive survey research design and it sought to assess the effectiveness of the use of instructional media by teachers in Ukwuani Local Government of Delta State. Two research questions were raised to guide the study. The population of the study comprised the entire teachers in public junior secondary schools in Ukwuani Local Government Area of Delta State. A sample size of sixty nine teachers were selected using simple random sampling technique. The instrument for data collection was a self-structured questionnaire organized into four parts in line with the research questions to elicit responses on a 4-point Likert scale as follows: very high extent (VHE), High Extent (HE), Low Extent (LE), and Very Low Extent (VLE). Data was analysed using mean rating and standard deviation.

Research Question One: To what extent are instructional materials/media available in public secondary schools in Ukwuani Local Government of Delta State?

Table 1: Mean and standard deviation statistics on the extent instructional materials are available in public secondary schools

S/N	STATEMENT	VHE 4	HE 3	LE 2	VLE 1	TOT	X	SD	REMARK
1	Recent and relevant textbooks of English are available in secondary schools	30 120	26 78	4 8	0 0	60 206	3.43	0.83	Agreed
2	Pictures, models, charts, diagrams, drawings and specimen are available	27 108	23 69	6 12	4 4	60 193	3.22	0.55	Agreed
3	Laboratories and school farms are available in the school and also adequate for effective teaching and learning of English	16 64	32 96	12 24	0 0	60 184	3.07	0.77	Agreed



4	Community resource places like industrial establishments, market place, and game reserves are available	25 100	19 57	10 20	6 6	60 122	3.05	0.74	Agreed
5	Audio and visual recorder, magnetic films, projectors, slide, computer hardware and software are available	5 20	14 42	19 38	22 22	60 122	2.03	0.97	Disagreed
	Grand Mean and SD						2.96	0.77	

Table 1 revealed that all items from 1 -5 were agreed upon with mean ratings of 3.43, 3.22, 3.07 and 3.05 respectively except item 5 with mean rating 2.03 which is less than 2.50. The grand mean and standard deviation of 2.96 and 0.72 respectively also suggest a good level of agreement to the extent of availability of instructional materials in secondary schools. This implies that recent and relevant textbooks, pictures, models, charts, diagrams, drawings and specimen are available, laboratories and school farms, community resource places like industrial establishments, market place, and game reserves and available to teachers in secondary schools. However, respondents did not agree with the statement that audio and visual recorder, magnetic films, projectors, slide, computer hardware and software are available.

Research Question Two: To what extent are instructional materials utilized by teachers in teaching students in Ukwuani Local Government Area of Delta State?

Table 2: Mean and standard deviation statistics on the extent instructional materials utilised in teaching students

S/N	STATEMENT	VHE 4	HE 3	LE 2	VLE 1	TOT	X	SD	REMARK
6	Teachers use chalkboard most often as instructional materials.	27 108	23 69	6 12	4 4	60 193	3.43	0.83	Agreed
7	Teachers use textbook in teaching students.	19 76	22 66	13 26	6 6	60 174	3.22	0.55	Agreed



8	Teachers use computer and overhead projectors in teaching students.	5 20	14 42	19 38	22 22	60 122	3.07	0.77	Agreed
9	Pictures are printed and pasted on cardboard which are used as instructional materials.	25 100	28 84	6 12	1 1	60 197	3.05	0.74	Agreed
10	The use of charts and picture books is common in most secondary schools.	17 68	27 81	13 26	3 3	60 178	2.03	0.97	Disagreed
Grand Mean and SD							2.88	0.71	

Table 2 revealed that all items from 6 -10 were agreed upon with mean ratings of 3.22, 2.90, 3.28 and 2.97 respectively except item 8 with mean rating of 2.03 which is less than 2.50. the grand mean standard deviation of 2.88 and 0.71 respectively also suggest a good level of agreement to the extent of utilization of instructional materials in secondary schools. This implies that teachers of English use chalkboard most often, textbook in teaching students, pictures are printed and pasted on chalkboard, charts and picture books are used as instructional materials in teaching students. However, respondents did not agree to the statement that teachers use computer and overhead projectors in teaching students.

Research Question Three: To what extent does teachers' qualification influence the utilisation of instructional materials in public secondary schools in Ukwuani Local Government Area of Delta State?

Table 3: Mean and standard deviation statistics on the extent to which teachers' qualification influence the utilisation of instructional materials in public secondary school

S/N	STATEMENT	VHE 4	HE 3	LE 2	VLE 1	TOT	X	SD	REMARK
11	Some teachers do not know how to use computer devices as instructional materials	25 100	28 84	6 12	1 1	60 197	3.43	0.83	Agreed



12	Some teacher are knowledgeable but do not have the experience required to improvise instructional materials when not available	27 108	23 69	6 12	4 4	60 193	3.22	0.55	Agreed
13	Qualified teachers uses instructional materials to improve interactions among students	19 76	29 87	10 20	2 2	60 185	3.07	0.77	Agreed
14	The quality of teachers determines how effective the use of instructional materials could be.	29 116	23 69	6 12	2 2	60 199	3.05	0.74	Agreed
15	Qualified teachers creates interest and self-activity on students using instructional materials.	27 56	29 57	4 18	0 0	60 131	2.03	0.97	Disagreed
Grand Mean and SD							3.27	0.64	

Table 3 revealed that all items from 11-15 were agreed upon with mean ratings of 3.28, 3.07, 3.08, 3.32 and 3.38 respectively, and grand mean and standard deviation of 2.88 and 0.71 respectively. This implies that some teachers do not know how to use computer devices as instructional materials, are knowledgeable but do not have the experience required to improve instructional materials when not available, qualified teachers determines how effective the use of instruction materials could be, uses instructional materials to improve interactions among students, creates interest and self-activity on students.

The use of instructional media can enhance the academic achievement of students. Cronbach (2009) states the important elements of behaviour that provides the base for learning theory situation which consists of all the objects, persons and symbols in the learning environment. Experience in situations prepares a person to respond to a similar situation in future. The use of instructional media can appeal to the individuals attention by creating interest goals that will help the learner make direct effort. Teacher's problem of motivation is essentially one of challenging situation with instructional media in which the learner will see goals he wants to attain.

Osuala (2010) in his own contribution said it does not only help to motivate and develop interest on the part of the student, but also help to bring about and enhance respect for the teachers' knowledge of the subject. Instructional media are also described as concrete or both to the sense organs during teaching Agina-Obu (2000). Instructional media are any form of materials that can aid or speed up the process of



learning. They are the necessary extra ingredients that makes teaching and learning a pleasant and satisfying enterprise (Johnson, 1971). Instructional media are also tangible objects employed by the teacher or an organisation for the purpose of giving or facilitating instruction.

Discussion of Findings

Findings from Table 1 revealed that recent and relevant textbooks, pictures, models, charts, diagrams, drawings and specimen are available, laboratories and school farms, community resource places like industrial establishments, market place, and game reserves are available in secondary schools for teaching, but there are no audio and visual recorder, magnetic films, projectors, slide, computer hardware and software for use as instructional materials. This is in line the report of Umaru (201 1) who itemized some instructional materials available in most public schools to include visual, audio, audio-visual, projected, non-projected, hardware, software and community resources places.

Findings from Table 2 revealed that teachers use chalk board most often, textbook in teaching students, pictures are printed and pasted on cardboard, charts and picture books are used as instructional materials in teaching students, but teachers do not use computer and overhead projector as instructional materials in teaching students. This is in agreement with the findings of Barlo (2008) which showed that the teaching in some schools is dependent on the availability and utilization of instructional materials, and the inadequate provision and use of it has negative impact on the quality of teaching and learning of students, which is typical of the findings of this study. In support of the above findings, Bajah (2012) posits that most times, the materials used for teaching may not be readily available. According to Bonsu (2016), teachers should improvise the teaching and learning resources which were not available in the schools to enhance teacher's effectiveness and quality of education in schools.

Findings from Table 3 revealed that some teachers do not know how to use computer devices as instructional materials, are knowledgeable but do not have the experience required to improvise instructional materials when not available, qualified teachers determines how effective the use of instructional materials could be, uses instructional materials to improve interactions among students, creates interest and self-activity on students, In line with the above findings, Bonsu (2016) realized that most teachers of English in the public schools were better qualified academically in the teaching profession with most of them having bachelor's degree than their private counterparts, and that teachers did not use instructional materials for teaching because they were not available and adequate in the public schools. Ibelegbu (2013), in support of the above findings, reported that some present teachers of English in public schools are those that were trained and had been working in school system many years ago



particularly before the introduction of modern technologies in teaching, and that they were not trained with modern ICT technologies and facilities. In this case, teachers find it difficult to utilise the available ICT facilities in teaching. Okereke (2009) conducted a study which revealed a similar report that instructional material facilitates, stimulates and aids students to develop active interest in any topic introduced by the teacher. This finding agrees with that of Uyagu (2009) whose studies revealed that students performed better when appropriate and improvised materials were made available and utilized in teaching and that, teachers possessing good qualifications and experience on the use of instructional materials enhanced students' performance. Mullis, Kennedy, Martin and Sainsbury (2014), in support of the above findings, also argue that teacher quality is an important determinant of effective teaching, and that both the qualified teacher and students will be helpless if certain fundamental policies and facilities are not in place to activate conducive teaching and learning environment.

Conclusion

The study had shown that the utilisation of instructional materials by teachers of English is dependent on its availability and that is a function of teaching and learning effectiveness. Most relevant instructional materials needed for teaching are not readily available especially the modern day computer and electronic devices, hence they are not utilised by teachers. It has also been shown that teachers' qualification and time allocated to periods in teaching students influence the effective utilization of instructional materials in teaching students. The researcher therefore concluded that no matter how qualified a teacher is, he would be handicap to translate his quality into classroom teaching and learning experiences if there are no available instructional materials.

Recommendations

The following recommendations were made:

1. Government should make available recent textbooks and other instructional materials to schools for the utilisation by teachers.
2. Experienced and qualified teachers who have the requisite skills in utilisation and improvisation of instructional materials should recruited in secondary schools.
3. School administrators should monitor and supervise teachers use of instructional materials and ensure that teachers who do not use or improvise instructional materials are disciplined.



4. Training and retraining of teachers in modern ICT and computer based instructions should be a priority of the government to enable teachers effectively utilise these modern digital technology in teaching students.
5. Curriculum planners should allocate more time in the period for teaching subjects especially those that are practical-oriented to avail teachers with ample time to demonstrate and utilize instructional materials while teaching.

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CHAPTER 4

SCHOOL SECURITY SUPERVISION: A PANACEA FOR A CONDUCTIVE LEARNING ENVIRONMENT

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Abstract

This study was to examine school security supervision: A panacea for a conducive learning environment. Specifically, the study seek to examine the influence of perimeter fencing on school security in secondary school in Cross River State. Ex-post facto research design was adopted for the study. The population of the study comprised school administrators and teachers in Cross River State. A stratified sampling technique was used to select 10 principals, 20 vice principal and 170 teachers from the study area and these gave a sample size of 200 respondents. The Main Instrument used in this study was a questionnaire titled “School Security Supervision Questionnaire (SSSQ)”. Face and content validation of the instrument was carried out to ensure that the instrument had the accuracy for study under consideration. Cronbach’s Alpha technique was used to determine the level of reliability of the instrument. The reliability coefficient obtained was 0.76 and this was high



enough to justify the use of the instrument. The researcher subjected the data generated for this study to appropriate statistical techniques such as descriptive statistics and simple regression. The test for significance was done at 0.05 alpha levels. The study concluded that schools indicated different levels of safety, perimeter fencing and school security in the physical environments. In terms of school-based activities, schools that were observed displayed inadequate maintenance and surveillance systems. The physical environments of schools need more attention in terms of ensuring that the basic features of safety, perimeter fencing and security are put in place. Based on conclusion in the study, recommendation was made among others that: Schools should take care to priorities solutions appropriate to their site's specific risks and challenges; Perimeter fencing should include at least two points of entry, in case one is blocked during an emergency, and schools should reflect on the contribution of perimeter fencing to these strategies when choosing among various options.

Keywords: *School security supervision, Perimeter fencing, Conducive learning environment*

Introduction

Effective teaching and learning can take place only in a safe and secure school environment. Indeed, every community wants such an environment for their children. Ezeji, Ohalete and Elezuo (2019) posits that school safety and perimeter fencing encompasses the total learning environment, including learners, classrooms, the school campus, educators, parents, and the community. Squelch (2001) defines a safe school as one that is free from danger and possible harm, where non-educators, educators and learners can work, teach and learn without fear or ridicule, intimidation, harassment, humiliation or violence. A safe school is therefore a healthy school, in that it is physically and psycho-socially safe.

The term “security” can be defined as the provision of cover, protection and safety to lives and properties against theft, or destruction. According to Rogers (2009), security can broadly be defined as a means of providing effective levels of protection against pure risk. It is a process used to create a relatively crime free area. The aim of security is to assess the vulnerability to risk and thereafter to employ techniques and measures in order to reduce that vulnerability to reasonable level. Security will therefore assist in creating a stable, fairly predictable environment in which individuals may move freely with reduced or without any disturbance or injury (Lamboard and Kole, 2008). Thus, school security relates more squarely to personal and physical security. This is because the school is made up of both human and material resources which are integral components of the larger society. School personnel and students as well as the material resources in schools are liable for



protection and safety in this period of universal terrorist's attacks, in which schools have become a subject of attack

The security of schools has become a growing concern due to recent changes in our society including terrorist attacks, gun crime, vandalism, arson, child exploitation and other issues prevalent in our society that put the safety of children, teachers, staff and parents at risk. In some schools, colleges or other educational institutions intruders can wander in and out of the premises as they please, as the access to buildings is not considered seriously enough within risk assessments. While some provisions are, for some establishments excessive (this is often dependent on the institution), such as metal detectors and bag checking which are now seen in some schools across the US. Other basic measures like surveillance, perimeter and access security are an absolute necessity. Students and teachers have the right to feel safe and secure with the peace of mind that should a situation arise they have the right security measures and procedures in place to keep themselves and those around them safe. Parents too should feel reassured with the knowledge that when their child attends school, they will be safe in the care of the teachers and the security of the building.

There is a wide range of physical security measures that can be put in practice to supervise security activities in schools. They can be divided into categories, consisting of the outside perimeter measure, inner middle perimeter measure and internal measures (Lamboard and Kole, 2008). The outside perimeter measures are those measures that can be found outside the school building normally the perimeter of the premises such as signs, fences and other barriers, lighting, alarms and patrols. The inner middle perimeter measures are the security measures used within the boundaries of the facility and can include fence and other barriers, alarms, light, CCTV external cameras, warning signs, doors, lock, burglar proofing on windows, security staff and access control system. Lastly, there are the internal physical security measures which are the ones that can be found within building such as alarms, CCTV cameras, turnstiles, windows and door bars, locks, safes, vaults protective lighting and other barriers (Ike, 2015).

Perimeter fencing is an important security and aesthetic feature of any school; it blocks intruders and other unwanted visitors from entering the site, helps keep staff and students safe on site and is one of the first things prospective students and parents see when visiting. When specifying fencing for schools, it is worth considering not only how secure a school's fencing is, but also the impression it makes. Today's schools contain valuable and portable property that is attractive to thieves (Jacksons fencing 2020). Fencing and gates are the first line of defense and have a vital role to play. Nevertheless, schools have to remain an attractive learning environment, and schools are encouraged to open their facilities to the wider community at other times. Adequate security, therefore, has to be achieved without schools looking like prisons. Every school has its own needs and challenges, so the solution to the problem is different in each case. School fences, if installed well and maintained, can be



beneficial to a school for a number of reasons. Not only for boosting surveillance and improving security but, perhaps unexpectedly, for the morale and well-being of the students.

Supervision of security is a vital aspect of school administration. Supervision of security refers to the effective monitoring and checking of security situations as well as overseeing security guards to perform their functions of ensuring safety, protecting lives and properties effectively. The management of security is paramount to the effective management of schools and it is an issue that has attracted a great deal of attention and concern from learners, educators, parents, and the public at large. According to Stephen (2004), school security management refers to strategies and procedures required to co-ordinate the diverse activities of the institution in order to achieve safety. One of the important duties of the school manager is to ensure that safety programmes are implemented and that necessary steps are taken whenever situation arise which could be potentially dangerous (Bucher and Manning, 2005).

Supervision of security in schools is highly necessary because it is as important as the establishment of the school itself, because the school was established for the people and cannot continue if everybody in the school is dead. Security is the precaution taken to safeguard an environment from impending danger or injury. It is a measure taken to prevent dangers and threats. These are the measures taken to make the school environment safe. A place where there is security is a place of safety, (Haughton and Metcalf, 2000). How security is managed and supervised in public secondary schools, will also go a long way to influence the stability of the school, the work attitude and the overall performance of staff and students of the institution. It is the duty of the principals to ensure that both materials and human resources at his/her disposal are adequately maintained and guaranteed safety.

Statement of the Problem

Over the years, there have been problems of insecurity not only in our society but also in the school environment. This security has created several challenges to the general society including government, the school management, parents and many more. It is interesting to note here that every challenge has a solution to it. There are numerous strategies that can minimise this problem of insecurity and one of them is construction of availability of perimeter fencing.

If something drastic is not done, the existing security threats such as invasion, terrorism, bombing, armed insurgency robbery and lack of proper physical security facilities like fences, good security personnel could spiral out of control, leaving large number of students fearful, injured and deceased. There is a problem because most schools do not run as expected. It is against this backdrop that this study sought to



provide answer to the question: is there adequate perimeter fencing in public schools in Cross River State? An attempt to answer this question renders this study germane.

Objective of the Study

The main objective of this study is to examine school security supervision: A panacea for a conducive learning environment. Specifically, the study seeks to examine the influence of perimeter fencing on school security in secondary school in Cross River State.

Research Question

1. What is the influence of perimeter fencing on school security in secondary school in Cross River State?

Hypothesis

H₀₁: There is no significant influence of perimeter fencing on school security in secondary school in Cross River State.

Literature Review

Ezeji, Ohalete and Elezuo (2019) conducted a study to assess the perimeter fencing and school security as an empirical survey of the experience of the secondary school administrators and teachers. Ex-Post Facto research design was adopted for the study. The study area was Imo state. The population of the study comprised school administrators and teachers in Imo state. A stratified sampling technique was used to select 20 principals, 40 vice principal and 240 teachers from the study area and these gave a sample size of 300 respondents which constituted the sample size for the study. The Main Instrument used in this study was a questionnaire titled “Perimeter Fencing and School Security Questionnaire (PFSSQ)”. Face and content validation of the instrument was carried out to ensure that the instrument had the accuracy for study under consideration. Cronbach Alpha technique was used to determine the level of reliability of the instrument. The reliability coefficient obtained was 0.88 and this was high enough to justify the use of the instrument. The researcher subjected the data generated for this study to appropriate statistical techniques such as descriptive statistics and simple regression. The test for significance was done at 0.05 alpha levels. The study concluded that schools indicated different levels of security via perimeter fencing with very low extent of availability of perimeter fencing. The result also



proved that the level of the extent of school security is low. Finally, it was observed that there is significant influence of perimeter fencing on school security in secondary school in Imo State. One of the recommendations was that school administrators should take specific care related to “securing, perimeter fencing and limiting access points to the school.

Arop and Owan (2018) carried out a study to examine institutional variables and the supervision of security in secondary schools in Cross River State. The study specifically sought to determine whether there was a significant influence of school population, school type and school location, on the supervision of security in public secondary schools in Cross River State. Three null hypotheses were formulated accordingly to guide the study. 360 students and 120 teachers resulting in a total of 480 respondents, constituted the sample for the study. The instrument used for data collection was a questionnaire while Independent t-test was used to analyze data and test the hypotheses at .05 level of significance using Microsoft Excel version 2013. The results of the findings revealed that school population, school type and school location, all have an influence in the supervision of security in public secondary schools of Cross River State. It was also revealed that lowly populated, mixed-gender, and urban public secondary schools were more efficient in the supervision of security than their counterparts such as highly populated, single-gender and rural secondary schools. Based on the findings of this study, conclusions were drawn and recommendations were made.

Mwoma, Nyakwara and Murungi (2018) presents findings of a study conducted in preschools in informal settlements in Nairobi County, Kenya, focusing on safety and security for children in preschools. A mixed methods approach involving concurrent qualitative and quantitative data collection procedures was utilized for the study, conducted in 54 preschools involving 54 head teachers/managers, 78 pre-school teachers and four officers in education in Nairobi City County. Findings revealed that government has endeavoured to come up with guidelines and minimum standards through various policies, but preschools in informal settlements are experiencing a myriad of challenges impacting negatively on children’s learning. Among these are poor infrastructure, lack of play space and play equipment, congested classrooms and school compounds not fenced. In view of the challenges, it is recommended that county government in collaboration with other stakeholders in early childhood should come up with model preschools in informal settlements to create conducive learning environments. There is also a need for frequent inspection of preschools to ensure that safety and security standards are observed and implemented.

Muthiani (2016) carried out a study to establish factors influencing schools’ compliance to safety standards guidelines in Kitui Central sub-county, Kitui County. The target a population was 31 principals, 210 teachers and 400 student’s secretaries, this is because they were involved in day to day school management routines. Stratified, purposive and simple random sampling technique was employed, to divide



the schools into three categories (strata) of national schools, county schools and sub-county schools, followed by further division of each in terms of the students “gender in the school, giving rise to boys” schools, girls” schools and mixed day schools. A sample of 325 respondents was selected to participate in the study. These include 110 teachers, 200 students and 15 principals out of the 31 schools within the sub-county under the area of study. Three instruments were developed for the study. These were questionnaire for teachers and students; interview guide for principals and an observation schedule used by the researcher to check whether the schools had adhered to the safety measures. The data collected was grouped according to particular research objectives. For every objective, the responses were tabulated in a frequency distribution table. Quantitative data was analysed using descriptive statistics that include determination of the mean, frequency and percentage occurrences where applicable; as well as inferential statistics (Chi-Square and Pearson’s correlation). Qualitative data was analysed by thematic discussion of themes arising. In this respect, the data will be discussed according to the themes from the responses. . Reliability of instruments was determined by use of test –retest method. Validity of research instruments was done by conducting pilot study before the actual study .The discussions on the data were used to test the validity of the hypotheses. The main goal was to test whether every hypotheses applies to the topic under study or not. .The major findings of the study were the MOE standards and guidelines had not been fully implemented majorly due to inadequate funds and inadequate supervision. The major recommendations therefore were policy makers to follow up, monitor and evaluate safety situations in all educational institutions and provide funds. Significantly the study findings underscore the importance of adhering to safety standards and guidelines in schools thus education policy makers and other stake holders “must come up with strategies to prevent occurrence of disasters in schools.

Alimba (2018) conducted a study to assess security and security measures for schools operating in domains prone to insurgency in Nigeria. The security of school has become an indispensable issue in this era of pervasive terrorism. This is because schools are singled out for attack by terrorists, resulting in the destruction of school plants, deaths of teaching, non-teaching staff as well as students and leading to prolonged closure of schools. This development has hampered the issue of access, promoted dropout and scale down teachers’ interest in schooling. Thus, the need to understand security and security measures in order to prevent intruders, control crimes, deters threats and promotes safety in schools for effective teaching–learning. School security measures are strategies aimed at creating conducive climate for people to work assiduously without fear, threats or risks in schools. These measures are capable of preventing terrorists from easily gaining access to schools for attacks. In this discourse, the issues of security and security measures were explored to bring out their significance in promoting safe school in order to enhance academic exercises and to guarantee the security of individuals as well as school plants for the growth and development of the country. Therefore, the various issues underpinning the



understanding of education security and security measures were discussed for the purposes of encouraging their understanding and practicability even in northeast seriously affected by Boko Haram terrorism in Nigeria.

Smith (2002) carried out a study to identify and analysed the safety concerns of the staff and students of an urban middle school and their impact upon the learning environment. A purposive, non-random sampling of participants was used. The survey was given to 50 students, 25 staff, and 3 administrators. Data was collected through the use of a survey distributed to students, staff, and administrators. It emphasised school safety with regard to hallways and common areas. Students and administrators responded with 100% participation; eighty-nine percent of the surveyed staff responded. Analysis showed that students, staff and administrators agreed on issues of safety concern. The 3 groups of participants recommended improved hallway supervision and a further study on book bags. These strategies were implemented to improve school safety. The study concludes, among other points, that safety issues in a school encompass the everyday activities that make up the learning environment, and that making schools safe is a joint responsibility that requires a broad-based team approach.

Also, Ekpoh and Bassey (2011) carried out a research on School Location and Principal's Management of Teachers Indiscipline in Akwa Ibom State Secondary Schools, Nigeria. The study indicated that Urban and Rural principals differ in the management of indiscipline in teaching activities, school attendance and school related ethics. The intensity of these indiscipline problems was higher in urban areas because of the effect of civilization and development, whose attendant effect made teachers to behave in undesirable ways.

Jonathon (2019) carried out a quantitative study to find out the current status of school safety in regard to how school buildings are secured and how much the staff is trained on how to handle security related issues. The research was based on the differences between rural, suburban, and urban schools in the state of Illinois. My interest in this topic is a result of a decade of my life being devoted to public safety as a law enforcement officer. As a current educator, I still have an interest in the intricacies of safety as it relates to school settings. School security is also quite a timely issue, considering the recent school shootings that have occurred. As a result of this quantitative study, statistically significant differences between rural and suburban and rural and urban respondents were found. The study found that security-based resources are generally more sparsely funded in rural areas due partially to political factors in the state of Illinois, thereby making these schools more vulnerable to breaches in security.



Theoretical underpinning

According to Katsakiori, Sakellaropoulos and Manatakis (2009), Heinrich's revised domino theory brings on board the role of management in ensuring that safety measures are put in places of work to minimise accidents. They argue that planning, controlling, organising and leading by management are among the strategies that can be utilised to prevent accidents from happening in their place of work. They further maintain that unsafe acts and conditions are defined as symptoms of root causes that originate from steps one and two above (Katsakiori, *et al.*, 2009, Sabet, *et al.*, 2013).

Methodology

Ex-post facto research design was adopted for the study. The area of study is Cross River State in Nigeria. The population of the study comprised school administrators and teachers in Cross River State. A stratified sampling technique was used to select 10 principals, 20 vice principal and 170 teachers from the study area and these gave a sample size of 200 respondents. The Main Instrument used in this study was a questionnaire titled "School Security Supervision Questionnaire (SSSQ)". Face and content validation of the instrument was carried out to ensure that the instrument had the accuracy for study under consideration. Cronbach's Alpha technique was used to determine the level of reliability of the instrument. The reliability coefficient obtained was 0.76 and this was high enough to justify the use of the instrument. The researcher subjected the data generated for this study to appropriate statistical techniques such as descriptive statistics and simple regression. The test for significance was done at 0.05 alpha levels.

Result

Research Questions: What is the influence of perimeter fencing on school security in secondary school in Cross River State?

The research question sought to find out the influence of perimeter fencing on school security in secondary school in Cross River State. In order to answer the research question, descriptive analysis was performed on the data collected as shown in Table 1.



Table 1: Descriptive statistics of the influence of perimeter fencing on school security in secondary school in Cross River State

Variables	N	Arithmetic Mean	Exp Mean	R	Remarks
School Security		14.96	12.79		Moderately Strong relationship
	250			0.74	
Perimeter Fencing		15.48	12.79		

Source: *Researchers' Field Survey*

The above table 1 presents the result of the descriptive analysis of the influence of perimeter fencing on school security in secondary school in Imo State. The two variables were observed to have moderately strong relationship at 74%. The arithmetic mean for school security (14.96) was observed to be greater than the expected mean score of 12.5. In addition to that, the arithmetic mean as regards perimeter fencing (15.48) was observed to be higher than the expected mean score of 12.5. The result therefore means that there is remarkable influence of perimeter fencing on school security in secondary school in Imo State.

Hypothesis

Ho1: There is no significant influence of perimeter fencing on school security in secondary school in Cross River State.

The null hypothesis states that there is significant influence of perimeter fencing on school security in secondary school in Cross River State. In order to test the hypothesis simple regression analysis was performed on the data, (see table 2).

Table 2: Simple Regression Analysis of the significant influence of perimeter fencing on school security in secondary school in Cross River State

Model	R	R-Sq	Adj R-Sq	Std. Error of the Estimate	R-Sq Change
1	0.74a	0.56	0.54	1.52	0.54

*Significant at 0.05 level; df= 248; N= 250; critical R-value = 0.138



The above table 2 shows that the calculated R-value (0.74) was greater than the critical R-value of 0.138 at 0.5 alpha levels with 248 degrees of freedom. The R-Square value of 0.54 predicts 54% influence of perimeter fencing on school security. This rate of percentage is highly positive and therefore means that there is significant influence of perimeter fencing on school security in secondary school in Cross River State.

It was also deemed necessary to find out the influence of the variance of each class of independent variable as responded by each respondent (see table 3).

Table 3: Analysis of variance of the significant influence of perimeter fencing on school security in secondary school in Cross River State

Model	SS	Df	MS	F	Sig.
Regression	944.28	1	944.28	416.08	.000b
Residual	682.62	248	2.28		
Total	1637.13	249			

a. Dependent Variable: School Security

b. Predictors: (Constant), Perimeter Fencing

The above table 3 presents the calculated F-value as (416.08) and the P-value as (.000b). Being that the P-value (.000b) is below the probability level of 0.05, the result therefore means that there is significant influence exerted by the independent variables i.e. perimeter fencing on the dependent variable which is school security. The result therefore was in agreement with the research findings of Jacksons fencing (2020), perimeter fencing is an important security and aesthetic feature of any school; it blocks intruders and other unwanted visitors from entering the site, helps keep staff and students safe on site and is one of the first things prospective students and parents see when visiting. The significance of the result caused the null hypotheses to be rejected while the alternative was accepted.

Conclusion

The study concluded that schools indicated different levels of safety, perimeter fencing and school security in the physical environments. In terms of school-based activities, schools that were observed displayed inadequate maintenance and surveillance systems. The physical environments of schools need more attention in terms of ensuring that the basic features of safety, perimeter fencing and security are put in place. In this way, schools would be in a position to engage in general safety,



and security in terms of school environments as entities comprising both physical and social aspects in perimeter fencing.

Recommendation

The study recommended that:

1. Schools should take care to priorities solutions appropriate to their site's specific risks and challenges
2. Perimeter fencing should include at least two points of entry, in case one is blocked during an emergency.
3. Schools should reflect on the contribution of perimeter fencing to these strategies when choosing among various options.
4. School administrators should take specific care related to “securing, perimeter fencing and limiting access to the school.
5. School administrators should ensure that the areas can be easily accessed by emergency vehicles.
6. Each secondary school especially rural schools, should be provided with one entrance so as to enable proper checks and regulation of who goes in and out of the school premises.

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CHAPTER 5

EFFECTS OF TEAM-BASED AND THINK-PAIR-SHARE LEARNING ON NERVOUS SYSTEM ACADEMIC PERFORMANCE OF SECONDARY SCHOOL BIOLOGY STUDENTS IN NIGER STATE, NIGERIA

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Abstract

This Study investigated the Effects of Team-Based and Think-Pair-Share learning on Nervous system academic performance of Secondary School Biology students in Niger state. The study had three objectives, three Research questions and three Null hypotheses. It adopted a combined Pretest Posttest, Non-equivalent groups' Quasi-Experimental design. From the population of 35,793 Public Secondary School two (SS2) students, 268 participants were sampled through multi-staged random sampling techniques. The study had one adapted test instruments two treatment instruments. Experts in Science Education preformed the tasks of face, construct and content validity of the instruments. The validated test instrument was then tested and retested during pilot-study using the same population and environmental conditions but outside the targeted participating samples while 0.78 reliability coefficient was obtained through PPMC and was administered as pretest and posttest to



the three groups by the help of Research Assistants. The data collected were analysed by mean, standard deviation, t-test and ANOVA statistics at $\alpha=0.05$. The major finding was that, Students taught Nervous System using Team-Based and Think-Pair-Share Learning performed significantly better than those taught using Lecture Method. This study concluded that the use of Team-Based and Think-Pair-Share Learning were more effective in teaching Nervous system and in improving Biology performance than lecture method among Secondary School Students in Niger State. Therefore, the study recommended that, Team-Based and Think-Pair-Share Learning be encouraged among Biology Teachers in teaching Nervous system and other Biology concepts in Niger State and Nigerian Secondary Schools.

Keywords: Team-Based learning, Think-Pair-Share learning, Academic performance, Nervous system, Lecture method

Introduction

Qualitative education is a key to the quality of life in the society. Qualitative education is that type in which each learner or graduate is skillful to develop himself and to contribute to the development of the society (Javed, Javed and Khan, 2016). The intimacy between Qualitative education and quality of life forms the Sustainable Development Goals one (1) to four (4). Science education is one of the branches of education that has immeasurable role to the transformational changes to man's quality of life and life styles ranging from stone-age through digital-life style and anticipatory space and artificial-intelligence-life style in this 21st century. Science education subjects at secondary education level in Nigeria includes Biology, Chemistry and Physics. Biology education in specific is very essential on man's life in terms of general Ecological management for healthy living and innovations of Biotechnology for economic development for improved quality of life (Abdullahi, 2022). Nervous System is one of those numerous secondary school biological concepts (NERDC, 2009) which Mandal (2017) had defined as a complex network of nerves cells that carry messages to and fro the Central Nervous System (Brain and Spinal cord) to and from other parts of the body of an animal. Nervous System knowledge is indispensable to man, because it controls all man's body life activities. Basically, successes of qualitative science education largely depend on appropriate selection and usage of instructional methods.

However, teaching of Biology in Nigerian Senior Secondary Schools are majorly still being carried out under the traditional methods (lectures method) which Shamsuddeen, and Hassan, (2016) referred to as passive learning methods or Teacher-Centered method, which to them are obsolete and ineffective in this science and Technology-Driven society. In the other development, *Njideka, and Agnes, (2022)*



had asserted that as a Science subject, Biology is best taught by doing, therefore Collaborative Method as one of the active and participatory instructional methods for successful delivery of Biology contents at secondary school level is recommended. Collaborative Method is a Student-Centered teaching method in which group of two or more students actively and mutually learn a topic together in both face-to-face classroom conversations and or online discussions forums at their pace (Laal, 2012). To him, Learners or Collaborators and teachers actively interact in sharing experiences, criticizing and evaluating one another's ideas under improved student-teacher relationship for deeper understanding of concreteness and abstractness of a specific topic. University of Maryland (2018) on its side, had listed some Collaborative learning methods as Team-Based and *Think-Pair-Share* Learning. Team-Based Learning entails all learners or collaborators are being giving academic tasks in advance. Subsequently evaluate each students' groups' level of understanding. Based on recorded scores, the teacher then deliver a corrective lecture to clear all identified misconceptions. Re-examine the learners by given them more evoking test or examination questions (Salami, 2017). While, in *Think-Pair-Share* method, *each learner in a group is encouraged to think critically and analyze a problem or question. Then in turn communicate responses to each other (pair) before summering their responses to the whole group* (Eze and Obiekwe, 2017).

In line with the above background, some existing related empirical studies were reviewed and reported on the effects of Team-Based Learning and Think-Pair-Share Instructional method on science subjects' academic performance. These include Ching-hsiang, *et al* (2014) and Salami, (2017) who had confirmed Team-Based Learning and Think-Pair-Share Instructional Strategy as one of the constructivists' teaching methods that is more effective in teaching Biology concepts than traditional methods. Usang, and Okoli (2021) *in Chemistry*; Nurul and Suratino (2021) in Biology; Uzoma and Okoli (2019) in Biology; Ali, Adamu, Kuta and Tukura (2020) in Biology who have found that Team-Based Learning and Think-Pair-Share Instructional Strategy of teaching was more effective than traditional methods in improving Biology achievements of the participated students.

Statement of the Problem

However, despite the studies and applications of various instructional methods by the Biology Educators to improve academic performance in biology because of the its importance, there are still reports of persisting Students' poor academic achievements in Biology among secondary school graduates by Niger State, as presented in Table 1.

**Table 1.** Niger State WAEC SSCE Biology results 2015-2020

Year	Registered Candidates	Credits (A,B,C)	%	Passes (D,E,)	%	Fails (F)	%	P + F (D,E,+F)	%
2015	3679	1032	28.05	1080	29.36	1567	42.59	2,647	72.01
2016	4093	1078	26.34	1692	41.34	1323	32.32	3,015	73.66
2017	2335	883	37.82	647	27.70	805	34.48	1,452	62.18
2018	1987	958	48.21	532	26.77	497	25.01	1,029	51.79
2019	1758	887	50.46	642	36.52	229	13.03	871	49.72
2020	2083	1032	49.54	511	24.53	540	25.92	1,051	50.46
Total	15,932	5,870	36.84	5,104	32.04	4,961	31.14	10,065	63.17

Source: Niger State Ministry of Education (MOE), Schools Service Exams Unit, Minna, 2021.

Table 1 indicated that the students with successes or high academic achievements (candidates with grades As, Bs, and Cs) which are admissible into universities persistently ranged from 26 to 50% while the number of students with low academic achievements (candidates with grades Ds & Es) plus the candidates with poor academic achievements (candidates with grade Fs) which are inadmissible into universities ranged from 49 to 73%. This level of poor performance in Biology is worrisome to the researcher. It is in response to this identified problem that this present study was designed, using the (Joyce & Weil in Jabareen's 2009) System-Approach-Conceptual framework under Lev Semenovich Vygotsky's Social Constructivism or Zone of Proximal Development (ZPD) learning theory (Burke 2011) to examine the efficacy of Team-Based Learning and Think-Pair-Share instructional types to improve Academic Performance in Learning Nervous System among Senior Secondary School Students in Niger State with the following objectives:

Objectives of the Study

To be guided through this study, the following research objectives were stated. To find out if there is any difference in:

1. Performance between Secondary School Biology Students taught Nervous System using Team-Based Learning and those taught using Lecture Method.
2. Performance between Secondary School Biology Students taught Nervous System using Think-Pair-Share Learning and those taught using Lecture Method.



3. Performance among Secondary School Biology Students taught Nervous System using Team-Based Learning, Think-Pair-Share Learning and Lecture Method.

Research Questions

From the research objectives, the following questions were raised. What is the difference in:

1. Performance between Secondary School Biology Students taught Nervous System using Team-Based Learning and those taught using Lecture Method?
2. Performance between Secondary School Biology Students taught Nervous System using Think-Pair-Share Learning and those taught using Lecture Method?
3. Performance among Secondary School Biology Students taught Nervous System using Team-Based Learning, Think-Pair-Share Learning and Lecture Method?

Null Hypotheses

From those Research Questions, the following Null hypotheses were postulated and tested at 05 level of significance, as: There is no significant difference in;

1. Performance between Secondary School Biology Students taught Nervous System using Team-Based Learning and those taught using Lecture Method.
2. Performance between Secondary School Biology Students taught Nervous System using Think-Pair-Share Learning and those taught using Lecture Method.
3. Performance among Secondary School Biology Students taught Nervous System using Team-Based Learning, Think-Pair-Share Learning and Lecture Method.

Methodology

This study used a combined pretest posttest Non-Equivalent groups Quasi-Experimental Design. The population was 35,793 Public Senior Secondary School II (SSII) males and females between 17- and 19-years for 2020/2021 academic session from the seven (7) Educational Zones of 25 Local Government areas, Niger State. 268 participants were sampled through three stages-multistage random sampling techniques as presented in Table 2.

**Table 2:** Summary of population and sample of the study

Educational Zones	Population per zone	Sampled Schools	M	F	Total per School
(1) Bida Zone	12982	GDSS,Lemu	51	37	88
(2) Minna Zone	18016	Gdss Tunga	63	48	111
(3) Kontagora Zone	4795	DSS Beri	45	24	69
Grand Total	35,793	3	159	109	268

Source: Niger State, Education Management Information System (EMIS) Unit, Department of Planning, Research and Statistics (PRS) (2021).

Two major adapted research instruments were used: (1) Test instrument named “Nervous System Academic Performance Test” (NSAPT). A 50-itemed Multiple-Choice academic performance test instrument. (2) Two treatment instruments; first was named Team-Based Learning Tool (TBLT) and second treatment instrument was named Think-Pair-Share Learning Tool (TSLT). Furthermore, the two instruments; test instrument and treatment instruments of this study were validated at face and construct levels by experts in science education. And the Researcher under the monitoring of those experts further carried out the Content Validity type of NSAPT using the table of specification (TOS) before pilot testing. Then, the test instrument was subjected to a trial test during pilot study before the real Study. The pilot study used the same population and environmental conditions with the real study but outside the target participating Samples. During the pilot study, to estimate the consistency level of this study’s test instrument, it was tested and retested in 2021 at the interval of three (3) weeks. Subsequently, the data generated, were analyzed by Pearson Product Moment Correlation Coefficient (PPMCC) reliability test using a software (Statistical Package for Social Science [SPSS]) version 20 and after the analysis, 0.78 reliability index was obtained.

After pilot test, the validated and reliable test instrument was administered to the three (3) research groups: Experimental I and II and Control Group by the Researcher and Research Assistant before the treatment as a Pretest to measure their Nervous System knowledge equivalence. And after the treatment, another NSAPT was re-administered to the three groups as Posttest to measure their Nervous System knowledge performance.

Analysis of Data

The Data collected from the two (2) Experimental Groups and a Control Group at Posttest level of the study were appropriately subjected to both descriptive (Mean [\bar{X}]



& Standard Deviation). and inferential (Independent sample t-test & Analysis of Variance [ANOVA]) statistical analyses using SPSS version 20.0 at 0.05 significance level. And results were presented in tables 3 – 9:

Research Question 1

What is the difference in Performance between Secondary School Biology Students taught Nervous System using Team-Based Learning and those taught using Lecture Method?

Table 3: Experimental Group I and Control Group performance means

Group	Variable	N	\bar{X}	\bar{X} difference	Standard deviation
Experimental Group I	Team-Based Learning	88	47.60	12.67	13.47
Control Group	Lecture Method	69	34.93		6.93

Source: Fieldwork, 2021

Table 3 revealed that Experimental Group I that was taught Nervous System using Team-Based Learning obtained a Mean of 47.60 and Standard Deviation of 13.47 while the Control Group that was taught Nervous System using Lecture method achieved the Mean and Standard Deviation of 34.93 and 6.93 respectively. Therefore, there is a significant Mean difference of 12.67 as shown in Table 3. And this level of significant Mean difference in performance would be confirmed statistically by testing its corresponding Null hypothesis by T-Test inferential outputs.

Research Question 2

What is the difference in Performance between Secondary School Biology Students taught Nervous System using Think-Pair-Share Learning and those taught using Lecture Method?

**Table 4:** Experimental Group II and Control Group performance means

Group	Variable	N	\bar{X}	\bar{X} difference	Standard deviation
Experimental Group II	Think-Pair-Share Learning	111	45.07	10.14	7.17
Control Group	Lecture Method	69	34.93		6.93

Source: Fieldwork, 2021

Table 4 revealed that Experimental Group II, which was taught Nervous System using Think-Pair-Share Learning, obtained a mean of 45.07 and a Standard Deviation of 7.17 while the Control Group which was taught Nervous System using Lecture Method achieved the mean and Standard Deviation of 34.93 and 6.93 respectively. Therefore, there is a significant Mean difference of 10.14 as shown in Table 4. And this level of significant Mean difference in performance would be confirmed statistically by testing its corresponding Null hypothesis by T-Test inferential outputs.

Research Question 3

What is the difference in Performance among Secondary School Biology Students taught Nervous System using Team-Based Learning, Think-Pair-Share Learning and Lecture Method?

Table 5: Experimental Group I, Experimental Group II and Control Group performance means

Group	Variable	N	\bar{X}	Standard Deviation
Experimental Group I	Team-Based Learning	88	47.60	13.47
Experimental Group II	Think-Pair-Share Learning	111	45.07	7.17
Control Group	Lecture method	69	34.93	6.93

Source: Fieldwork, 2021

Table 5 revealed that Experimental Group I that was taught Nervous System using Team-Based Learning obtained a mean of 47.60 and a Standard Deviation of 13.47, Experimental Group II that was taught using Think-Pair-Share Learning obtained a mean of 45.07 and Standard Deviation of 7.17 while the Control Group that was taught Nervous System using Lecture Method achieved the Mean and Standard deviation of



34.93 and 6.93 respectively as shown in Table 5. And this level of significant Mean difference in performance would be confirmed statistically by testing its corresponding Null hypothesis by F-Test inferential outputs.

Testing of Null Hypotheses

Null Hypotheses 1 and 2 were tested by independent samples t-test while Hypothesis 3 was tested by one way ANOVA Statistical Techniques as.

Null Hypothesis 1

There is no significant difference in Performance between Secondary School Biology Students taught Nervous System using Team-Based Learning and those taught using Lecture Method.

Table 6: Experimental Group I and Control Group performance t-test

Group	Variable	N	Mean	Df	t-value	P-value	Decision
Experimental Group I	Team-Based Learning	88	47.60	155	7.11	000	Significant
Control Group	Lecture Method	69	34.93				Rejected

Source: Fieldwork, 2021

@ $\alpha \leq 0.05$

This Table 6 reveals that the two-tailed T-Test result of 7.11 indicates statistically significant difference in Performance between the Experimental group I and Control group in Posttest. By the decision, since the P. value (0.000) was less than the alpha value (0.05), Hypothesis 1 is hereby rejected at ≤ 0.05 level of significance and with 155 degree of freedom as shown in Table 6.

Null Hypothesis 2

There is no significant difference in Performance between Secondary School Biology Students taught Nervous System using Think-Pair-Share Learning and those taught using Lecture Method.

**Table 7:** Experimental Group II and Control Group performance t-test

Group	Variable	N	Mean	Df	t-value	P-value	Decision
Experimental Group II	Think-Pair-Share Learning	111	45.07	178	9.34	000	Significant
Control Group	Lecture Method	69	34.93				Rejected

Source: Fieldwork, 2021

$\alpha \leq 0.05$

Table 7 reveals that the two-tailed T-Test result of 9.34 indicates statistically significant difference in Performance between the Experimental group II and Control group in Posttest. By the decision, since the P. value (0.000) is less than the alpha value (0.05), Hypothesis 2 is hereby rejected at ≤ 0.05 level of significance and with 178 degree of freedom as shown in Table 7.

Null Hypothesis 3

There is no significant difference in Performance among Secondary School Biology Students taught Nervous System using Team-Based Learning, Think-Pair-Share Learning and Lecture method

Table 8: Experimental groups I, II and Control group Performance One-Way ANOVA test

Variable	N	Mean	Df1	Df2	F-value	P-value	Decision
Team-Based Learning	88	47.60	2	265	36.53	0.00	Significant
Think-Pair-Share Learning	111	45.07					
Lecture method	69	34.93					Rejected

Source: Fieldwork, 2021

@ $\alpha \leq 0.05$

Table 8 reveals that the two-tailed F. test result of 36.53 indicates statistically significant difference in Performance among Experimental group I, Experimental group II and Control group. By the decision, since the P. value (0.00) is less than the alpha value (0.05), Hypothesis 4 is hereby rejected at 0.05 level of significance and with 2 and 265 degrees of freedom 1 and 2 (between groups and within group) respectively as shown in Table 8.



From Table 8, to identify the exact variables responsible for the observed statistically significant difference in Performance among the three (3) groups, Post Hoc (Duncan) test was calculated to find out its homogenous or heterogenous level as presented in table 9.

Table 9: Post Hoc (Duncan) test of hypothesis 3

Variables	Group	N	Subset for alpha = 0.05	
			1	2
Lecture Method Posttest	Control Group	69	34.93	
Think-Pair-Share Learning Posttest	Experimental Group II	111		45.07
Team-Based Learning Posttest	Experimental Group I	88		47.60
Sig.			1.00	0.087

Source: Fieldwork, 2021

Table 9 presented Post Hoc (Duncan) test of ANOVA. It showed that Lecture Method Posttest (Control Group) had a mean of 34.93, Think-Pair-Share Learning Posttest (Experimental Group II) had a mean of 45.07 and Team-Based Learning Posttest (Experimental Group I) had a mean of 47.60. With that, 2 homogenous subsets of means were identified as Control group formed the first subset while Experimental group II and I formed the second subset. Therefore, the Control group with the lowest mean of 34.93 and Experimental group I with the highest mean of 47.60 were responsible for statistically significant difference (12.67) in Performance among the three variables (groups) of hypothesis 3. This revealed that the three groups of hypothesis 3 were heterogeneous as shown in Table 9.

Summary of Findings

From the analyses of the study data, the following findings were drawn:

1. Students taught nervous system using Team-Based Learning performed significantly better than those taught using Lecture Method.
2. Students taught nervous system using Think-Pair-Share Learning performed significantly better than those taught using Lecture Method.
3. Students taught nervous system using Team-Based Learning and Think-Pair-Share Learning performed significantly better than those taught using Lecture Method.



Conclusion

From the findings of this study, it was concluded that the use of Team-Based Learning and Think-Pair-Share Learning were more effective in teaching Nervous system and in improving academic performance in Biology than lectures method in Niger State.

Recommendation

Based on the findings of this study, recommended the following:

1. Team-Based Learning and Think-Pair-Share Learning types) should be encouraged among Biology Teachers in teaching Nervous system and other Biology concepts in Niger State and Nigerian Secondary Schools to improve Students' academic performance.

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CHAPTER 6

PARADIGM SHIFT IN THE UNDERSTANDING OF MODERN SUPERVISION OF INSTRUCTION IN NIGERIAN SCHOOL: CREATING CONNECTIONS, BUILDING AND BRIDGES

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Abstract

The fundamental principles of organisation/institution for supervision of school in modern organization/institution is directed towards the improvement of the total teaching learning process which include the total setting rather than towards the more limited aim of improving teachers in service. Modern supervision of instruction directs attention toward the law of education and the betterment of learning. Teaching-learning situation is the focus of supervision with the groups and individuals working to improve the total complex. The instructor/teacher in this type of supervision becomes a cooperating member of a group dedicated to the improvement of instruction. This paper therefore examines the paradigm shift in the understanding of modern supervision of instruction in Nigerian schools. The paper highlights the meaning of supervision, modern supervision, supervision of instruction, history of supervision of instruction in Nigeria, functions of instructional supervision. The paper also went on to examines the purpose of supervision of instruction in Nigeria schools, techniques of supervision, challenges of supervision of instruction in Nigeria, recommendation and conclusion were also stated.

Keywords: *Supervision, Modern supervision, Supervision of instruction*



Introduction

The primary objective of educational institutions set up all over the country is to train and teach the students the need skills, societal norms and values in preparation for adulthood and membership of the larger society. There is need to supervise the type of instruction to be delivered in the classroom to make sure that the right instruction is delivered to the right people at the right time. Education is becoming more expensive day-to-day out. Parents are spending so much of their wards, education and government is also spending so much on the recurrent and capital items in our educational institutions. Hence the need to ensure that the financial provisions for the system by government, parent, and individuals are efficiently utilized and accounted for. A venture like this which is of such magnitude in terms of finance must be appropriately monitored and controlled to ensure that it achieve its stated objectives. The Nigerian government recognized the need to monitor not only the financial management of the tertiary institutions, but also the teaching of students. Educationists at the ministries of education both at the federal and the state levels have set up quality control divisions in their respective ministries to ensure that quality education is maintained. It has been established that quality and standard could be maintained in the educational institutions through regular inspection and continuous supervision of instruction in the schools. Supervision and inspection have been identified as very germane to the day-to-day activities of educational institutions in Nigeria. The supervisor assesses and record the performance of teachers, their ability and consistency in carrying out the classroom activities and keeping of high quality records. The activities of supervisors include inspecting, monitoring, rating, assisting, recommending etc. All these activities if carried out by professional supervisors are aimed at improving instructional delivery and quality of teaching in the educational institutions. However, not all the appointed supervisors by ministry of education (Federal and State levels) are trained, this accounts for the reasons why the quality of work of supervisors is very low. The main reason of setting up a school is to provide a link for both the teacher and the learner so that teaching and learning can take place. Nevertheless, teaching and learning can only take place effectively and efficiently if adequate system of modern supervision of instruction of the teaching and learning process is adequately established in our schools. The ultimate goal of modern supervision is to bring about improvements in the learning situation and the learner.

Concept of Supervision

Supervision is concept that emanated from the American tradition. It was a hand of assistance given to a professional colleague in the process of instructional delivery. Supervision seems to mean different things to different people. The head of institutions, lecturers, students and parents viewed it from the angle at which each



relates with the supervision. Supervision can be said to be a process, facilitated by a supervisor, through which the supervisor assists the school heads, teacher and the students, counsel each other, plan with each other and rub minds together on how to improve teaching and learning in the school (John, 2002). Supervision can also be said to be an interaction between at least two people for the improvement of an activity. School supervision is a process of bringing about improvement in instruction by working with people who are working with pupils or students. Supervision in school is a process and coordination of activities which is concerned with the teaching and improvement of the teaching in the school. Supervision does not mean an inquisition or fault finding, rather it means guidance, assistance, sharing of ideas to all those involved in the process of teaching and learning. It also means the facilitation or creation and continuous improvement of a conducive learning and teaching environment. The supervision is curriculum development, it is communication, it is leadership, and it is about helping the teachers, and the learners to realize their full potentials in their respective careers.

According to Ofoegbe (2004), supervision is a professional, continuous and cooperative exercise that covers all aspects of the life of a school. Hence, the instructional supervision covers sub-systems of the school and influences them. Ajayi (2001) opined that supervision is an assistance or hand of help given to a professional colleague, the teacher in the process of teaching. Mbiti (2018) defined supervision as one of the basic requirement of administration that concern itself with the tactics of efficiency and material resources. It is a way to advise, guide, improve and oversee teachers with the hope of seeking their cooperation in order that they may be successful in the task of teaching and classroom management. According to Ghiselli (2000), supervision involves directing the work of others, organising and integrating activities in order to ensure that the goals of the group are achieved. According to Vitales, supervision refers to the direct, immediate guidance and control of subordinates in the performance of their jobs. Thus, the activity of supervision is concerned with the direction, guidance, control and superintendence of the subordinates.

Meaning of modern supervision

Modern supervision have been described as a process which is concern with the improvement of instruction, it need to be strengthened at school level. Modern supervision is based upon certain principles and techniques through which teaching-learning process become more effective (Adam, 2005). The concept modern supervision is based on the assumption that education is a creative and co-operative enterprise in which as teachers, students, parents and administrators participate and supervisors are their academic leaders who stimulate, guide and advise them in improvement of the educational process. (Dickey, 2005).



Meaning of Supervision of Instruction

According to Anuna (2004), in modern day, we talk more of instructional supervision or supervision of instruction in our educational institutions. This concept; instructional supervision is focused on how to improve learning. The objective of supervision of instruction is to improve the overall teaching process and to ensure that effective educational services are rendered by the teachers and students. Supervision of instruction is carried out by those designated to do so. They are known by different names within and outside the school system; some are referred to as supervisors, superintendents, principals, vice-principals, head of department, deans, provost, rectors, vice-chancellors etc. Ajayi (2001) opined that supervision of instruction takes place in educational institution which is a social system with a number of interacting sub-systems. These sub-systems are the teaching sub-system, the school management sub-system, the counselling and co-curriculum sub-system etc. It can also be said that supervision of instruction is a professional, continuous and cooperative exercise that covers all the aspects of the life of a school.

Evolution of Supervision in Nigeria

The introduction of Western education in Nigeria could be back to 1842 when the missionaries established the first primary school in Badagry. At this time, the missionaries were responsible for supervising their own school by the use of administrative supervision approach prevalent at that time. During this approach, the catechist was also used as teacher by the missionaries while the layman in the church was used as supervisor or inspector of education. However, in 1882, government started to demonstrate commitment to the standard of education by appointing Red Metcalf Sunter as the Her Majesty inspector of schools of the West Africa. In 1889, Henry Carr, was appointed as the Local inspector of schools for Lagos Colony further confirmed governments concern for the quality of education in Nigeria. During the first quarter of the twentieth century, the inspectorate service got another boost with the appointment of a Director of education and three Zonal inspectorate of schools in order to improve the efficiency and effectiveness of school inspection. This development was influenced by the prevailing scientific management approach to supervision. The regionalisation of education by the Mcpherson Constitution of 1954 gave birth to the establishment of Western Region inspectorate service. The inspectorate was able to make considerable impact on the educational standards of the Western Region. In 1973, the federal government through the federal ministry of education established the federal inspectorate division within the ministry to supervise the quality of instructional delivery in schools. Since 1975, when the government took over the provision of education in Nigeria, the same government is also responsible for the supervisory function. The practice makes the government a judge on its own



case. The supervisors at this time being government agents were not taken serious because most of them were not professionally trained. Gradually, supervision of instruction became very weak and more ineffective and generally degenerated to its present state.

The Purpose of Supervision of Instruction

Wiles and John (2006), stated that the purpose of supervision of instruction is to ensure that the right instruction is passed to the students with the right method by the right people at the right time. This will influence the attainment of the major instructional and educational goals. Other reasons for carrying out supervision of instruction in schools (Wiles and John 2006) are as follows:

- i. assess and establish the performance of the teachers in the school;
- ii. provide specific assistance to teachers with deficient teaching methods;
- iii. discover teachers with special teaching skills and qualities in school;
- iv. ascertain and assess lecturers/teachers classroom management skills;
- v. provide level playground for teachers growth and development;
- vi. provide both knowledge and encouragement to young and inexperienced teachers;
- vii. provide teachers with professional magazines, journals or references that would enlighten, motivate and encourage them to be familiar with changes in the instructional delivery methodologies;
- viii. ensure the conformity of the dissenting teachers to the appropriate instructional delivery methods through directional leadership;
- ix. organise induction programme to new lecturers/teachers on various teaching methods available and make available other staff development programme that should serve as incentives to improve incompetent teachers; and
- x. assess the overall climate of the instruction available in the school and identify some of its most urgent needs.

Techniques of Supervision

There are various techniques of supervision. Before any strategy can be applied by the supervisor, the supervisor must respect the worth and dignity of the supervisee. Modern supervision is cooperative and is focused on the aims and objectives of education, instructional materials, method of teaching, staff and students and the entire school environment. It involves all those who are involved and engaged in the task of solving the problems in the school and improving instruction. Ani (2007). Stated that the following are the techniques of supervision:



i. Classroom and Observation Technique: This is a live systematic observation of a teacher at work. The supervisor visits the classroom in an actual situation and observes how the teacher teaches, manages and controls the students in the classroom. The supervisor that adopts this technique focuses on planning and preparation of the lesson, presentation of the lesson (teachers voice, speech and habit clarity, appropriateness of language). Teacher and students relationship, students participation in the lesson, appropriateness of the instructional aids and methods, classroom management, teachers personality and knowledge of the subject content.

ii. Inter-School/Teacher visitation Technique: This technique involves teacher(s) in a particular school visiting teacher(s) in another school and observing them while teaching. Inter-school teacher visitation can either be inter-class visitation or inter-school visitations. It is inter-class visitation when teacher(s) in the same school visit another teacher teaching in another class within the same school, and it is inter-school visitation when teacher(s) in one school visit another teacher in another school teacher in the class. This technique enhances interaction among teachers within and outside the school, it also assist the beginning teachers to learn class management. It also helps both the experienced and in-experienced teachers to plan effectively and make judicious use of available resources. It involves pre-visitation planning to bring about the desired results.

iii. Audio-Visual Technique: It involves use of sound recordings through video tape, computers, and media or film to present ideas to one or more listeners in such a way as to assist in the development of skills. Class activities are recorded and re-played too stimulate class discussion and improve teacher behaviour hence improvement in teaching and learning activities.

iv. Workshop Technique: This technique involves organizing various workshops, seminars, conferences with intention of rubbing minds together on current and other issues that could lead to improvement in teaching and learning condition in the school. It affords teachers the opportunity to exchange ideas, foster good spirit and relationship among professional colleagues and acquaint them with the new and special problems that they might be confronted with in the school.

v. Guided Practice Technique: Peretomode (2020) referred to the technique as the type that is sometimes associated with inter-visitation and observation. The technique stresses actual doing with the needed support rather than mere talking independently.

vi. Micro-Teaching Technique: This is adopted when a teacher is teaching a group of people less than the normal classroom population with time that is equally less than 40 minutes for a period. This method gives room for immediate feedback because of the small size of the group it also allows supervisors and teachers to identify, describe,



define etc. teaching skills without the risk of teaching the actual class and also with a period of that is less than 40 minutes.

Concept of Instructional Activities

Instructional activities are small, routine, segments of instruction that specify how the teacher and students will participate and how they will interact with materials and content. These short lessons serve dual purposes; they are designed to both engage students in rich content work as well as provide teachers scaffolder engagement with the practices and principles of ambitious teaching. By structuring the interaction between teacher and students around content instructional activities limit the range of interactions, materials, and content that a novice must manage, rather than the full range that classroom teaching demands. This provides novice teachers an entry point into the practices of the profession in real setting and allows them to learn from teaching.

Challenges of Supervision of Instruction in Nigeria

Supervision of instruction is a vital tool in enhancing the standard and maintaining quality in Nigerian tertiary institutions. According to Hubert (2005), a lot of problems hinder supervision of instruction which are as follows:

- i. Policy Instability:** Frequent change in educational policy without adequate knowledge of the supervisors which often leads to confusion or uncertainty. The supervisors are not carried along when policies affecting education are to be changed or amended e.g. abolition and re-introduction of private universities, change of school calendar etc.
- ii. Lack of relevant supervisory competencies:** Supervisors of education in Nigeria are deficient in relevant supervisory skills because there is no pre-professional or pre-practice training for the supervisors. School heads need to be trained in order to acquire the relevant skill for performing the supervisory functions.
- iii. The dearth of qualified and trained personnel:** most of the personnel used as supervisors of instructions in must states in Nigeria do not have the pre-requisites lecturers/teachers qualification and experience.
- iv. Inadequate funds for supervision of instruction:** funding has been a major challenge facing not only supervision of instruction but also education in general the availability if inspectorate unit in the ministry of education is to carry out the enormous task given to them. It is becoming increasingly impossible for inspectorate



unit of education ministry to service and repair vehicles needed for supervision exercises and even to pay duty tour allowance (DTA) of supervisors where need be.

v. Low lecturers/teachers morale: School supervisors, school heads and the supervisees do not receive corresponding or much incentive to enable them to be totally committed to their jobs. The general belief by Nigerians is that teaching profession is of low esteem. More than half of the teachers on the job are bidding their time to get alternative employment and opt out of teaching because they are dissatisfied with the job. It is difficult for such a teacher with the mind-set that teaching is a stepping stone to be totally committed negative influence on their teaching, thereby making supervisor work more tedious.

vi. Styles of supervision adopted by supervisors: Some supervisors still adopt autocratic, fault- finding styles of inspection. This makes the school head and lecturers/teachers become apprehensive. This set of supervisors always assumes mastery of the subjects and expect the lecturers/teachers to be subservient to them. They assume that supervisors have the knowledge and regard the lecturers/teachers as inferior workers who should take instruction from them without questioning.

Conclusion

The need for supervision is pertinent to the growth and development of Nigerian tertiary institution. This is the main reason why Nigerian government should pay more attention to supervision and inspection. The challenges of supervision on the morale of its agents should be seriously addressed. The supervisors should benefit from regular in-service training in form of workshops, seminars, conferences, and other relevant short and long term courses that would expose the supervisors to increased effectiveness and efficiency in supervision exercise. Supervision and inspection are vital tools in enhancing the standard and maintaining quality in Nigerian tertiary institutions.

Recommendations

The following recommendations are made:

- i. Supervisors should be carried along when policies affecting education are to be changed or amended.
- ii. Pre-professional/pre-practice training for supervisor of education should be done to school heads in order to acquire the relevant skill for performing the supervisory functions.



- iii. Supervisors of instructions should have the pre-requisites lecturers/teachers qualification and experience.
- iv. Adequate funds should be given for supervision of instruction
- v. The morale of school supervisors should be boosted by given them incentive to enable them to be totally committed to their jobs

Supervisors should adopt the modern styles of supervision. They should not adopt autocratic, fault-finding styles of inspection.

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CHAPTER 7

EFFECTIVENESS OF DIGITAL INTEGRATION IN NIGERIAN EDUCATIONAL SYSTEM: A STUDY OF SELECTED TERTIARY INSTITUTIONS IN KOGI STATE

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Abstract

Digital integration through the use of ICT is meant to assist both lecturers and students in achieving the global mandate to replace conventional lecture techniques with technology-based lecturing and learning environments. ICT, which is seen as one of the key components in moving the country into future growth, is currently underused in Nigeria, with Kogi State being no exception. This led to the study's analysis of lecturers' opinions of how well ICT integration supports teaching and learning in the classroom. On the basis of purposive sample approach, a survey questionnaire was distributed at random to 150 lecturers across three (3) selected tertiary institutions in Kogi State, Nigeria. With the use of the SPSS statistical analysis software, the study analysed the primary data using both descriptive and inferential statistics. The findings showed that the use of ICT in the classroom effectively motivates students to interact with one another more and gives them the confidence to engage fully. The reason why ICT is effective is because it keeps students informed enough to feel comfortable expressing and exchanging ideas with their peers and the instructor. Additionally, it was shown that ICT use aids in expanding students' conceptual frameworks. This is because students may interact and exchange ideas with the lecturers and their peers as well as incorporate their existing knowledge into the current educational systems. Therefore, it was suggested that considerable thought should be given to



integrating ICT in the classroom in order to improve the proficiency of the nation's educational system.

Keywords: *Digital integration, National policy, Information Technology, Technology effectiveness, Tertiary institutions*

Introduction

The Nigerian educational system has witnessed significant changes in recent years with the adoption of digital technologies in teaching and learning processes. The rapid increase in technology use in the educational system has brought about a significant transformation in the way education is delivered and received (Adegoke and Adegbola, 2018). Digital integration has been identified as an essential component of educational reform that can improve the quality of education and increase access to learning opportunities (Adeyemo and Yusuf, 2020). Digital integration in tertiary institutions provides students with access to various digital tools and technologies, which enhances their learning experience. For instance, online learning platforms, educational software, and digital libraries enable students to learn at their own pace and in a more interactive and engaging way (Obi and Ezeuduji, 2020).

Also, digital integration improves the efficiency of administrative processes, such as registration, grading, and record-keeping, which saves time and reduces paperwork (Okon, 2019). Through digital integration, tertiary institutions can connect with other institutions and experts around the world, providing students with access to a global community of scholars, which is essential for a well-rounded education (Oguntimehin, 2019). Digital integration today helps bridge the digital divide by providing students from low-income backgrounds with access to digital resources, which they may not have been able to afford otherwise (Okebukola, 2019). More so, digital integration provides students with skills that are increasingly demanded by employers, such as proficiency in digital tools, critical thinking, and problem-solving, thus making them more employable (Ojo and Ojo, 2020).

The integration of digital technologies in Nigerian educational system has been on the rise in recent years. However, there is a lack of empirical research on the effectiveness of these technologies in achieving educational goals, specifically in selected tertiary institutions in Kogi State. This study aims to address this gap by evaluating the effectiveness of digital integration in Nigerian educational system, specifically in selected tertiary institutions in Kogi State. The findings of this study will provide valuable insights into the effectiveness of digital integration in Nigerian educational system, specifically in Kogi State. The study will also contribute to the body of knowledge on the use of digital technologies in education and inform policy decisions on the integration of digital technologies in the Nigerian educational system.



Literature Review

Conceptually, digital integration refers to the process of incorporating digital technology and tools into various aspects of an organization or system, in order to improve its efficiency, productivity, and effectiveness (Ukaegbu, Mordi and Adomi, 2021). In the context of education, digital integration involves the use of various digital tools and technologies, such as computers, tablets, smartphones, learning management systems, and educational software, to enhance the teaching and learning process (Okon, 2019). Digital integration in education seeks to create a seamless and interactive learning experience for students, as well as to improve the efficiency and effectiveness of educational institutions (Olakulehin and Adeoye, 2019). On the other hand, an educational system refers to the overall structure and organization of an institution or network of institutions that provide formal education to individuals. This can include primary, secondary, and tertiary educational institutions such as schools, colleges, and universities. An educational system also encompasses the policies, procedures, and regulations that govern the operation and management of these institutions, as well as the curriculum and teaching methods used to impart knowledge and skills to students (Yusuf, 2020). The goals of an educational system can vary depending on the cultural, social, and economic context, but generally include providing individuals with the knowledge and skills necessary to succeed in society and the workforce (Ukaegbu, Mordi and Adomi, 2021).

A review of existing empirical literature on the subject reveals that the adoption of digital technologies in Nigerian educational system has been on the rise in recent years. However, there is a lack of empirical research on the effectiveness of these technologies in achieving educational goals, specifically in Nigerian tertiary institutions.

One study conducted by Adegoke and Adegbola (2018) examined the impact of digital integration on students' academic performance in Nigerian universities. The study found that digital integration had a positive impact on students' academic performance, particularly in science and technology-related courses. The study recommended the need for increased investment in digital infrastructure, training for lecturers, and integration of technology-based learning resources to enhance students' learning outcomes.

Another study by Olakulehin and Adeoye (2019) investigated the challenges and opportunities of e-learning implementation in Nigerian higher education institutions. The study found that inadequate infrastructure, inadequate training of teachers, and lack of adequate support from management were some of the major challenges hindering the effective implementation of e-learning in Nigerian higher education institutions. The study recommended the need for adequate investment in infrastructure, adequate training of teachers, and the need for management to provide adequate support for e-learning implementation.



Furthermore, a study by Ukaegbu et al. (2021) evaluated the effectiveness of the use of learning management systems (LMS) in Nigerian tertiary institutions. The study found that the use of LMS had a positive impact on students' engagement, and lecturers' teaching effectiveness. The study also revealed that the major challenges hindering the effective use of LMS in Nigerian tertiary institutions were inadequate funding, inadequate technical support, and inadequate training of lecturers.

Ojo and Ojo (2020) evaluated the effectiveness of digital technology in teaching and learning in Nigerian tertiary institutions. The researchers collected data from students and teachers in three different institutions using questionnaires and interviews. The findings showed that the use of digital technology significantly improved teaching and learning outcomes, particularly in terms of student engagement and motivation. Also, Yusuf (2020) using mixed-method study aimed to explore the effectiveness of digital technology integration in Nigerian higher education. The researcher collected data from both quantitative and qualitative sources, including questionnaires, interviews, and focus groups. The findings showed that while digital technology integration has the potential to enhance teaching and learning, challenges such as inadequate infrastructure and limited access to technology still exist.

Obi and Ezeuduji (2020) investigated the effectiveness of digital technology in enhancing teaching and learning in Nigerian universities. The researchers collected data from students and teachers using questionnaires and analyzed the results using statistical methods. The findings showed that the use of digital technology had a positive impact on teaching and learning outcomes, particularly in terms of student engagement and motivation. Similarly, Adeyemo and Yusuf (2020) assessed the impact of digital technology on students' academic performance in Nigerian universities. The researchers collected data from students using questionnaires and analyzed the results using statistical methods. The findings showed that the use of digital technology had a significant positive impact on students' academic performance, particularly in terms of critical thinking skills and problem-solving abilities.

Okebukola (2019) examined digital technology and education in Nigeria: Challenges and prospects. This study highlights the challenges facing the integration of digital technology in Nigerian education and provides recommendations for improvement. The author notes that limited infrastructure, lack of funding, and inadequate training of teachers are some of the major challenges facing the integration of digital technology in Nigerian education. Also, Okon (2019) examined digital education in Nigeria: exploring the possibilities and prospects. The author argues that the integration of digital technology in Nigerian education can improve access to education, enhance the quality of education, and promote innovation in the education sector. The author, however, notes that there are significant challenges that must be addressed, including the need for infrastructure development and teacher training.



Similarly, Oguntimehin (2019) examined the impact of digital technology on teaching and learning in Nigerian universities. The author notes that the integration of digital technology in Nigerian universities has improved the quality of education and enhanced students' engagement and participation. The study also identifies challenges such as inadequate infrastructure, poor funding, and inadequate training of teachers that affect the effective integration of digital technology in Nigerian universities.

Methodology

A descriptive survey research design was used to collect data on the current state of digital integration in three (3) selected tertiary institutions in Kogi State. A purposive sampling technique will be used to select three (3) tertiary institutions in Kogi State. The sample comprised 150 lecturers from the three (3) selected tertiary institutions. The data was collected using a self-administered questionnaire for lecturers. The questionnaire was designed to gather information on lecturers' access to digital tools and their perceptions of the effectiveness of digital integration in aiding teaching and learning. The collected data was analysed using descriptive statistics, such as frequency tables, mean scores and pie chart. Ethical considerations were observed by obtaining informed consent from all participants, ensuring anonymity and confidentiality, and obtaining necessary approvals from the ethical review board. The study's limitations included limited access to certain digital tools and technologies due to the institutions' limited resources and limited generalisation due to the small sample size.

Data Analysis and Findings

Given that a total of 150 copies of questionnaires were administered and 150 copies of the questionnaire were all completed and returned to the researcher, the data was analyzed based on these returned questionnaires.

Table 1: Questionnaire administration and return rate

Questionnaires administered	Total number returned	Percentage (%)
150	150	100.0%

Source: Field Survey, 2023

Table 1 revealed that a total of 150 copies of questionnaires were administered to the respondents and a total of 150 copies of the questionnaire were returned representing 100% returns.



Figure 1: Pie Chart showing questionnaire response rate

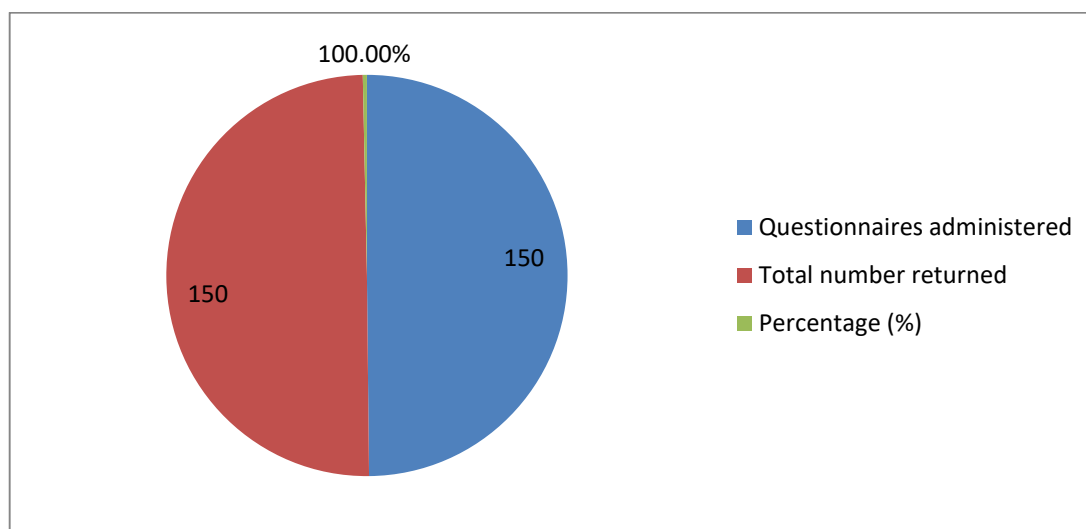


Table 2: Uses of ICT through digital integration in Nigerian educational system in tertiary institutions in Kogi State

Likert Scale: Strongly Agree (5), Agree (4), Undecided (3), Strongly Disagree (2), Disagree (1)

S/N	Uses	5	4	3	2	1	Total	Mean	Remark
1	it motivates students to interact with one another more and gives them the confidence to engage fully	55 36.7%	35 23.3%	25 16.7%	15 10.0%	10 6.7%	150	3.5	Accepted
2	Through the use of ICT because of the advent of digital integration, students can use search engines, online databases, and educational websites to find information and complete research projects. Also, online collaboration tools, such as Google Docs, allow students to work together on projects, even if they	65 43.3%	30 20.0%	25 16.7%	20 13.3%	10 6.7%	150	3.8	Accepted



	are not in the same physical location.								
3	Through learning management systems, ICT can be used to track student progress and provide feedback.	55 36.7%	25 16.7%	15 10.0%	25 16.7%	10 6.7%	150	3.2	Accepted
4	It keeps students informed enough to feel comfortable expressing and exchanging ideas with their peers and the instructor	50 33.3%	46 30.7%	24 16.0%	20 13.3%	10 6.7%	150	3.7	Accepted

Source: Researcher's computation, 2023

The study using mean analysis of descriptive statistics makes the following decision rule. The decision criterion employed was to accept any statement with mean score of 3.0 and above and reject those with less than 3.0 based on the Likert scale of 1 to 5. For this reason, since the mean scores of all the items in Table 2 are all greater than 3.0, it therefore implied their acceptance. Thus, this means that the uses of ICT through digital integration in Nigerian educational system in tertiary institutions in Kogi State includes; it motivates students to interact with one another more and gives them the confidence to engage fully. Through the use of ICT because of the advent of digital integration, students can use search engines, online databases, and educational websites to find information and complete research projects. Also, online collaboration tools, such as Google Docs, allow students to work together on projects, even if they are not in the same physical location. Through learning management systems, ICT can be used to track student progress and provide feedback. It keeps students informed enough to feel comfortable expressing and exchanging ideas with their peers and the instructor.

Table 3: Reasons for the effectiveness of ICT through digital integration in Nigerian educational system in tertiary institutions in Kogi State

Likert Scale: Strongly Agree (5), Agree (4), Undecided (3), Strongly Disagree (2), Disagree (1)

S/N	Reasons	5	4	3	2	1	Total	Mean	Remark
1	Increases Engagement: ICT can make learning more engaging and interactive	55 36.7%	35 23.3%	25 16.7	15 10.0%	10 6.7%	150	3.5	Accepted



	for students. It offers a variety of multimedia resources, such as videos, images, and interactive simulations that can capture students' attention and encourage active participation.								
2	Enhances Collaboration: ICT tools allow students to collaborate with their peers and teachers in real-time, regardless of their physical location. Collaborative projects and online discussions can help students develop communication and teamwork skills.	65 43.3%	30 20.0%	25 16.7%	20 13.3%	10 6.7%	150	3.8	Accepted
3	Provides Access to a Wide Range of Resources: The internet provides access to a vast array of educational resources that can be used to supplement classroom instruction. ICT tools allow students to access information and learning materials from around the world.	55 36.7%	25 16.7%	15 10.0%	25 16.7%	10 6.7%	150	3.2	Accepted
4	Supports Assessment and Feedback: ICT tools can be used to assess student learning and provide feedback in real-time. Digital assessments can provide immediate feedback to students, allowing them to adjust their approach and improve their understanding. Teachers can also use ICT to monitor student progress and identify areas where additional support is needed.	50 33.3%	46 30.7%	24 16.0%	20 13.3%	10 6.7%	150	3.7	Accepted

Source: Researcher's computation, 2023

The study using mean analysis of descriptive statistics makes the following decision rule. The decision criterion employed was to accept any statement with mean score of 3.0 and above and reject those with less than 3.0 based on the Likert scale of 1 to 5.



For this reason, since the mean scores of all the items in Table 3 are all greater than 3.0, it therefore implied their acceptance. Thus, this means that the reasons for the effectiveness of ICT through digital integration in Nigerian educational system in tertiary institutions in Kogi State includes; increases engagement: ICT can make learning more engaging and interactive for students. It offers a variety of multimedia resources, such as videos, images, and interactive simulations that can capture students' attention and encourage active participation. Enhances Collaboration: ICT tools allow students to collaborate with their peers and teachers in real-time, regardless of their physical location. Collaborative projects and online discussions can help students develop communication and teamwork skills. Provides Access to a Wide Range of Resources: The internet provides access to a vast array of educational resources that can be used to supplement classroom instruction. ICT tools allow students to access information and learning materials from around the world. Supports Assessment and Feedback: ICT tools can be used to assess student learning and provide feedback in real-time. Digital assessments can provide immediate feedback to students, allowing them to adjust their approach and improve their understanding. Lecturers can also use ICT to monitor student progress and identify areas where additional support is needed.

Table 4: Challenges of ICT through digital integration in Nigerian educational system in tertiary institutions in Kogi State

Likert Scale: Strongly Agree (5), Agree (4), Undecided (3), Strongly Disagree (2), Disagree (1)

S/N	Challenges	5	4	3	2	1	Total	Mean	Remark
1	Limited Infrastructure: One of the major challenges facing ICT in the Nigerian education system is the lack of adequate infrastructure, such as reliable power supply, internet connectivity, and computer hardware. This can limit access to technology and hinder effective implementation of ICT tools.	65 43.3%	30 20.0%	25 16.7%	20 13.3%	10 6.7%	150	3.8	Accepted
2	Inadequate Training: Another challenge is the lack of adequate training for teachers and students on how to effectively use ICT tools for teaching and	55 36.7%	25 16.7%	15 10.0%	25 16.7%	10 6.7%	150	3.2	Accepted



	learning. This can limit the potential benefits of ICT in the classroom.								
3	Insufficient Funding: There is often insufficient funding for ICT initiatives in Nigerian schools, which can limit access to technology and hinder the implementation of effective ICT programs.	55 36.7%	35 23.3%	25 16.7	15 10.0%	10 6.7%	150	3.5	Accepted
4	Resistance to Change: Resistance to change and the adoption of new technology can be a significant challenge in Nigerian schools. Teachers and students may be resistant to using new technology, or there may be cultural or social barriers to the adoption of ICT tools.	50 33.3%	46 30.7%	24 16.0%	20 13.3%	10 6.7%	150	3.7	Accepted

Source: Researcher's computation, 2023

The study using mean analysis of descriptive statistics makes the following decision rule. The decision criterion employed was to accept any statement with mean score of 3.0 and above and reject those with less than 3.0 based on the Likert scale of 1 to 5. For this reason, since the mean scores of all the items in Table 4 are all greater than 3.0, it therefore implied their acceptance. Thus, this means that the challenges of ICT through digital integration in Nigerian educational system in tertiary institutions in Kogi State includes; limited infrastructure: One of the major challenges facing ICT in the Nigerian education system is the lack of adequate infrastructure, such as reliable power supply, internet connectivity, and computer hardware. This can limit access to technology and hinder effective implementation of ICT tools. Inadequate Training: Another challenge is the lack of adequate training for teachers and students on how to effectively use ICT tools for teaching and learning. This can limit the potential benefits of ICT in the classroom. Insufficient Funding: There is often insufficient funding for ICT initiatives in Nigerian schools, which can limit access to technology and hinder the implementation of effective ICT programs. Resistance to Change: Resistance to change and the adoption of new technology can be a significant challenge in Nigerian schools. Teachers and students may be resistant to using new technology, or there may be cultural or social barriers to the adoption of ICT tools.



Conclusion

Digital integration through ICT can enhance teaching and learning by providing access to a wide range of resources, personalized learning experiences, increased collaboration, and improved assessment and feedback. Additionally, digital integration can help to bridge the digital divide and increase access to educational opportunities for students in rural or remote areas. To fully realize the potential benefits of ICT integration in the Nigerian educational system, there is a need for significant investment in infrastructure, lecturers' training, content development, and policy and regulatory frameworks. Additionally, there needs to be a strong emphasis on the relevance and cultural appropriateness of digital content and tools, as well as an understanding of the specific challenges facing different tertiary institutions in Kogi State, Nigeria.

Recommendations

The following policy recommendations were made based on the findings.

- i. **Invest in Infrastructure:** There is a need for investment in ICT infrastructure, such as reliable power supply, internet connectivity, and computer hardware. This will help to create an enabling environment for the integration of ICT in education in Kogi State.
- ii. **Increase lecturer training:** lecturer and academic staff in tertiary institutions need to be provided with professional development opportunities to enhance their skills and knowledge of ICT tools and their applications in the classroom. This will help them to effectively integrate ICT into teaching and learning.
- iii. **Develop Relevant Digital Content:** Relevant and appropriate digital content needs to be developed and made available to tertiary institutions in Kogi State. This content should be tailored to the local curriculum and context and should be accessible on various platforms and devices.
- iv. **Encourage Collaboration:** Collaboration between different tertiary institutions in Kogi State, as well as between the government, private sector, and non-governmental organizations, can help to enhance the integration of ICT in education. This collaboration can help to secure funding and resources, as well as provide expertise and support for lecturers and students.
- v. **Monitor and Evaluate:** There is a need for monitoring and evaluation of the effectiveness of ICT integration in Nigerian tertiary institutions. This will help to identify challenges, measure progress, and inform future policy and practice. Additionally, feedback from students and staff can help to identify areas of improvement and ensure that ICT integration is meeting their needs and expectations.



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CHAPTER 8

EFFECT OF DIGITAL STORYTELLING ON PUPILS' ACHIEVEMENT IN ENGLISH LANGUAGE VOCABULARY DEVELOPMENT IN PRIVATE PRIMARY SCHOOLS, ONDO STATE, NIGERIA

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Abstract

In Nigeria, particularly in Ondo State; teachers face enormous challenges in disseminating vocabulary content to the pupils in a friendly and engaging manner. Pupils need full knowledge of various words to interact positively, efficiently and effectively with their environment, as well as to excel in their academic pursuits. Digital storytelling could, therefore, go a long way in helping pupils learn through technology by using digital media tools to positively engage learners in word-learning activities.

Story-based Activity theory and Media Richness theory provided the framework for the study, while the pretest- posttest, control group, quasi-experimental design with factorial matrix of 2x2x1 was used for the study. Four schools from Akure South and North were purposefully selected. Intact classes of the primary two school pupils were used. A total number of one hundred and ninety pupils participated in the study. Two major instruments were used, namely: Digital storytelling package and English language vocabulary development achievement test ($r = 0.73$). Data were subjected to analysis of covariance (ANCOVA), Estimated Marginal Means (EMM) and Bonferroni post-hoc test at 0.05 level of significance.

There was a significant main effect of treatment on ELVD ($F_{(2, 291)} = 83.53$; $p < 0.05$, partial $\eta^2 = 0.38$). The result also revealed that pupils in the Digital Storytelling Strategy (DSS) treatment group 1 had highest adjusted mean score in their post-ELVDAT (80.45) while their counterparts in the Conventional Strategy (CS) control group had (56.29). The post-ELVDAT mean score of participants in the Digital Storytelling Strategy was



significantly different from those exposed to the Conventional Strategy this is because the significant difference observed in the ANCOVA result was due to the difference between the treatment group (digital storytelling strategy and conventional method). There was no significant main effect of gender on ELVD ($F_{(1, 292)} = 1.72$; $p > 0.05$, partial $\eta^2 = 0.01$). There was no significant interaction effect of treatment and gender on ELVDAT ($F_{(4, 289)} = 0.62$ $p > 0.05$, partial $\eta^2 = 0.01$). This indicates that treatment and gender had no effect on ELVDAT.

It is noteworthy to employ digital storytelling in teaching English language vocabulary development in our primary schools in order to improve their academic performance as well as their communication skills and teaching methodology.

Keywords: Digital storytelling, English language, vocabulary development, private primary schools

Introduction

The art of vocabulary development in English language is very crucial in any human field of knowledge. There is no field of knowledge in the world without their own vocabularies. For any man to succeed in their various professions, they must put conscious effort to learn their disciplines' vocabularies in order to be groomed and communicate effectively in their field of knowledge/profession. In Nigerian schools today, English language has been made one of the compulsory subjects, in which school pupils must pass before any elevation in their academic advancement. Therefore, English language vocabulary refers to the collection of words that a person knows and uses. It also refers to all the words that make up a language.

In developing English language vocabulary in children, adults could stay one step ahead of children in their development. This could also be done through modeling of words and phrases that are slightly beyond the child's level, daily conversation with children through their daily routines, reading children's literature especially books with pictures, and so on are great ways of developing vocabulary in children. On contrary, parents, teachers, and other stakeholders were not involved in the development of English language vocabulary among children, due to ignorance of the fact that English language vocabulary development should start as early as possible in children for a solid foundation in the language as well as their academic pursuit in life.

Above all, the art of English language vocabulary development is very crucial in the development of Nigerian pupils as well as important to any human field of knowledge because it is the 'lingua Franca' that is, an official language in Nigeria. There is no field of knowledge in the world that you would not need a considerable



amount of vocabulary for one to succeed. Hence, vocabulary is the sole trade of any discipline. A substantial amount of any discipline's vocabulary should be stored in one's memory before such an individual could communicate effectively and efficiently. In Nigerian schools, English language has been made one of the compulsory subjects. Pupils must pass before advancement in their academic pursuits. However, English language has become traumatic for many school pupils because they fear it and this has led to the majority of the pupils failing English language. Hence, pupils' achievement in English language has constituted a concern for the government and all stakeholders of primary education in Nigeria.

The Nigerian government has put in place some measures to improve primary school pupils' English language vocabulary development. These measures include, eradication of extreme poverty and hunger from primary schools, achieving universal primary education, promoting gender equality and manpower for women by encouraging girl-child education across the country, donating free books to pupils, employing more teachers across the country, training and retraining of teachers, providing good infrastructures in schools, daily meals to pupils and education marshals across the country to curb pupils that stray away from schools during school hours and also those that refuse to register in schools, were encouraged from house to house across states in Nigeria. Despite all these measures, little was achieved because teachers lack ICT knowledge and they still teach through the conventional method, Sunday (2014). Teachers have failed to incorporate educational media tools such as television, projectors, electric boards, and computers, among others into teaching process. Learning Resources; such as flashcards, alphabet drilling, and music, were not also incorporated into the teaching and learning process, therefore, teaching and learning become gloomier for pupils. The conventional mode of teaching, without the incorporation of modern technology and learning resources activities, causes the pupils to lose focus, be discouraged, and be uninterested in learning English language. In due of this, the study engaged the use of digital storytelling learning tool to teach English vocabulary development in private primary school in Ondo State, Nigeria.

It has been observed in the literature that if relevant educational media were used in the teaching of the English language vocabulary development at the basic level, it could encourage active learning, enhance creativity, and improve pupils' attitudes and confidence in the subject. Educational media is a different medium to communicate with people to modify their behaviour. There are two types of educational media, print, such as books, magazines, and newspapers, among others, and electronic media, such as radio, television, projector, internet, cinema, films, cartoon/animation, digitised books, e-books, and the rest. The role of educational media in the learning process is very crucial to the academic performance of pupils. Educational media informs, educates, entertains, and persuades pupils more responsibly if properly used for teaching and learning. Also, using educational media will cause pupils to be eager to learn, highly inquisitive, to be more engaged with their



studies (Shubhda, 2020; Buckingham, 2018; Stephanie, 2013). Hence, there might be a remarkable achievement as the researcher is introducing two modes of teaching and learning instructional resources, viz digital and written fantasy storytellings.

To this end, the improvement of poor English language vocabulary development among boys and girls in private primary schools was the concern of this study. Therefore, the study engaged using digital and written fantasy storytellings as media resources to teach English language vocabulary development among primary school pupils in Ondo State, Nigeria.

Digital in this study is the provision of displayed or recorded information in numerical digits from an automatic device, such as a television, projector or computer, or any other electronic device. Hence, digital storytelling learning resource, is, therefore, a conversion of a fantasy storybook, titled "Mother Horse" into an animation/cartoon form of media; which was used as a learning resource to overcome seamless obstacles against productivity in Nigerian schools' classrooms. This material is then combined with various types of multimedia, including computer-based graphics, recorded audio, computer-generated text, and video clips so that it can be played on a computer or plasma TV, or burned on a compact disk (CD). Digital storytelling learning resource is an effective instructional tool for efficient teaching and learning delivery in schools and colleges in developed countries, (Robin, 2021; Demirer, 2013). These media resources have given pupils in developed countries an edge in their academic pursuit, compared to the pupils in Nigeria and other neighbouring countries; who have borrowed English as an official language (Robin, 2021). Therefore, if this learning resource is properly used and annexed into the primary school system, there could be better performance and assimilation of English language vocabulary among pupils in Nigerian schools.

Digital storytelling as defined by Demirer (2013) is a concept that uses multimedia tools to bring narratives to life. Digital stories can be used to explain a concept, reflect on a personal experience, retell a historical event, or make an argument. Digital stories are typically videos that combined audio, images, and video clips to tell a story. Even though it was recommended that Digital fantasy storytelling should not be more than 2 to 3 minutes long, a lot of work goes into making one. Digital fantasy storytelling is versatile and can cover a wide variety of topics. The storyline of any digital story must be determined before the creation of a script and a storyboard. Therefore, the script or storyboard will reflect what type of digital stories to be made. In this study, the researcher converted a fantasy storybook, 'Mother Horse' into digitised form (video) as a learning resource. Images and characters from the storybook were created, and voiceover, music, and sound effect were also added to make a perfect video. The final product was used in classroom teaching.

Moreover, the Centre for Arts-Inspired Learning (2018) defines Digital fantasy storytelling as a personal narrative, created from images and put into a video with music and one's voice. They can range from your own experience to how you



view the world and community. The Centre also stressed further that Digital fantasy storytelling is a fun way to get one's voice heard and to share how one feels with the rest of the world. It is worth knowing that pupils of developed countries such as Europe, America, Canada, and the rest have been creating and using digital stories to do their various assignments on different subjects. Digital storytelling is not new to them. Teachers are used to using Digital storytelling to teach difficult subjects to simplify such subjects to pupils, unlike in Nigeria where teachers and students are yet to use Digital fantasy storytelling in their mode of teaching and learning process Akpojotor (2013). It is on this note that the researcher wants to engage selected private primary schools, which have been used to the conventional mode of teaching; in the teaching and learning process, to now adapt the digitised and written fantasy storybook to learn English language vocabulary development.

Gender is either of the two sexes – male or female, especially when considering social and cultural differences rather than biological ones. Gender would be used to know the difference between boys' and girls' learning of the English language and their academic performance. Therefore, the knowledge of boys and girls would be tested to group them into high, medium, and low-performance levels. Gender in language education has been a field of critical interdisciplinary inquiry. Over the past few decades, there has been a steadily growing body of research on gender and language education (Rowlett and King, 2017; Glowka, 2014; Ellis, 2012). There was enough evidence in research studies globally that girls achieved significantly better results in language achievement tests than boys. Such results support the socio-linguistic finding that female students outperform males as they are more open to new linguistic forms in the target language and eradicate interlanguage forms that deviate from target-language norms more readily than their male counterparts (Rowlett and King 2017; Glowka, 2014; Vlachos and Papadimitriou, 2015; Ibrahim, 2013 and Ellis, 2012).

Statement of the Problem

Poor vocabulary development is prevalent among primary school pupils in Nigeria, particularly in Ondo State. A lot of factors have been attributed to this; such as: language interference, lack of digital literacy, poor reading habit and culture, poor foundation of elementary and formative years of pupils, inadequate motivation to read, poor method of teaching, inadequate standards in many primary schools in Nigeria and fear of English language as a subject. Studies have reiterated the fact that pupils with poor vocabulary development are not able to keep up with their peers in every sphere of life, and the gap among the peers increases gradually. This is attributed to the English Language teachers in primary schools who are still engaged in conventional method of teaching (Chalk and talk method) and not using digital instructional media to make learning more engaging and interesting.



In the developed countries, lots have been done to help students and primary school pupils to develop their vocabulary and make learning of English language easy and more interesting. Some instructional media have been used to support teaching of English language in schools; such as, using of video games, smart-cards, group-play and some other devices in their classrooms. Therefore, making learning to be more interactive and not a “one-way” show unlike the conventional teaching. Thus, a lot have been achieved through these methods of teaching and students’ vocabulary have been developed; also, a ripple effect occurred in their academic performance. In developing countries like Nigeria, very few researches have been done, schools are still using the conventional method to teach English, nothing to inspire the students; hence, there is little or nothing to achieve in the development of English vocabulary. The teaching of English vocabulary in primary schools needs to integrate ample instructional strategy, such as, storytelling and retelling of stories, electronic/ICT devices in order to help primary school pupils to develop various skills needed for the development of English language vocabulary.

In recognition of poor vocabulary development among primary school pupils and its ripple effects on their academic performance, there is a strong need for a more effective strategy that could actively engage and arouse the interest of pupils in Ondo State, Nigeria; in learning and using new words in the English Language. This study, therefore, was carried out to investigate primary school pupils’ ability to learn vocabulary development through Digital storytelling. Digital storytelling, therefore, could be a viable instructional strategy to fill the gap lost in teaching and learning of English vocabulary in our primary schools. This study was conducted to determine the effects of digital storytelling on pupils’ English language vocabulary development, with gender as the moderator variables.

Objectives of the Study

The main objective of this study is to investigate the effect of digital storytelling on primary school pupils’ vocabulary development in English Language. The specific objectives are to determine the:

- i. main effect of treatment (digital storytelling) on primary school pupils’ vocabulary development in English Language in Ondo State, Nigeria;
- ii. main effect of gender on English Language vocabulary development among primary school pupils in Ondo State, Nigeria; and
- iii. interaction effect of treatment (digital storytelling) and gender on English language vocabulary development among primary school pupils in Ondo State, Nigeria.



Hypotheses

The following null hypotheses was tested at 0.05 level of significance:

1. There is no significant main effect of treatment (digital storytelling) on primary school pupils' English Language vocabulary development in Ondo State, Nigeria.
2. There is no significant main effect of gender on primary school pupils' English language vocabulary development in Ondo State, Nigeria.
3. There is no significant interaction effect of treatment (digital storytelling) and gender on primary school pupils' English language vocabulary development in Ondo State, Nigeria.

Literature Review

Teaching English to children in primary schools has been a global issue all over the world because English is included in part of the school curriculum (Pinter and Zandian, 2015; Widodo, 2016), and most parents encourage their children to learn English at an early age because of the commonly-held belief that 'earlier means better.' Many attempts (e.g., task-based language teaching) have been introduced to enhance the quality of teaching English to children around the globe, but most of the English Language Teaching (ELT) practices in primary schools, center on rote learning, memorization and drilling (vocabulary and grammar exercises) as reported by Hawanti (2014); Hardman and A-Rahman, (2014); Chai, Vail, and Ayres (2014), and Widodo (2016). Children are still viewed as language knowledge transmitters, but in fact, they are active meaning makers. In this digital era, children have a vast amount of experience in meaning making digitally with their playmates, peers, and even with adults through social media, such as Facebook, Instagram, blogs, and WhatsApp. This implies that children are active digital technology users. With this in mind, the use of digital stories for teaching English to children can be a gradation learning platform for children to learn English differently.

One of the widely recognised languages in the world is the English Language. The importance attached to English language in Nigeria education system, made it unavoidably compulsory in all subjects of human disciplines. Vocabulary is one of the vital contents of the English Language syllabus in the Nigerian educational system. It aims at encouraging learners to learn, acquire and appropriately spell and pronounce word correctly and deeper understanding of words of the English Language etc. This act of using English language in virtually all the subjects in Nigeria primary school shows the maximum priority given to English language. In as much as vocabulary is being considered important in Nigerian educational system, it has been discovered that pupils in the primary school, both public and private, which is



supposed to provide foundational vocabulary knowledge are lagging behind and do not realise the penalties of their ignorance about vocabulary development in English Language. Therefore, government has made it mandatory for primary school pupils to develop English language vocabulary from the cradle, so that they will be able to meet up with the challenging world.

Despite the fact that Nigeria government has done so much to simplify the leaning of English language vocabulary development among primary school pupils, English vocabulary development learning has been problematic to primary school pupils due to a number of factors: poor foundation and method of teaching, lack of motivation to learn the language, lack of experience and confidence among teachers in the teaching and learning of English language vocabulary, interference of English language into Nigeria educational system, degeneration in the reading culture and lack of exposure of Nigerian pupils to English vocabulary development during their formative years. All these were the identified problems faced by Nigerian primary school pupils in learning English language. Thus, it is eminent to motivate Nigeria pupils with Digital storytelling instructional strategy in teaching and learning process in order to boost their morale and interest in learning English Language.

Digital storytelling is the practice of using computer-based tools to tell stories. As with traditional storytelling, most digital stories focus on a specific topic and contain a particular point of view, Bernard (2020). However, as the name implies, digital stories usually contain some mixture of computer-based images, text, recorded audio narration, video clips and/or music. Digital stories can vary in length, but most of the stories used in education typically last between two and ten minutes. The topics that are used in digital storytelling range from personal tales to the recounting of historical events, from exploring life in one's own community to the search for life in other corners of the universe, and literally, everything in between.

The extant research on the use of digital stories in primary schools (Jones and Chapman, 2017) suggested that children are active meaning makers as they engage in a digital storytelling (DST). Generally, in a primary school context, there is a severe shortage of trained primary school teachers of English as reported in previous studies (Copland, Garton, and Burns, 2014). Digital storytelling incorporation into primary school curriculum encourages children to gain multidimensional experience in meaning making that involves the use of pupil's first or native language and English. From a psychological viewpoint, DST could build pupils' self-confidence in speaking English through digital stories because they could record and edit their oral performance. Repeated oral performance allows pupils to listen to their *own voices and reflect on their own speaking performance*.

Psomos and Kordaki (2015) explained digital storytelling as integrating the ancient art of oral storytelling with an array of technical tools to present personal tales with images, graphics, music, and sound, including the storyteller's voice. This definition resembles that of Smeda, Dakich and Sharda (2014) who reported that



digital storytelling helps students to develop their creativity to solve important problems in innovative ways. It is an effective pedagogical tool that enhances learners' motivation, and provides learners with a learning environment conducive for story construction through collaboration, reflection and interpersonal communication. A digital story can be viewed as a merger between traditional storytelling and the use of multimedia technology. Digital storytelling is used as an embodiment of multimedia production for education purposes. Therefore, this is becoming a part of our lives, and is on the threshold of becoming an important part of teaching and learning as well. The power of storytelling as a pedagogical tool has been recognised since the beginning of humanity, and in more recent times, for e-Learning. Digital storytelling harnesses the power of audiovisuals to engage students' visual and auditory senses in ways that printed textbooks can never accomplish. LoBello, (2015) reported that digital storytelling has the power to not only improve student motivation towards writing, but also improve student self-perception, creativity, and overall writing performance. In this regard, the study employed the effect of digital storytelling in teaching English language vocabulary development among primary school pupils in Ondo State, Nigeria.

Methodology

The project adopted a pretest - posttest, control group, quasi-experimental design with factorial matrix of 2 x 2, that is, treatment at two levels; one experimental and a control group. The population of the study comprises primary two pupils in selected four private schools in Ondo state. Primary two pupils were used for the study because children develop their vocabulary at a very tender age of between two and eight years, and this class fall within this range. Purposive sampling technique was used to select four old generation private primary schools from Akure South and North were used for the study. In Akure South, the two selected were: Bishop Hughes Memorial Catholic Nursery and Primary School, Oke-Ijebu, Akure and St. Louis Nursery and Primary School, Isinkan were used for Experimental group, (Digital storytelling package) and the two schools selected from Akure North were: Omolere Nursery and Primary School, Ijapo Estate and Hepzibah Nursery and Primary School, Igoba were used for the control group (Conventional Method). A total number of one hundred and ninety (190) pupils participated in the study. Two instruments were used in the study, namely: - Digital Storytelling Package and English language vocabulary development achievement test. The data collected were analysed using Analysis of Covariance (ANCOVA), Estimated Marginal Means (EMM) and Bonferroni post-hoc at 0.05 level of significance. The treatment lasted for six weeks.



Results and Discussion

H₀₁: There is no significant main effect of treatment on ELVD

Table 1: Analysis of Covariance (ANCOVA) of Post-ELVDAT by treatment and gender

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	36081.765	18	2004.542	17.283	.000	.532
Intercept	22988.479	1	22988.479	198.207	.000	.420
PreELVDAT	2626.194	1	2626.194	22.643	.000	.076
Treatment	19375.759	2	9687.879	83.529	.000	.379
Gender	199.353	1	199.353	1.719	.191	.006
Error	31779.177	274	115.982			
Total	1522805.000	293				
Corrected Total	67860.942	292				

R Squared = 0.53 (Adjusted R Squared = 0.50) * denotes significant p<0.05

Table 1 reveals that there was a significant main effect of treatment on ELVDAT ($F_{(2, 291)} = 83.53$; $p < 0.05$, partial $\eta^2 = 0.38$). Table 4.1 indicates that the effect was 38.0%. This implies that 38.0% of the total 50.0% (Adjusted $R^2 = 0.50$) variation in post-ELVDAT scores in this model was as a result of the significant main effect of the treatment. Therefore, hypothesis 1 was rejected. In order to explore the magnitude of the significant main effect across treatment groups, the estimated marginal means of the treatment groups were carried out and the result is presented in Table 2.

Table 2: Estimated Marginal Means for Post-Achievement by treatment and control group

Treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Digital Storytelling Strategy (DSS)	80.45	1.34	77.81	83.08
Conventional Strategy (CS)	56.29	1.32	53.69	58.89



Table 2 revealed that participants in the Digital Storytelling Strategy (DSS) treatment group 1 had highest adjusted mean score in their post-ELVD (80.45) and their counterparts in the Conventional Strategy (CS) control group (56.29). This order is represented $DSS > CS$. To determine which of the groups caused this significant main effect of treatment on ELVD, the Bonferroni post-hoc test was carried out across the groups, while the result is presented in Table 3.

Table 3: Bonferroni Post-hoc Analysis of Post-ELVD by Treatment and Control Group

(I) Treatment	(J) Treatment	Mean Difference (I-J)	Sig.
Digital Storytelling Strategy (DSS)	Conventional Strategy (CS)	24.159*	.000
Conventional Strategy (CS)	Digital Storytelling Strategy (DSS)	-24.159*	.000

* Denotes significant $p < 0.05$

Table 3 indicates that the post-ELVDAT mean score of participants in the Digital Storytelling Strategy was significantly different from those exposed to the Conventional Strategy. This indicated that the significant difference observed in the ANCOVA result was due to the difference between the treatment (digital storytelling strategies) and the control group as post-ELVDAT scores is concerned.

H₀₂: There is no significant main effect of gender on ELVD

Table 1 shows that there was no significant main effect of gender on ELVD ($F_{(1, 292)} = 1.72$; $p > 0.05$, partial $\eta^2 = 0.01$). Therefore, hypothesis 2 was not rejected. This implies that gender had no effect on participants ELVDAT.

H₀₃: There is no significant interaction effect of treatment and gender on ELVDAT

Table 1 indicates that there was no significant interaction effect of treatment and gender on ELVDAT ($F_{(2, 291)} = 0.18$; $p > 0.05$, partial $\eta^2 = 0.0$). Hence, hypothesis 3 was rejected. This means that treatment and gender had no effect on ELVDAT.



Discussion of the Findings

The study revealed that there was a significant main effect of treatment on students' achievement in English language vocabulary development (ELVDAT). The results also indicated that the effect was 38.0%, which implies that 38.0% of the total 50.0% variation in post-ELVDAT scores in this model was as a result of the significant main effect of the treatment. The study showed the magnitude of the significant of main effect of treatment and revealed that participants in the Digital Storytelling Strategy (DSS) had highest adjusted mean score in their posttest of English language vocabulary development achievement test (post-ELVDAT) (80.45) followed by their counterparts in the Conventional Strategy (CS) control group (56.29).

The posttest of English language vocabulary development achievement test (post-ELVDAT) mean score of participants in the Digital Storytelling Strategy was significantly different from those exposed to the Conventional Strategy. This indicates that the significant difference observed in the ANCOVA result was due to the difference between the treatment (digital storytelling strategies) and the control group as post-ELVDAT scores is concerned. In this regards, digital storytelling improved pupils' academic performance and English language vocabulary development. It also fostered collaborative learning, create enthusiasm and creativity in learning process among pupils in primary schools. This finding supported Grant and Bolin (2016) who revealed that digital storytelling improved cultural and the development of entrepreneurial competencies, such as, proactivity, autonomy and creativity. It also boosted collaborative learning by facilitating problem solving through mutual help between pupils and teachers' support.

The study also attested to the fact that what you see and hear cannot evaporate quickly from one's mind. Watching and listening to story of mother horse have created a picture in the mind and memory of pupils and thus, caused a great amount of vocabulary retention in the memory of pupils. The outcome of this study supported Zi-Gang (2015) who investigated whether the retention of target words can be enhanced by the usage of Storytelling. His results showed that storytelling approach have more facilitating effect on the long-term vocabulary retention. He also submitted that storytelling approach, most especially digital storytelling, increases not only short-term vocabulary, but also long-term retention. The finding revealed that using digital storytelling as a method of teaching, prolonged the listening lifespan of pupils, most especially ages 6-8 years that the researcher interacted with in the course of this study. They were all willing and ready to extend the minimum time (between 40 to 60 minutes) that was scheduled. Most times, we would have exceeded the time limit, but the pupils would still be willing to continue. This implied that digital storytelling is a good method of teaching, not only English language vocabulary development but other primary school subjects. More so, the digital storytelling is a motivational tool for teaching English language vocabulary. The study is corroborated with that of



Valentini, Ricketts, Pye, and Houston-Price (2018) that children enjoy listening and reading stories because it represents an ideal introduction to foreign language, as their context is often familiar to children. Therefore, the finding revealed that digital storytelling as a strategy of teaching enhanced pupils' English language vocabulary development. Many other studies focused on the role of storytelling on vocabulary retention or on the development language skills. Studies also seem to support the idea that storytelling is effective motivating tool in English foreign language teaching (EFL); moreover, it also enhances children's productive and receptive skills. All above mentioned studies indicated that storytelling is very useful teaching tool. Subsequently, they showed that storytelling helps young learners to improve language skills, (Valentini et. al, 2018; Zi-Gang Ge 2015 and Ansarin and Khojasteh, 2013).

This finding corroborated Jones and Chapman (2017); Copland, Garton, and Burns (2014) in their extant researches on the use of digital stories in primary school curriculum, encourages children to gain multidimensional experience in meaning making that involves the use of pupils' first or native language and English. From a psychological point of view, digital storytelling could build pupils' self-confidence in speaking English through digital stories because they could record and edit their oral performance. Repeated oral performance/retelling of story allows pupils to listen to their own voices and reflect on their own speaking performance. The result of this study also supported Smeda, Dakich and Sharda (2014) who reported that digital storytelling helped students to develop their creativity, an effective pedagogical tool that enhances learners' motivation, and provides learners with a learning environment conducive for story construction through collaboration, reflection and interpersonal communication. The study has observed that integrating visual images with written text both enhances and accelerates pupils' comprehension.

The main effect of gender on English language vocabulary development achievement test (ELVDAT) was inconsequential. The study showed that there was no significant main effect of gender on ELVDAT. This implies that gender had no effect on participants in the treatment (Digital storytelling Strategies). This study negated the studies of Wen, (2016) who revealed that boys are better at language understanding and verbal reasoning and that there were no huge gender differences in the knowledge of vocabulary, but females tend to be better at spelling and grammar." Research have also shown that men do better than women in visuospatial abilities, whereas women do better than men in verbal abilities. Also, Izzaty and Setiawati (2019) pointed out much of the perceived female superiority in language capability, due to the added effort which adults tend to lavish on baby girls compared to baby boys, this also negated the findings of this research.



Summary of the Findings

1. There was a significant main effect of treatment on students' achievement in English language vocabulary development achievement test (ELVDAT). Digital storytelling strategy (DSS) had the highest mean score followed by conventional strategy (CS).
2. There was no significant main effect of gender on pupils' achievement in English language vocabulary development achievement test.
3. There was no significant interaction effect of treatment and gender on pupils' achievement in English language vocabulary development on pupils' achievement test (ELVDAT).

Conclusion

The study examined the effect of digital storytelling on English language vocabulary development among private primary school in Ondo State. The study used gender as the moderating variable. Three null hypotheses were tested at 0.05 level of significance were used to guide the study. Media richness theory and story-based activity theory were the theoretical framework for this study. The study adopted pretest-posttest, control group quasi experimental design using 2x2 factorial matrix. Four private primary schools were purposeful selected from Akure South and North local governments. The four schools were randomly allocated to each group; two in each group. The instrument used in this study were digital storytelling package and English language vocabulary development achievement test (ELVDAT). Treatment lasted for six weeks.

The digital storytelling instructional strategy enhanced primary school pupils' English language vocabulary development, created word retention, creativity, enthusiasm in learning, fostering collaborative learning among primary school pupils. Also, there was no significant interaction effect of treatment and gender on pupils' achievement in English language vocabulary development achievement test (ELVDAT). Hence, digital storytelling is an effective instructional strategy for teaching English language vocabulary development among primary schools in Nigeria.

Recommendations

The following were proffered:

1. Digital storytelling should be adopted as an instructional strategy in primary schools for effective and efficient instructional process.



2. Subjects in primary schools should be digitalised in a story form, in order to give room for pupils' deeper understanding of the subject; as well as enable pupils to retain much of what has been taught and recall quickly later when the need arises.
3. Primary school teachers should also engage more in activities-based learning. This is more effective and efficient in arousing pupils' interest in learning. The use of alphabet drilling and flash-card activities are more dynamic for teaching and learning English vocabulary or any other subject's vocabulary.
4. Government of each state should also upgrade conventional method of teaching to a more effective and efficient methodology, like digitalising books, talking books, using modern digital gadgets (projectors, laptops, educational videos, e-books etc.) to supplement teaching and learning.
5. Since today's pupils are digital natives, teachers should be trained and retrained about modern methodology of teaching and learning among primary school teachers, so that they could keep abreast of time and meet the dire needs of these pupils.

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CHAPTER 9

EFFECT OF DIGITAL ENVIRONMENTAL FACTOR AS PREDICTORS OF CITIZENS' PARTICIPATION IN DEVELOPMENT ACTIVITIES IN OGBOMOSO TOWN, OYO STATE, NIGERIA

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Abstract

The involvement of citizens in developmental endeavors is crucial to achieving rapid and enduring progress. However, the social context often displays varying attitudes that impact community participation. Despite numerous studies on citizen engagement, there is a shortage of research on how different environmental factors influence involvement in community development. This study, investigated the environmental factors that could predict citizens' participation in developmental activities in Ogbomoso, Oyo State. The descriptive survey research design was adopted. The simple random sampling was used to select 100 respondents from the community of Ogbomoso North Local Government. The data was analysed using the descriptive statistics of percentage, frequency count and inferential statistics of multiple regression. Environmental factors (leadership impact and involvement in community groups) jointly influenced citizens' participation in development activities ($R = 0.46, p < 0.05$). These factors accounted for 0.20% of the total variance in citizens' participation in development activities. The relative contribution of the variables is as follows; Leadership impact ($\beta = 0.36; t = 3.59; p < 0.05$) and Involvement in community groups ($\beta = 0.17; t = -1.68; p > 0.05$). The result showed that citizens participate in development activities irrespective of their involvement in community groups and leadership greatly influences citizens' participation in developmental activities. Since leadership determines peoples' participation in community development projects, it is recommended that community leaders should be exemplary in discharging their duties and also visualise projects that are need-based.



Keywords: *Environmental factor, Citizens' participation, Development project*

Introduction

The active involvement of citizens is an essential prerequisite for development. The idea of people participating in their own development has gained momentum as a means of promoting human empowerment and progress. Development experts have been advocating for citizen participation in development projects, believing that these projects cannot achieve their objectives without meaningful involvement of the people. Mensah (2014) argues that citizen participation in development projects may lead to effective social change, rather than imposing external cultures on societies.

In recent times, the concept of participation has become a crucial ingredient in development. The belief is that integrating local people will effectively mobilize available resources, energy, wisdom, and creativity for development purposes. Empowered communities that solve their own problems function better than communities that depend on external services. Community members are crucial to democratic decision-making because participation allows individuals to impact and affect political, social, economic, and public decisions. Community members who wish to have a say in decisions that affect their lives actively shape participation. It is also seen as an evolutionary process where beneficiaries actively participate in shaping and carrying out development projects rather than just being passive recipients of their benefits (Bamberger in Samah and Aref, 2009).

Community empowerment is an element of community engagement, which is a cyclical and cumulative process (Samah and Aref, 2009). Community development projects must involve rural residents in decision-making, implementation, and execution. If they participated in these programs, the needed support would be provided. According to Ega and Ejembi in Ochepeo 2016, the majority of rural communities in rural Nigeria face substantial issues with regard to poverty, sickness, illiteracy, conflict resolution, environmental degradation, and other natural calamities. Rural residents frequently wait for outside assistance and are unaware of the importance of their knowledge and abilities in bringing about social change and resolving local issues. Therefore, social mobilization is needed to encourage and empower communities to participate in development programs actively.

In Ochepeo (2016), Ega and Ejembi proposed a method for community involvement in development that entails consulting with rural residents to incorporate their knowledge and expertise into initiatives to promote development, allowing them to contribute resources to the success of development programs. According to Persson and Liljestrom (2014), including communities in a project's planning and management increases its chances of success while fostering sustainability and a feeling of community. The term "citizen participation," often referred to as "public participation"



or "public involvement," has become increasingly common in western culture over the past thirty years as a result of the humanist movement's "people first" values. Participation emphasizes community members' total control, with less government imposition, emphasising self-help and democracy, as claimed by Anyanwu, cited by Adekola and Oyebamiji (2008). Involvement of beneficiaries in planning, executing, and evaluating government and NGO-initiated programs is crucial for their sustainability, and participation requires more than informing communities about interventions without their input. Abiona and Osu (2020) suggest that environmental awareness is also crucial in understanding people's willingness to participate in communal projects, and understanding public perception of community development requires insight into the environmental factors involved and their potential influence on participation.

Akpunne (2011) highlighted that environmental factors can greatly influence people's perception and willingness to participate actively in projects that will bring significant development to the community. Different environmental factors can cause people to react differently towards such programs. For example, in rural communities, there may be a common assumption that community development projects are solely the responsibility of the people due to government negligence. This mindset may lead to low or no participation in community development efforts.

Despite the importance of public participation and increasing interest from community members, citizen participation in government-initiated programs has been limited. This can be attributed to two broad factors: institutional and local/individual factors. Institutional-based factors refer to barriers caused by the government, such as inadequate consultation with professional bodies, lack of transparency, and late preparation of programs. Individual-based factors refer to barriers from community members, such as cultural, socio-economic, and environmental factors. These barriers impede citizens from participating, and institutional-based factors exacerbate the individual-based barriers by reducing citizens' interest to participate and limiting access to information, thereby compromising the effectiveness of community development programs (Chado, Bohar, and Zayyanu, 2016).

Eniayejuni and Evcan (2015) noted that citizen participation goes beyond merely participating in the electoral process. It involves citizens participating in planning, budget monitoring, and decision-making processes that directly affect their daily lives. Citizen participation in developmental activities is not just being a beneficiary of a project but shaping government policies, which is crucial for the effectiveness of government and achieving sustainable development.

Anyanwu, as cited by Oyebamiji and Adekola (2008), emphasised that designing and implementing projects for people is not enough; the success of such projects lies with the protective values of the projects. The involvement of the people in the design and implementation of a project leads to its durability and sustainability.



However, levels of involvement can vary although this is dependent on the need of the project and resources, goal setting, execution, utilization, and impact assessment.

The word environment originated from the French word "Environ" meaning "surroundings". It includes abiotic elements like light, air, water, and soil as well as biotic elements like people, plants, animals, and microorganisms. According to Kalavathy, 2004 cited in Haque and Talukder, 2021, the environment is a complex system that includes people and other living things in addition to water, air, land, and their interactions. It is made up of variously connected physical, chemical, biological, social, and cultural components.

The social aspect of the environment refers to the norms, standards, and community structures that shape the individual's adjustment. In contrast to primitive societies, modern societies have complex social systems that require greater adjustment from their members. The social and ecological systems are intertwined and function as a complex adaptive system.

One of the challenges faced by governments and communities is the low participation of individuals in development efforts, despite the positive results associated with participation. Demographic factors like sex, education, and socioeconomic standing have previously been associated to participation. Sociological research by Osborne (2009) revealed that middle-class families were more likely to engage in community organisations than lower-class families because they have access to resources that foster engagement.

Environmental factors play a critical role in community participation, requiring strategic planning, resource allocation, time, and commitment. Involvement in community development activities, according to Samah and Aref (2009), entails starting, choosing, planning, carrying out, controlling development processes and activities, as well as satisfying group needs and expectations to address shared development difficulties.

Over the years, community-driven development strategies have been used to varied degrees of success. Initiatives for community development are considered participatory when they address community issues and incorporate community perspectives (Schafft and Greenwood, 2003). Without community engagement, development processes and projects are unlikely to be successful. It is a core principle and tenet of people-driven development. Intrinsic, extrinsic, catalytic, and militating factors all influence beneficiary community participation in development objectives.



Objectives of the Study

The main objective of the study is to examine environmental factor as predictors of citizen's participation in developmental activities in Ogbomoso town, Oyo State. Specifically, the study will:

- i. determine the joint contribution of leadership impact and membership of community groups on citizens' participation in developmental activities.
- ii. determine the relative contribution of leadership impact and membership of community groups on citizens' participation in developmental activities.
- iii. explain which of the independent variables that contribute most to citizens' participation in developmental activities.

Research Questions

The following three research questions were raised to guide the conduct of the study:

- i. What is the joint contribution of leadership impact and membership of community groups on citizens' participation in developmental activities?
- ii. What is the relative contribution of leadership impact and membership of community groups on citizen's participation in developmental activities?
- iii. Which of the independent variables contribute most to citizens' participation in developmental activities?

Methodology

The descriptive survey research design was used for the study. This research design was chosen because it is mainly concerned with finding, describing and interpreting what is, without manipulation of variables of interest. The independent variables were studied and measured in retrospect for their possible influence on the dependent variable.

The target population of this study comprised all community members living in Ogbomoso town in Oyo state. The simple random sampling technique was used for this study. The ballot method of the simple random technique was used and Ogbomoso North Local Government was selected out of the five local government in Ogbomoso. One hundred participants were selected from Ogbomoso North Local Government.

The data for the study was collected through two sets of structured questionnaire; they are Citizen's Participation Questionnaire and Environment



Factors Questionnaire. The questionnaires focused on questions relating to citizen's participation in community development programmes and issues related to social environment vis-à-vis participation in development programmes. The reliability of citizen's participation questionnaire and environmental factors questionnaire was tested using the Cronbach alpha reliability technique these yielded a reliability coefficient of 0.83 and 0.70 respectively.

Data were analysed using descriptive statistics and multiple regression analysis.

Result of Research Questions

Research Question 1: What is the joint contribution of environmental factors on citizens' participation in developmental activities?

Table 1: Showing the joint contribution of environmental factors on citizens' participation in developmental activities

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	251.933	2	125.967	13.147	.000 ^b
	Residual	929.427	97	9.582		
	Total	1181.360	99			
R = 0.462 R ² = 0.213 Adj R ² = 0.197						

a. Dependent Variable: Citizens' Participation

b. Predictors: (Constant), Involvement in Community groups, Leadership Impact

Table 1 shows that there is a joint contribution between environmental factors on citizens' participation in developmental activities (0.46). This led to the fact that the independent variables accounted for 0.20% of the total variance in citizens' participation in developmental activities (Adjusted R² = 0.197). This joint contribution is shown to be significant ($F_{(2, 97)} = 13.15$; $p < 0.05$).

Research Question 2: What is the relative contribution of environmental factors on citizens' participation in developmental activities?



Table 2: Showing the relative contribution of environmental factors on citizens' participation in developmental activities

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	22.443	2.118		10.596	.000
	Leadership impact	.307	.086	.361	3.594	.001
	Involvement in community groups	.216	.128	.169	1.684	.095

a. Dependent Variable: Citizens' participation

Table 2 shows that leadership impact relatively contribute to citizens' Participation in Developmental Activities ($\beta = 0.36$; $t = 3.59$; $p < 0.05$) while Involvement in community groups does not relatively contribute to citizens' Participation in Developmental Activities ($\beta = 0.17$; $t = -1.68$; $p > 0.05$).

Research Question 3: Which of the independent variables contribute most on citizens' participation in developmental activities?

Table 3 reveals that Leadership impact predict most on citizens' Participation in Developmental Activities ($\beta = 0.36$; $t = 3.59$; $p < 0.05$). This implies that Leadership impact is the most important independent variable which may predict most on citizens' Participation in Developmental Activities.

Discussion of Findings

The findings from Table 1 showed that environmental factors greatly influenced citizen's participation in developmental activities, This is revealed by 0.46 (0.20%) of the participant that environmental factors influences their willingness to participate in developmental activities. It has been observed that trustworthy leadership, level of education, socio-economic status and membership of community groups enhances citizen's participation in developmental activities. This is observed in the findings of Idris, 2013, cited in Lee, Idris, and Tuckey 2019, that citizen's participation in community development is influenced by many variables like leadership style, level of exposure, level of education, insufficient fund. The study is in line with the findings of Bappi, Singh, Dahiru (2018) that citizen's level of education influences their understanding of the situation before they can participate in community development activities. This was also corroborated by Adekola (2004) that the socio-economic status of urban dwellers significantly influences their participation in community



development programmes. They therefore concluded that the higher the socio-economic status of individual, the higher their level of participation in community development projects. Similarly, findings from the study conducted by Ige (2017) further revealed that, several social problems such as unemployment, rape, gender and education discrimination, domestic responsibilities, emotional trauma affects women's participation in community development activities.

The findings from Table 2 revealed that effective leadership enhances citizen's participation and generates confidence which is a crucial factor in completing community projects. This corroborates the findings of Uzoagu (2019) that a proactive and trustworthy leader can easily mobilize community members for execution of community projects. Her study revealed that programmes must be efficiently executed or implemented to encourage further participation in other programmes initiated by the leaders. However, it was found in a study conducted by According to Akpunne (2011), socioeconomic status is directly related to belonging to community groups, so people in lower socioeconomic brackets are less likely to get involved in voluntary associations than those in higher brackets due to factors like lower incomes, lower levels of education, lower occupational status, and lower living standards. This discrepancy in participation is reflected in values, expectations, and lifestyles, often making people uncomfortable. Effective leadership is crucial in promoting community development, as confirmed by Springer, Walkowiak and Bernaciak's (2020) research that found a positive relationship between effective leadership and citizen participation in achieving their vision. Therefore, leaders should strive to gain the trust and support of their constituents and sponsors, and dedicate their time and effort transparently towards achieving success in community development programs. The study also found that citizen participation in developmental activities is essential for promoting sustainable community development in Nigeria, and that leadership plays a significant role in determining the level of participation in a given community.

Recommendations

1. Community leaders should be trustworthy and proactive in addressing the numerous prevalent problems in the community which may endangered community development.
2. Public enlightenment should be carried out from time-to-time to make the people aware of the need to join community groups and participate actively in community development projects.
3. Communities should do a critical reappraisal of their leaders to ensure that the regressive, unsustainable conditions that come through leadership, prevailing in some communities are eradicated.



4. Community leaders and stakeholders are encouraged to integrate citizens into identification, planning, execution, monitoring and evaluation of projects regardless of their economic and social status.

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CHAPTER 10

PRINCIPALS'-TEACHERS' CONFLICT AND THE MANAGEMENT OF SECONDARY SCHOOLS IN BENUE SOUTH SENATORIAL DISTRICT

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Abstract

The study investigated principals'-teachers' conflict and the management of secondary schools. Two research questions and two hypotheses guided the study. The descriptive survey research design was used for this study. The population of the study comprised 1,474 teaching and non-teaching Staff from the existing 100 government and grant-aided secondary schools in Benue South Senatorial District of Benue. The sample consisted of 295 teaching and non-teaching staff out 1,474. The instrument for data collection was a self-structured questionnaire titled: "Principals'-teachers' conflict and the management of secondary school questionnaire" (PCMOSSQ). In order to ascertain the reliability of the instrument, a trial test was carried out. Two schools were used to trial test the instrument. Twenty copies of the questionnaire were administered to 20 teachers. The data were collected and analysed using Cronbach alpha, to determine the internal consistency. The overall internal consistency reliability estimate yielded 0.771. Descriptive statistics of mean and standard deviation were used to answer the research questions. Chi-square was used to test the hypotheses at 0.5 level of significance. Findings of the study showed that principals'-teachers' conflict significantly influence teachers' welfare, and discipline in secondary schools.



Recommendation were made among others that principals of secondary schools should try as much as possible to reduce conflict by providing for the welfare of teachers in all ramifications.

Keywords: *Principal-Teachers' Conflict, Management, Benue South Senatorial District*

Background of the Study

Secondary schools are formal educational institutions charged with the responsibility of preparing the younger ones after their primary school career for useful living within any society. They also equip children for higher education. Attainment of these goals require commitment from highly qualified and motivated teachers. For some years now, there have been criticisms on the quality of secondary school products. Fegbemi (2016) states that the performance of secondary school students in external examination has been worrisome to parents, administrators and the general public.

Fegbemi further asserts that the yardstick for measuring the standard of education and administrative responsibility is students' performance in school and public examinations. The conduct of the school and the quality of their products are seen by some as the reflection of the level of administrative performance of their principals. This is a reflection of how they involve teachers in teaching, supervision and control of delegated instructional activities in the school, planning of school programmes and routine administration in the school.

Since 1842 when the early missionaries established the first school in Nigeria, education has metamorphosed into a large and complex social organization. Predictably, most school systems like other social systems, now experience institutional conflict (Peter, Ikoya and Akinse, 2018). Determinants of school organisational conflict have been traced to leadership styles of principals, structural variations in school organisation, employee unionism and a host of other factors (Yakubu, 2016). Whatever the causative agents to institutional conflict may be, educators, parents and policy makers have consistently advised on the need for quick resolution of organisational conflict which may negatively affect management of secondary schools.

However, in the Nigerian school system, conflict occurs from time to time. It is the art of coming into collision, clash or in opposition with one another. It is the tension that is experienced when a group of people feels that their needs or desires are likely to be denied (Canavan and Monahan, 2016). Obi (2018) agrees that conflicts promotes hostility and hinders school effectiveness. Obi further traces low level of school effectiveness to leadership failure which is manifested in increased conflicts between principal and teachers. Onsarigo (2017) sees conflicts as a condition when



one party feels that the other party has frustrated or is about to frustrate some concern of that one party. It therefore implies that conflicts exist whenever an action by one person or group of people interferes with the desires of a particular individual or group of people, Agu (2015) attest that conflicts manifests when someone has a chance to achieve his or her purpose at the expense of someone else. Agu further explained that in schools, teachers struggle for leadership positions like principal, vice-principal, dean of studies, games masters, form masters, labour masters and others

Furthermore, principals'- teachers' conflicts is defined as a situation whereby there is a disagreement between a principal and a teacher over an issue based on personal interest (DeCenzo, 2017). DeCenzo (2017) further states that principals and teachers conflict in school can be explained in terms of conflicting interest between social classes. Okotoni (2015) defines principals-teachers conflicts as any divergence of interest, objectives or priorities between a principal and teacher. In most Nigerian schools, some principals arrogate to themselves the status of landlord, relegating teachers' opinion to that of tenants'. Teachers which are not favoured in this type of social, cultural and other forms of classification usually tend to revolt violently in the school which invariable affect effective management of the school.

Management is the effective utilisation and co-ordination of resources such as plant, land, materials, finance and labour to achieve defined objectives with maximum efficiency in schools (Onwuchekwa, 2018). The present study focused on the influence of principals-teachers conflict on teachers' welfare and teachers' discipline. Ezeocha (2015) defines management of schools as the coordinating of peoples efforts towards the achievement of school goals, that is teaching and learning. According to Herr (2015), management of secondary schools is a practical activity involving the determination of aims, allocation of resources efficiently, the maintaining of discipline, making of schedules and the evaluation of effectiveness in the school system. Onsarigo (2017) notes that conflicts between principals and teachers in schools can escalate into a number of undesirable behaviours among staff leading to poor work performance which affect effective and efficient management of the schools. Onsarigo further states that conflicts between principals and teachers in schools do lead to situations where teachers do not work on registers, prepare their lesson notes, mark examinations promptly or compile examination and report on schedule. The researcher observes that when principals and teachers are not in good terms, there is seemingly neglect of their welfare, teaching and learning may be affected, teachers' attitude to work may also not be good and probably escalation of indiscipline among teachers.

Furthermore, teachers' welfare is not being considered by some principals. This is seen through teacher's irregular promotion, low pay package (when compared to other public workers) and societal perception of the job. This may have dampened the morale of teachers. When teachers are not motivated, their level of job commitment may be low and the objectives of the school may not be accomplished.



This may also heighten principal- teachers' conflicts in all ramifications (UNICEF, 2007). Principals-teachers' conflicts in secondary schools could lead to imbalance in the allocation of and use of resources. This is why Ayot and Briggs (2012) note that academic achievement of students depends on effective leadership. The principal is the chief executive of the school. He/she has some administrative tasks to perform such as supervision of instructional programmes in the school, management of school personnel, management of school finance, maintenance of teachers and students' welfare services and establishment of good community relations. His or her failure to perform these tasks effectively and efficiently will affect the tone of the school and achievement of academic goals (Nwankwo, 2015).

More so, principals-teachers'-conflict may lead to teachers' indiscipline. This may be due to violation of teaching ethics like failure to cover the time table, absence for no reason, failure to write lesson plan and lesson notes which are capable of obstructing the smooth functioning of the school system thereby affecting management of secondary schools. Adeyemo (2015) asserts that success can only be achieved in school when teachers show good example of time management. The practice in most of the secondary schools is that school activities seem not to respect the designed time table. Mafabi (2013) observes that punctuality, in most times, is not observed by teachers, head teachers and non-teaching staff in an educational institution. Against this background the researcher is investigating the influence of principals-teachers' conflict on the management of secondary schools in Benue South Senatorial District of Benue State.

Statement of the Problem

The economic downturn in Nigeria in the last two decades has led to poor salaries and wages for workers. The attendant disparity in incomes and inflation has produced serious dissatisfaction and agitations among Nigerian teachers, which has often resulted in industrial disputes and conflicts in almost every educational institution. This has become a major concern for school administrators in secondary schools in Benue South Senatorial District of Benue State.

It has been observed that conflicts are more pronounced in state owned secondary schools than in federal schools in Benue South Senatorial District of Benue State. This is because of the disparity in salaries and remunerations that exists between the two. Specifically, secondary school workers in Benue South Senatorial District of Benue State have had cause a to protest against poor pay and unsatisfactory conditions of service. Most often, the conflicts were suppressed with the neglect of other methods of conflict resolution. Consequently, this has dampened the morale of teachers and other workers in secondary schools in the state. This may have influenced management of secondary schools in the area. To accumulate a series of conflicts



without devising appropriate means of managing them is like sitting on a keg of gun powder which could explode at any time.

The United Nations International Children's Emergency Fund (UNICEF, 2007) lent credence to this point when it states that conflicts when not dealt with constructively often explode into violence. The attitudes of school principals in Benue South Senatorial District of Benue State have not helped much as some of the conflicts centre on their personality. Currently, there is a general apathy between teachers and principals in many public secondary schools in Benue South Senatorial District of Benue State, leading to poor relationship between teachers and principals, poor teachers' welfare, poor teaching and learning, poor attitude to work and poor discipline in secondary schools in the state. Thus, the problem of the study is: What is the influence of principals-teachers' conflicts on management of secondary schools in Benue South Senatorial District of Benue State.

Objective of the Study

The purpose of the study was to find out the influence of principals-teachers' conflict on the management of secondary school in Benue South Senatorial District of Benue State. Specifically the study sought to:

- i. determine the influence of principals-teachers' conflict on welfare of teachers in secondary schools in Benue South Senatorial District of Benue State .
- ii. find out the influence of principals-teachers' conflict on teachers discipline in secondary schools.

Research Questions

The following research questions were posed to guide the study:

- i. In what ways does principals-teachers' conflict influence teachers' welfare in secondary schools in Benue South Senatorial District of Benue State?
- ii. What is the influence of principals-teachers' conflict on teachers discipline in secondary schools?

Statement of Hypotheses

The following null hypotheses were formulated and will be tested at 0.05 level of significance:

- i. Principals-teachers' conflict does not significantly influence teachers' welfare in secondary schools in Benue South Senatorial District of Benue State.



- ii. Principals-teachers' conflict does not significantly influence teachers' discipline in secondary schools.

Methodology

Survey research design was used for this study. The population of the study comprised 1,474 teaching staff from the existing 100 government and grant-aided secondary schools in Zone C Senatorial District of Benue South Senatorial District of Benue State (Benue State Teaching Service Board, 2022). The instrument for data collection was a self-structured questionnaire titled: "Principals-teachers' Conflict and Management of Secondary School Questionnaire" (PCMOSSQ). The instrument was made up of 10 items, which elicited responses on the variables of the study from the respondents. A 4-point rating scale with the response modes of Strongly Agree (SA) = 4, Agree (A) 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1 was used to weight the responses. Cluster A contained items 1-5 which was used to determine the influence of principals-teachers' conflict on the welfare of teachers in secondary schools. Cluster B contained items 6-10 on influence of principals-teachers' conflict on discipline in secondary schools.

The structured questionnaire developed by the researcher was subjected to scrutiny by the researcher's supervisor and three other research experts from Curriculum and Teaching and Educational Management, Faculty of Education, Benue State University Makurdi. The experts ascertained its content validity by their criticisms, appraisal of the clarity of terms, accuracy and useful suggestions. These ensured that the items were relevant to elicit the required information. The instrument had about 15 items. However, five items were deleted and ten items were reframed. The instrument given to experts for validation was reviewed, restructured and rearranged to meet the requirements of the study. All the experts' corrections and suggestions were incorporated into the instrument.

In order to ascertain the reliability of the instrument, a trial test was carried out. Two schools outside the sampled schools were used to trial test the instrument. Twenty copies of the questionnaire were administered to 20 teachers. Two days were used to administer the questionnaire. No research assistant was employed. The data were collected and analysed using Cronbach alpha to determine the internal consistency. The choice of Cronbach alpha was due to the fact that the items on the instrument are not dichotomously scored. The reliability coefficients for the instrument in respect of each research question as contained in questions 1, and 2 was found to be 0.79 and 0.72 respectively. The overall internal consistency reliability estimate yielded 0.77. This showed that the instrument is reliable. According to Denga (2003) an instrument with a correlation of 0.70 and above is reliable. The researcher, therefore considered it reliable for the study.



For this study, research assistants were brief on how to assist the researcher in administering the questionnaire. They were properly briefed and equipped to understand the terms used in the instrument or questionnaire to avoid instrument mortality. A total of 295 copies of the questionnaire were administered to the respondents and the respondents were given a maximum of two days after which the researcher and the research assistants visited them (the respondents) and collected the completed questionnaire this was because the researcher wanted the respondents to be able to take his or her time to answer the questions correctly. Descriptive statistics of mean and standard deviation were used to answer the research questions. A cut-off point of 2.50 was used for decision making. Any mean scores of 2.50 and above was accepted as having the desired influence while mean scores of less than 2.50 were not accepted. Chi-square statistics was used to test the hypotheses at 0.05 level of significance. Chi-square statistics was used because it is an inferential statistical tool that is most suitable for non –parametric statistics of this nature

Presentation and Discussion of Results

Analysis and Interpretation

A total of 294 copies of the questionnaire were taken to the field and administered to 294 respondents and 290 copies of the questionnaire representing 95% were returned. The presentation, analysis and interpretation of data were organised around the four research questions and four hypotheses that guided the study.

Analysis of Research Questions

The research questions were analysed using mean and standard deviation.

Research Question One: In what ways does principals-teachers conflict influence teachers' welfare in secondary in Zone C Senatorial District of Benue State?

Table 1: Mean and Standard Deviation of respondents on influence of principals-teachers conflict on teachers' welfare in secondary schools

Item No	Items Description	SA	A	D	SD	\bar{X}	SD	Decision
1	Principals-teachers' conflict often leads undue dismissal of teachers.	130	78	61	21	3.09	0.97	Accepted
2	Principals-teachers' conflict leads to	127	113	30	20	3.20	0.88	Accepted



	indiscriminate transfer of the teacher by the school head.							
3	Principals-teachers' conflict stifles communication which makes teachers not to be able to have a say on their welfare	154	23	64	49	2.97	1.20	Accepted
4	Principals-teachers' conflict reduces teacher's fringe benefits..	180	29	60	21	3.27	1.02	Accepted
5	Principals-teachers' conflict leads to teacher's irregular promotion.	100	101	69	39	2.97	0.93	Accepted
	Cluster Mean/Standard Deviation					3.10	1.00	Accepted

Source: Field Work 2023

Table 1 shows that the mean ratings for items 1-5 were above the cut-off point of 2.50. The cluster mean of 3.10 with the standard deviation of 1.00 is above the cut-off point of 2.50. This implies that principals-teachers' conflict influence teachers' welfare in secondary schools Zone C Senatorial District of Benue State

Research Question Two: What is the influence of principal teachers-conflict on discipline in secondary schools?

Table 2: Mean and Standard Deviation of respondents on influence of principals-teachers' conflict on discipline in secondary schools

Item No	Item Description	SA	A	D	SDN	\bar{X}	Std	Decision
6	Principals-teachers' conflict leads to unapproved study by some teachers	101	107	62	20	3.00	0.92	Accepted
7	Principal teachers-conflict leads to non-completion of school records by teachers.	93	91	86	20	2.89	0.94	Accepted
8	Principal teachers-conflict leads to failure to mark	74	96	84	36	2.72	0.98	Accepted



	students exercise books due to transfer of aggression							
9	Due to principals-teachers' conflict punctuality is not observed by teacher.	117	49	108	16	2.92	1.00	Accepted
10	Principal-teacher's conflict leads to non-preparation of lesson notes by teachers.	98	100	39	53	2.84	1.09	Accepted
	Cluster Mean/Standard Deviation					2.87	0.97	Accepted

Source: Field Work 2023

Table 2 shows that the mean ratings for items 1-5 were above the cut-off point of 2.50. The cluster mean of 2.87 with the standard deviation of 0.97 is above the cut-off point of 2.50. This means that principals teachers conflicts influences discipline in secondary schools.

Testing Hypotheses

Chi-square was used in testing the hypotheses at 0.05 alpha level of significance

Hypothesis One: Principals-teachers' conflict does not significantly influence teachers' welfare in secondary schools in Zone C Senatorial District of Benue State

Table 3: Chi-Square Test of influence of principals-teachers' conflict on teachers' welfare in secondary schools

Opinion	Observed N	Expected N	Residual	Df	Level of Sign	Chi-Square cal	P. Valve	Decision
Strongly Agree	691	367.25	323.75	3	0.05	84.43	0.00	Significant
Agree	344	367.25	-23.25					
Disagree	284	367.25	-83.25					
Strongly Disagree	150	367.25	-217.25					



Table 3 reveals that Chi-square=84.43 at Df=3; $P=.00 < 0.05$. Since probability value of 0.00 is less than the alpha level of 0.05, the null hypothesis which states that principals-teachers' conflict does not significantly influence teachers' welfare in secondary schools is therefore rejected. This shows that Principals-teachers' conflict significantly influences teachers' welfare in secondary schools.

Hypothesis Two: Principals-teachers' conflict does not significantly influence discipline in secondary schools.

Table 4: Chi-Square Test of principals-teachers' conflict does not significantly influence discipline in secondary schools

Opinion	Observed N	Expected N	Residual	Df	Level of Sign	Chi- Square	P. Valve	Decision
Strongly Agree	482	367.25	1140.75	3	0.05	67.16	0.00	Significant
Agree	44p	367.25	75.75					
Disagree	379	367.25	11.75					
Strongly Disagree	145	367.25	-222.25					

Table 4 reveals that Chi-square=67.16, Df=3; $P=.00 < 0.05$. Since probability value of 0.00 is less than the alpha level of 0.05, the null hypothesis which states that principals-teachers' conflict does not significantly influence teachers discipline in secondary schools, is therefore rejected. This implies that principals-teachers' conflict has significant negative influence on teachers discipline in secondary schools.

Discussion of Findings

In this study two null hypotheses were formulated and tested at 0.05 alpha level of significance. The findings of this research have been discussed in line with the research questions and hypotheses.

The first finding of this study revealed that principals-teachers' conflict significantly influences teachers' welfare in secondary schools. This means that due to conflicts between principals and teachers' the welfare teachers are affected. This agrees with the findings of Ameh and Peter (2014) who found that principals-teachers' conflict leads to indiscriminate transfer of the teacher, reduces teacher's fringe benefits and leads to teacher's irregular promotion. The finding also agrees with that



of Gay and Sommersum (2012) who found that the principals perceived that conflicts in school were caused mainly by ambiguously defined responsibilities. The teachers agreed that different perception was another major cause of conflict in schools which has effect on welfare of teachers. This means that Principals-teachers' conflict often leads undue dismissal of teachers, indiscriminate transfer of the teacher by the school head, stifles communication which makes teachers not to be able to have a say on their welfare, reduces teacher's fringe benefits and leads to teacher's irregular promotion.

The second finding revealed that principals-teachers' conflict have significant negative influence on discipline in secondary schools. This means that principals-teachers' conflict leads to indiscipline in schools. This finding agrees with that of Nafees, Tahirkheli and Masood (2012) who found that when principals adopt autocratic and unkind behaviour on teachers, it leads to disobedience of teachers, teachers mostly waste their time in mere gossiping. The finding also agrees with that of Oluremi (2013) who found that principals adopted quality improvement measures, encourage team work with staff and students, participate in academic activities that influenced academic achievement in the school. The finding also agrees with that of Mafabi (2013) who found that, success can only be achieved in school when teachers shows good example of time management. This means that principals-teachers' conflict leads to unapproved study by some teachers, principal teachers-conflict leads to non-completion of school records by teachers, leads to failure to mark students exercise books due to transfer of aggression, due to principals-teachers' conflict punctuality is not observed by teacher and leads to non-preparation of lesson notes by teachers.

Conclusion

Based on the findings of the study, the researcher concluded that principals' teachers' conflicts has negative influence on teachers' welfare, school discipline.

Recommendations

Based on the findings, the following recommendations were made:

1. Principals of secondary schools should try as much as possible to reduce conflict by providing for the welfare of teachers in all ramifications.
2. All education stakeholders should therefore work together in creating conducive environment for effective discipline irrespective of conflicts in schools.



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CHAPTER 11

FORMS, CAUSES, EFFECTS AND MANAGEMENT OF INDISCIPLINE AMONG SECONDARY SCHOOL STUDENTS IN ILORIN WEST LOCAL GOVERNMENT, KWARA STATE

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Abstract

This study examined forms, causes, effects and management of indiscipline among secondary school students in Ilorin West Local Government, Kwara State. The study used descriptive research design of survey type. The population of the study consisted of all the teachers in the 36 public secondary schools in Ilorin West Local Government, Kwara State. Random sampling technique was used to select 18 public secondary schools in Ilorin West Local Government out of the 36, while 20 teachers were randomly selected from each of the sampled schools to make a total of 360 respondents. Forms, Causes, Effects and Management Strategies of Indiscipline Questionnaire (FCMSIQ) was used to collect data for the study. The questionnaire was validated by four lecturers in the Faculty of Education, University of Ilorin, Ilorin, Nigeria. It was also tested for reliability and found reliability coefficient of 0.74. Mean and Standard Deviation were used to answer the research questions. The study found out among other things, that lateness to school, drug abuse, gambling, truancy, violence, stealing, disrespect of teachers and prefects, destruction of school properties, rape and cultism are forms of indiscipline in secondary schools in Ilorin West Local Government, Kwara State. Based on the findings of the study, it was recommended among other things, that parents should keep surveillance on their children in order to properly monitor their utilization of mass media and ensure that they do not move along with friends who could negatively influence their behaviour.

Keywords: *Indiscipline, Forms, Causes, Effects, Management strategies*



Introduction

Secondary education, like other levels of education, is purposely designed for academic and moral development of students. Any child enrolled in a school is expected to have his or her attitudes well-refined, in order to behave in compliance with not only the school rules and regulations, but also the societal norms. However, in recent times, some behaviours which are not in tandem with the school rules and regulations are highly exhibited by secondary school students, the issue which is regarded as indiscipline. Indiscipline means non-conformity of students to the established rules and regulations in a school. It also refers to any behaviour that does not fall within the purview of what is acceptable in a school.

According to Odebode (2019), indiscipline means the opposite of discipline; a behaviour which is not in tandem with the established rules and regulations in an educational institution. Ngwokabuenui (2015) posited that indiscipline acts which are common among students include lateness, cultism, vandalism of school properties, drug abuse, rape, alcoholic consumption, stealing, rioting; and disrespect of school administration, prefects and teachers. Creswell (2013) stated that indiscipline acts which are prevalent among students include indecent dressing, truancy, school property vandalism, disrespect of school authority, disturbance of classroom during lessons, the use of profanity and theft. Aibinuomo and Imasuen (2021) stated that indiscipline has been a serious challenge giving policy makers, teachers and members of the public a great worry. It covers the use of abusive language, dishonesty, physical damage and stealing of school properties. Aibinuomo and Imasuen (2021) lamented that indiscipline acts among students in secondary schools in Nigeria comprise violence, dishonesty, lying, disobedience to teachers, prefects and school administration; abortion, lessons boycotting, vandalism of school property, armed robbery, watching and watching of pornography.

Indiscipline in secondary schools could be caused by some factors. In the opinion of Aloysius and Stanley (2020), factors responsible for indiscipline among students include the teacher-attributed determinants, homes where students come from as well as other critical issues attributed to the foreign culture. The findings of the study conducted by Mwaniki, Ngunjiri and Kanjogu (2016) showed that children's right act and total proscription of corporal punishment in schools in Nigeria has been promoting students' disrespect to teachers, an act which is against the school rules and regulations. As revealed from the findings of the study carried out by Odebode (2019), the menace of indiscipline which has been prevalent among students in Nigerian schools are caused by the school environment, parents, society, students and government. To support the position of the above scholars, the findings of the study of Okpara (2020) showed that indiscipline among students in secondary schools in Bwari Area Council, Abuja was triggered by drugs influence, poor implementation of school rules and regulations, peer influence, environmental influence, poor



upbringing, over-crowded classrooms and mass media. Students need to stay away from indiscipline because it could have negative effects on them.

As opined by Elughe (2014), effect of indiscipline could be rustication from school system, failure to write continuous assessment or examinations, disobedience to school management and teachers, crime involvement, poor seriousness to learning, retardation of mental ability and poor academic performance. The outcome of the study carried out by Okpara (2020) revealed that the effects of indiscipline on students are missing of tests and examinations, dropout from school, poor academic performance in examinations and continuous assessments, infringement upon school rules, involvement in crime, loss of class notes due to absenteeism, easy loss of concentration in class and poor attitudes towards studies. Aloysius and Stanley (2020) maintained that consequences of indiscipline are not limited destruction of life, disorderliness and anxiety among the students. Salman (2017) lamented secondary school students in Nigeria are exhibiting various characters which are nothing but acts of indiscipline. This needs a serious attention to prevent the consequences which could be loss of life, poor academic performance, notorious criminal and drop out.

It is believed that there is no problem without solution, Ngwokabuenui (2019) found in his study that the ways through which the problem of indiscipline among students could be solved include value re-orientation, reduction of students' population in classrooms, adequate provision of moral training for students, students' involvement in school policy formulation, cordial teacher-students' relationship, effective parental supervision, adequate provision of facilities for teaching and effective and functional Parent-Teacher Association. Okpara (2020) maintained that in providing solutions to the problem of indiscipline among students, parents need to properly key into the moral training of their children right from their formative stage and be watchful of the kind of friends which their children move with; and there is need for serious implementation of the rules and regulations by the school management. Salman (2017) asserted that in order to find plausible solutions to the problem of indiscipline in secondary schools in Nigeria, parents, teachers, governments, members, school managements and students have to play their roles sincerely.

Statement of the Problem

Based on the experiences of the researchers, information gathered from community members as well as teachers, the cases of indiscipline have been very prevalent among secondary school students in Ilorin West Local Government, Kwara State. This is evident in the fact in this area, on daily basis, some students are found in gambling centres, viewing centres or wandering around the streets or loitering the nooks and crannies of the communities during the school hours. Some students have been caught taking hard drugs, while raping of female students by their male colleagues is no more



a new case in some of these schools. Some teachers and prefects have been beaten up by some students while going home and stealing of the school properties has become an order of the day. Some students had been arrested due to their involvement in cultism, while some school properties have been destroyed due to unjustifiable violence.

However, some researchers had conducted studies related to this study. For instance, Ngwokabuenui, (2019) investigated students' indiscipline: types, causes and possible solutions: The case of secondary schools in Cameroon. Aloysius and Stanley (2020) examined prevalence of indiscipline among senior secondary school students and the influence on the academic achievement in Aguata Education Zone of Anambra State. Okpara (2020) examined the menace of indiscipline among students and its effect on junior secondary school students' performance in Bwari Area Council of the Federal Capital Territory, Abuja. However, all these previous studies are related to this present study, but none of them was carried out in Ilorin West local Government, Kwara State. This is the gap which this study filled.

Purpose of the Study

The purpose of the study was to:

- i. examine the forms of indiscipline among secondary school students in Ilorin West Local Government, Kwara State;
- ii. investigate the causes of indiscipline among secondary school students in Ilorin West Local Government, Kwara State;
- iii. determine the effects of indiscipline among secondary school students in Ilorin West Local Government, Kwara State; and
- iv. find out the management strategies for curbing indiscipline among secondary school students in Ilorin West Local Government, Kwara State.

Research Questions

- i. What are the forms of indiscipline among secondary school students in Ilorin West Local Government, Kwara State?
- ii. What are the causes of indiscipline among secondary school students in Ilorin West Local Government, Kwara State?
- iii. determine the effects of indiscipline among secondary school students in Ilorin West Local Government, Kwara State?
- iv. find out the management strategies for curbing indiscipline among secondary school students in Ilorin West Local Government, Kwara State?



Methodology

This study examined forms, causes, effects and management of indiscipline among secondary school students in Ilorin West Local Government, Kwara State. The study used descriptive research design of survey type. The population of the study consisted of all the teachers in 36 public secondary schools in Ilorin West Local Government, Kwara State. Random sampling technique was used to select 18 (50%) public secondary schools in Ilorin West Local Government out of the 36, while 20 teachers were randomly selected from each of the sampled schools to make a total of 360 respondents. Forms, Causes, Effects and Management Strategies of Indiscipline Questionnaire (FCEMSIQ) was used to collect data for the study. The questionnaire was validated by four lecturers in the Faculty of Education, University of Ilorin, Ilorin, Nigeria. The instrument had four sub-headings (Forms, Causes, Effects, and Management Strategies). Forms and Causes had 10 items each, while Effects and Management Strategies had six items. Reliability of the instrument was ensured by administering it twice to 30 teachers who were not part of the study respondents, within the interval of two weeks. The data gathered were analysed using Cronbach's Alpha and reliability coefficient realised was 0.74. This confirmed the reliability of the instrument for use in the research. The researchers went to the sampled schools and personally administered the instrument to the respondents. Each copy of the questionnaire was collected from the respondents, immediately after feeling. Descriptive statistics of Mean and Standard Deviation were used to answer all the four research questions in the study. In determining the benchmark for making the decision, mean scores less than 2.50 were regarded as Rejected, while the mean scores from 2.50 and above were considered Accepted. Out of the 360 copies of the questionnaire distributed, only 335 were retrieved and used for analysis.

Data Analysis and Discussions

Out of the 360 copies of the questionnaire distributed, only 335 were retrieved and used for analysis.

Research Question One: What are the forms of indiscipline among secondary school students in Ilorin West Local Government, Kwara State?



Table 1: Forms of Indiscipline among Secondary School Students in Ilorin West Local Government, Kwara State

S/N	Items	N	\bar{X}	SD	Decision
1.	Lateness to school	335	3.34	1.18	Accepted
2.	Drug abuse	335	2.65	.87	Accepted
3.	Gambling	335	3.04	1.11	Accepted
4.	Truancy	335	3.57	1.29	Accepted
5.	Violence	335	2.85	1.31	Accepted
6.	Stealing	335	3.49	1.24	Accepted
7.	Disrespect of teachers and prefects	335	3.33	1.15	Accepted
8.	Destruction of school properties	335	2.59	.66	Accepted
9.	Rape	335	2.61	.81	Accepted
10.	Cultism	335	3.15	1.28	Accepted

Mean scores less than 2.50 = Rejected; 2.50 and above = Accepted

As shown in Table 1, the mean scores of items 1 to 10 are not less than 2.50; hence, all the items are accepted. This means that lateness to school, drug abuse, gambling, truancy, violence, stealing, disrespect of teachers and prefects, destruction of school properties, rape and cultism are forms of indiscipline in secondary schools in Ilorin West Local Government, Kwara State. This finding agrees with the findings of Salaudeen, Gbolagade and Sangoniya (2021) that the indiscipline acts among students in schools in Oyo East Local Government Area in Oyo State include school properties vandalism, school authority abuse, unconducive learning environment, poor leadership by school administrators, overcrowded classroom, unmemorable school rules and regulation, fighting, students' restlessness and poor study habits.

Research Question Two: What are the causes of indiscipline among secondary school students in Ilorin West Local Government, Kwara State?

Table 2: Causes of Indiscipline among Secondary School Students in Ilorin West Local Government, Kwara State

S/N	Items	N	\bar{X}	SD	Decision
1.	Peer influence	335	3.22	.91	Accepted



2.	Poor parenting	335	3.58	1.23	Accepted
3.	Over-crowdedness of classrooms	335	2.71	.50	Accepted
4.	Mass media influence	335	3.36	.62	Accepted
5.	Poverty	335	2.88	.91	Accepted
6.	Teacher influence	335	2.67	.58	Accepted
7.	Abolition of corporal punishment	335	2.92	.73	Accepted
8.	School type	335	2.25	.46	Rejected
9.	School location	335	3.11	1.24	Accepted
10.	Poor school leadership	335	2.95	.57	Accepted

Mean scores less than 2.50 = Rejected; 2.50 and above = Accepted

As revealed in Table 2, the mean score of items 1, 2, 3, 4, 5, 6, 7, 9 and 10 are not less than 2.50; hence, all the items are accepted. The mean score of item 8 is less than 2.50 and as such considered rejected. This shows that peer influence, poor parenting, over-crowdedness in classrooms, mass media influence, poverty, teacher influence, abolition of corporal punishment, school location and poor school leadership were causes of indiscipline among secondary school students in Ilorin West Local Government, Kwara State. This finding supports the position of Ngwokabuenui (2015) that teachers' attitudes, socio-economic status of parents, perspectives of their peer group, their parents' socioeconomic achievements, parent's attitude, and school environment contributed to the problem of indiscipline in secondary schools in Cameroon.

Research Question Three: What are the effects of indiscipline among secondary school students in Ilorin West Local Government, Kwara State?

Table 3: Effects of Indiscipline among Secondary School Students in Ilorin West Local Government, Kwara State

S/N	Items	N	\bar{X}	SD	Decision
1.	Poor academic performance	335	3.41	1.27	Accepted
2.	Rustication	335	3.19	.96	Accepted
3.	Untimely death	335	2.95	.72	Accepted
4.	Health problem	335	3.19	.80	Accepted



5.	Future destruction	335	3.43	1.16	Accepted
6.	Dropout	335	3.08	1.20	Accepted

Mean scores less than 2.50 = Rejected; 2.50 and above = Accepted

As shown in Table 3, all the mean scores of items 1 to 6 did not fall below 2.50; hence, they were accepted. This signifies that poor academic performance, rustication, untimely death, health problem, future destruction and dropout are effects of indiscipline among Secondary School Students in Ilorin West Local Government, Kwara State. This finding supports the finding of Gabriel (2018) that consequences of indiscipline among secondary school students in Agege Local Government secondary schools, Lagos State were death, drop out, waste of parents' money, early pregnancy, notorious criminal, destruction of future.

Research Question Four: What are the management strategies for curbing indiscipline among secondary school students in Ilorin West Local Government, Kwara State?

Table 4: Management Strategies for Curbing Indiscipline among Secondary School Students in Ilorin West Local Government, Kwara State

S/N	Items	N	\bar{X}	SD	Decision
1.	Effective parenting	335	3.60	1.41	Accepted
2.	Effective enforcement of school rules and regulations	335	3.48	1.23	Accepted
3.	Reduction of the students' population in over-crowded classrooms	335	2.09	.86	Accepted
4.	Effective guidance and counselling in schools	335	3.11	.93	Accepted
5.	Serious punishment for any teacher, caught encouraging indiscipline acts among students	335	3.51	1.20	Accepted
6.	Use of corporal punishment	335	3.91	1.22	Accepted

Mean scores less than 2.50 = Rejected; 2.50 and above = Accepted

As revealed on Table 4, the mean scores of items 1 to 6 are not less than 2.50; therefore, they are all accepted. This connotes that effective parenting, effective



enforcement of school rules and regulations, reduction of the students' population in over-crowded classrooms, effective guidance and counselling in schools, serious punishment for any teacher caught encouraging indiscipline acts among students and use of corporal punishment. This finding is in consonance with the findings of Aloysius and Stanley (2020) that the management strategies for curbing indiscipline are effective guidance and counselling services, use of corporal punishment, enforcing the teaching of moral instructions, effective use of school functionaries, effective teaching and learning allowing teachers free hand to discipline students and participation of students in extracurricular activities.

Conclusion

The study concluded that:

- i. lateness to school, drug abuse, gambling, truancy, violence, stealing, disrespect of teachers and prefects, destruction of school properties, rape and cultism are forms of indiscipline in secondary schools in Ilorin West Local Government, Kwara State;
- ii. peer influence, poor parenting, over-crowdedness in classrooms, mass media influence, poverty, teacher influence, abolition of corporal punishment, school location and poor school leadership were causes of indiscipline among secondary school students in Ilorin West Local Government, Kwara State;
- iii. poor academic performance, rustication, untimely death, health problem, future destruction dropout were effects of indiscipline among secondary school students in Ilorin West Local Government, Kwara State; and
- iv. effective parenting, effective enforcement of school rules and regulations, reduction of the students' population in over-crowded classrooms, effective guidance and counselling in schools and serious punishment for any teacher, caught encouraging indiscipline acts among students are management strategies for curbing indiscipline among secondary school students in Ilorin West Local Government, Kwara State.

Recommendations

The following recommendations were made:

- i. Parents should keep surveillance on their children in order to properly monitor their utilization of mass media and ensure that they do not move along with bad friends who could negatively influence their behaviour.



- ii. Principals should give adequate priority to effective implementation of the school rules and regulations, by meting out appropriate punishment for any student who involved in an act of indiscipline and reporting any teacher caught encouraging indiscipline among students to the appropriate authority, to serve as a deterrent for others.
- iii. There should be effective counselling for students so as to make them understand various forms, causes, consequences and management of indiscipline and the benefits of being disciplined.
- iv. government should provide more classrooms for schools with over-crowded classrooms in order to decongest the existing ones and give teachers the ability to properly oversee the affairs of students while teaching them.
- v. Government should properly censure the contents of what the mass media are producing for the consumption of members of the public, in order to prevent pollution of the children's minds.

Children should avoid keeping bad friends in order not to be negatively influenced to involve in indiscipline acts and also report any of their colleagues secretly engaging in any indiscipline act to the school management or their teachers.

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CHAPTER 12

ENCUMBRANCE TO STUDENTS' SAFETY IN NIGERIA: THE ROLE OF PARENTS IN SECURITY EDUCATION

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Abstract

Security of lives and properties of the citizens both old and young have always been left solely in the hands of the government as part of its constitutional responsibility to its citizens. However, events in recent times, is shifting the security responsibility of the citizens from the shoulders of the government alone to all and sundry. The rise in the level of insecurity in the educational institutions in Nigeria has brought about the need for the inclusion of security education in the school curriculum but, a major stake holder in the society – the home, is yet to take full responsibility for security education being a micro unit of the society. This paper therefore examines the types and forms of insecurity, causes of insecurity, the consequences and implications of insecurity on school age children, security education and the need for adequate security education beginning from the home.

Keywords: *Security education, Students' safety, Role of parents*

Introduction

Insecurity abound everywhere, but the schools seem to be the soft target probably because the children are believed to be young and naïve with little or no knowledge on the various skills of self-defense and danger prevention. These attacks on young school children, has wrecked a lot of havoc on both the individual lives and the country at large. This has put all the stakeholders in the education sector in a dilemma. The governments both at the federal and state levels have been putting different measures in place to sensitize the citizenry about the need for security education and an example of this is the introduction of security education in the school curriculum. However, education begins from the home therefore the role of parents and the family



cannot be underplayed resulting in the need for parents to take up the responsibility of giving succinct complementary security awareness and education to the children from the home.

Family is the fundamental unit in building strong and cohesive societies. Therefore, it is essential to provide the family with a range of mechanisms and skills that help to fulfill its role by immunizing the children from destructive beliefs (AL-shahrani and Hammad, 2020). Therefore, the role of a family in the physical, moral, religious and intellectual development of a child from cradle cannot be overemphasized. Majority of life-threatening anti-social activities such as human trafficking, sexual abuse, domestic violence, terrorism, armed robbery and murder to mention just a few, are becoming recurring headlines on global news desk. These acts are usually carried out by more advantaged persons over less advantaged irrespective of age and gender, rendering human communities unpredictable and insecure (Akpan, 2021).

Mashaqi (2014) affirms that family has an important and fundamental role in the upbringing of the children with regards to safety and the absence of the role can lead to early likelihood of exposure to crimes as a result of insecurity. Constitutionally, the government of any nation is saddled with the responsibility of securing the lives and properties of its citizens both old and young. The recent surge in insecurity especially in educational institutions not excluding those in the pre-basic, basic and secondary levels calls for an inclusive approach to tackling the menace of insecurity. Parents and guardians are basically the most important role models in the life of a child and they easily make indelible life prints in their young minds because they are constantly watching and learning from the parents either consciously or unconsciously.

This paper, therefore, will examine the consequences of insecurity on school age children and the need for an all-inclusive security education, beginning from the parents who are the first teachers of a child.

Concept of Security and Insecurity

Safety is generally considered an integral part of human need and desire. The state of being free from danger or any threat to one's survival or existence is desirable by every human being. This perhaps is one of the reasons Abraham Maslow in his hierarchy of needs placed safety on the second level in the pyramid immediately after the physiological needs. Security embraces all measures designed to protect and safeguard the citizenry and the resources of individuals, groups, businesses and the nation against sabotage or violent occurrence (Ogunleye, Adewale, Alese and Ogunde, 2011). In the opinion of Waswas and Gasayameh (2017), security is a shared responsibility, and everyone has his role and duty and when individual efforts are



integrated with collective efforts, the conditions for security are integrated, which positively affects society and brings prosperity and progress. It can be safely said therefore, that security is no longer the exclusive reserve of an individual, organization or government but a collaborative effort. The modern concept of safety has a broader dimension than in the past. It covers political, military, economic and technological, ecological, social and humanitarian factors. It also includes preserving the national identity and respecting fundamental civil rights and freedoms. Most often, safety is defined as an anxiety-free state that creates a sense of confidence. (Wysokinska-Senkus, 2020; Zieba, 2005).

The exact opposite of security no doubt is insecurity. It is a pandemic that not only inflicts pain, suffering and ultimate destruction to humanity but threatens the very existence of nations. It slows down development and ravages economies (Bruck and De Groot, 2013). Achumba, Ighomereho and Akpan-Robaro (2013) define insecurity from two perspectives. First, is insecurity as the state of being open or subject to danger or threat of danger, where danger is the condition of being susceptible to harm or injury. Secondly, insecurity is seen as the state of being exposed to risk or anxiety, where anxiety is a vague unpleasant emotion that is experienced in anticipation of some misfortune. These definitions of insecurity underscore a major point that those affected by insecurity are not only uncertain or unaware of what would happen but they are also vulnerable to the threats and dangers when they occur (Okonkwo, Ndubisi-Okolo and Anagbogu, 2015).

Causes of Insecurity

Insecurity is a global problem that affects almost all underdeveloped countries and some developed countries (Akor, Abubakar and Ogunode, 2021). Attacks on schools and institutions of learning, is becoming the order of the day. Global Coalition to Protect Education from Attack (GCPEA) (2020) posits that attacks on schools were the most frequent forms of attack on education during this period. Some of the factors responsible for the rising insecurity in Nigeria as observed by Dange and Kilgori (2014) include; unemployment, school drop-out, poverty, under development, bad leadership, poor parental care and upbringing, rural/urban migration, abrupt changes in the structure of the society and others. Other causes of insecurity in the nation as stated by Bashiru, Armiya'u and Muh'd (2015) include cultural differences, clashes of interest among leaders and followers, social change as well as cultural differences, unchecked corruption, greediness, selfishness, lack of political will and conscience as well as lack of vision and focus by successive government.

Manga (2019) identified some peculiar causes of insecurity in the Nigerian education system which affects teaching and learning. These include:



1. ***Nonchalant attitude of school administrators on security:*** the first cause of insecurity in schools according to Manga (2019) is the seeming nonchalant attitude of some school managers towards issues of security and crime prevention in their schools. Citing Jill (2000), Manga (2019) observed that many school managers lack up-to-date and systematic school security strategies that spell out what security works should be carried out, who should be held accountable, procedure for executing the task, time frame for the task and the need for the task. Many school administrators do not efficiently recognize, direct, coordinate, supervise and monitor security activities in their schools. In many instances they do not evaluate security loopholes and provide appropriate solution and the required staffing to man security duties. Hardly do schools administrators consider the use of internally generate revenue to fund security activities in their schools.
2. ***Incompetence and neglect of duties by security guards:*** Poor performance of routine security duties by security guards across the schools has been identified as one of the major causes of insecurity in schools. Kenneth (2003) in Manga (2019) observed that many security guards in schools do not engage in the primary security duties of patrolling the school environment in the day and by night; guarding of buildings; facilities and infrastructure; intelligence gathering and scouting .In some cases school security guards do not investigate urgent security reports brought to their attention nor do they make tangible efforts to apprehend, detain and hand over people caught in criminal acts in the school to the police for prosecution.
3. ***Misbehaviour of students with diverse characters in schools:*** Most schools consist of students from diverse background, having different training and upbringing which determine their behaviours in school. Sheila (1998) in Manga (2019) highlighted that overcrowding students in school hostels, classrooms, laboratories and vital places in schools could generate conflict in the use of limited resources which could disrupt peace and orderliness. Sometimes when students' misconduct is not promptly punished appropriately, it tends to embolden students to commit more crimes which in turn escalate to cause insecurity in schools. Similarly, Students in most cases lack security consciousness as they sometimes loiter in secluded places alone where they can easily be abducted without notice. Some students do not promptly report suspicious characters, objects or movements that they observe in the school environment and this may threaten the security of the school (Egene, 2001).
4. ***Deficient/ faulty infrastructural school buildings:*** Deficiencies in the construction of school plant may contribute to cause security problems in schools (Manga, 2019). The National Crime Prevention Center (NCPC 2001) in Manga (2019) stated that schools that are not fenced provide easy access to criminals and



other trespassers while school buildings that are not constructed in line with standard specifications may soon collapse causing loss of lives and property. Most schools are porous allowing free and unchecked entry and exit in the school thereby exposing the school to a lot of risks, giving criminal's unhindered access to perpetuate their evil.

Forms of Insecurity in Schools

Insecurity in schools takes different forms and dimension. Some of these forms include:

- a. **Kidnapping:** This is the forceful abduction of school children right within the school premises irrespective of the security arrangements made by the schools. Usually, victims are taken to an unknown destination with the kidnappers demanding for ransom from parents and family members of the victim before they can regain their freedom. Sadly some of these victims would have been molested, harassed and sexually abused before they regain their freedom while some are more unlucky because after ransom must have been paid, they still get killed. Kidnapping according to Uzochukwu (2015), is now the order of the day in Nigeria.
- b. **Terrorism:** Terrorism in Nigeria was orchestrated by widespread activities of the Boko Haram, Islamic State in West Africa, banditry and militant Fulani herdsmen. Consequently, criminal activities of these nefarious groups have created untold security challenges in Nigeria (Unachukwu and Unachukwu, 2021). School children have become a soft target for terrorist who abduct the girls for a variety of reasons which ranges from marrying them off to their comrades, selling them off as sex slaves while the boys are abducted and trained as foot soldiers.
- c. **Rape:** This is the forceful carnal knowledge of children either male or female. This is an act that is usually perpetuated by teachers to students, students amongst themselves, caregivers to students, security to students, drivers to students and even within family members. Rape is not limited to girls these days as young boys have also been molested. The result of these act at times is unwanted pregnancy or death of the victim.
- d. **Bullying:** This also a form of security issue in schools. A situation whereby some students decide to oppress and suppress other student and coerce them into doing or not doing stuffs which are against their wish. Bulling if unchecked could lead to death or serious bodily harm resulting in a permanent physical or psychological scar.



- e. **Gangsterism:** This is an act of belonging to organised gangs of criminals which involves intimidation or violence. A gang usually is a group or society of associates, friends or members of a family having a defined form of leadership and an internal organisation structure that identifies with or claims control over territories in specific communities and engages, either individually or collectively, in illegal and possibly violent behaviours.
- f. **Cultism:** This is a secret society whose membership is not open to everyone. Members of a secret cult usually have a particular spiritual belief that is regarded by others as misguided. They often times make use of dangerous weapons to kill and maim and threaten rival groups or innocent students in order to assert their influence and get undue advantages such as grades, girlfriend/ boyfriend, money and other forms of privileges.
- g. **Armed robbery:** This is an act of forcefully stealing or taking properties of other people without their consent. It is an elevated form of theft that involves the use of lethal weapons to perpetrate violence or the threat of violence / intimidation against a victim. Theft of school properties poses a great security challenge to students and schools.

The Need for Security Education

Al-Sakran (2008) defines security education as “the teaching and learning of the security concepts and experiences necessary to achieve the national security”. It has also been defined as a set of methods, activities, experiences and preventive measures that lead to the protection from falling into the crime of all kinds (Al-Basheer, 2005).

Education is the key to development and environmental sustainability in any nation. To maintain a long lasting culture of peace among citizens for environmental sustainability there is need to provide commensurate security education that will target at inculcating into the individuals the right spirit, awareness and consciousness to protect their environment. In essence, this must fully be integrated at the early stages of life. (i.e. at basic education level) to enable both children and youths imbibe the culture of being security minded (Anyanwu, 2018). Education for safety, which main task is to shape civil society in order to prepare them to counteract threats, is of great importance for improving security from both an individual and state perspective .Acting in this way may not only improve the level of security for citizens, but also improve the stability of the entire country (Wysokinska-Senkus, 2020).

Education for safety therefore is considered a very complex process which should begin from an early age in order to shape appropriate attitudes and behaviours in children and adolescents. The inclusion of security education in the pre-primary and primary school curriculum no doubt has helped familiarize the pupils with all



what security and insecurity entails, give them a sense of awareness of their surroundings, neighbors, friends, relations and equip them with the required knowledge of what constitute security breach and the process of lodging a report to the appropriate quarters when faced with a security challenge.

The aim of security education as posited by Al-Sultan (2009) is the formation of the young people's conscience for the benefit of society through the preparation of an aware and educated generation of security immunity. It seeks to consolidate the prevailing community values that call for the protection of young people (Al-Maliki, 2006), so the importance of security education lies in the protection of individuals and communities to fight against the crimes and accidents, and fortify the students from deviant ideas which affect the different social, psychological, economic and cultural aspects (Al-Shahri, 2010). Having said that, it is also of great importance that children are taught the foundations of basic security education from the home and this is best given by parents /guardians who happen to be the first teachers of any child.

Role of Parents in Security Education

Parents are a reflection that can be seen and imitated by their children in the family (Haryanti and Sumarno, 2014). One of the greatest responsibilities of parents is to safeguard their children and teach them all the needed skills to keep themselves safe from a tender age right from the home. According to Srikandi (2020), the family is the first and foremost educational institution for children according to the family's function in the socialization and education function. The role and influence of parents either biological or adopted in the life of a child cannot be overemphasised. This is because religiously, culturally and constitutionally, they have been saddled with basic responsibilities of promoting and supporting the physical, emotional, social and intellectual development of a child from infancy to adulthood.

Parenting is the process of educating children from birth to children entering adulthood. This task is generally done by mother and father (biological parents). However, if biological parents are unable to carry out care, then the task can be carried out by close relatives including siblings, grandparents, or by institutions such as orphanages (alternative care). Furthermore, care includes a variety of activities aimed at enabling children to develop optimally and be able to survive well, and be able to receive and be accepted by their environment (Astuti, Sugiyatno and Aminah, 2017).

It is pertinent that parents develop an active interest in their children by giving them a listening ear when they seem to have something to discuss with them. Children should see their parents as people they can trust and count on for maximum support always. A parent, no doubt, is the best person to teach children about personal safety. Some of the basic security education tips parents can readily give their children are as listed.



1. The need for boundaries; parents to set boundaries for children in terms of places they can visit, who they can or cannot talk to, and what they can or cannot do.
2. The need to be weary of strangers; children need to be taught from home the fact that not all adults or strangers can be trusted.
3. The need for basic secretarial skills; children should be taught from home how to make simple documentations of events that happen and people that visit the home especially when the parents are not around.
4. The need to avoid sharing personal information without parental consent; personal information such as names, occupation and other sensitive personal information should not be shared with strangers without the knowledge of their parents.
5. The need to memorise emergency phone numbers; children should be able to recall their parents' phone numbers and emergency number which they can call when the need arise.
6. The need to be conversant with the environment; children should be aware of their environments and possible escape route in case of eventualities.

Conclusion

The spate of insecurity in the nation especially those targeted at school children has raised an awareness for all and sundry to be security conscious irrespective of age or gender. The reality on ground is that the government or its agencies alone can no longer be held responsible for adequate security of lives and properties of her citizens. This has therefore lead to the call for security education, a form of education based on awareness of basic security tips and what to do when faced with security challenges. These security challenges faced by school age children ranges from kidnapping, rape, gangsterism, cultism to armed robbery and all of this have a negative impact on the lives of children. Therefore, it has become necessary for parents who are the first teachers of a child from home to inculcate in the children the much needed security education from the home as a complement to what they are taught in schools.

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CHAPTER 13

THE NEEDFUL IN TEACHING PROFESSION: A REVIEW OF NIGERIAN EDUCATION SYSTEM

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Abstract

Quality of education is vital to social and economic development of any country, as it prepares youth to be productive members of the society. Teaching induces instructions and guidance to learners to behave in a certain manner for personal benefit, economic growth and national building. Many graduate in Nigeria who are unable to acquire a job in firms and government agencies chose teaching as a default profession until they eventually get a more lucrative job. The need to professionalize teaching is a necessity which has to be effected in various citadel of learning. There have been many literatures on teaching which have not emphasised the need to professionalise teaching in Nigeria. The aim of this paper is to review the historical and contemporary issues in education, concept of teaching, challenges of teaching as well as professionalism in teaching. Efforts should be made to enhance job satisfaction and develop commitment to improve performance. This can be achieved through different motivational techniques such as training, rewards, discipline as well as provision of adequate facilities for teaching and learning. This paper recommended that government and education stakeholders should provide incentives, conducive learning environment, stable structured policy to guide teaching and effectively monitor the system for proper compliances to stated ethics of the profession.

Keywords: Teaching, Profession, Education system

Introduction

Education concerns the individual and society, as it is a key component of human capital formation that increases productive capacity of people. It is the act of systematic training of the mind, capabilities or character through a systematic



instruction which can lead to availability of skilled human power, high standard of living, low crime rates, national unity and political stability. Education varies widely in forms, philosophy, contents and methods, as there are different societies in the world. Also, education is a life-long process which can be seen as a means of socializing people into the community, for upholding customs and traditions as well as for modification of existing ideologies and reformation (Olawoyin and Ala, 2019).

More so, education could be considered as all-encompassing towards preparing an individual for national development. (Yusha'u and Tsafe, 2013). It creates processes in which individuals acquire many physical and social capabilities needed for societal services and changes (Orobosa, 2010). Any society where the provision of quality education is so pronounced, the possibility of development of that society could be guaranteed. Quality of education is vital to social and economic development of any country, as it prepares youth to be productive members of the society. However, the quality and standard of education in Nigeria has not measured up to expectations by education stakeholders both within and outside Nigeria.

A Review of Nigerian Education System

Formal education started in 1842 at primary level only in Nigeria by the Christian missionaries who managed the education system based on their respective philosophies. The missionaries were the Portuguese, the first European people on a mission to Africa (Muhammad, 2020). The missionary organisations available then include Church Missionary Society, the Wesleyan Methodist, Baptist, and the Catholic. Also, secondary education was established in 1859 and the first secondary school was CMS Grammar School, Lagos (Ezekiel, 2014). In 1872, the British colonial government supported the missionary societies on education system through donations. The British government sulked at any demand for financial incentives to western education until the form of education given to Africans was castigated as inadequate and largely inefficient (Adesina, 1973). In 1882, the colonial government brought a document education ordinance, with the aim of having total control on education. However, the ordinance failed because it was too complex to implement on a Nigerian child because of the curriculum, method and the medium of communication. This led to the provision of another ordinance in 1888 (Ezekiel, 2014).

More foreign teachers were employed, more schools were established and financial encouragements were given to the missions, voluntary agencies and private individuals to establish more schools. After amalgamation, Lord Fredrick Lugard was the Governor General of Nigeria. He set up some new ideas. These ideas form major part of 1916 ordinance. However, the northerners in Nigeria resisted western education either from the colonial government or the missionaries because of their Islamic religion but were convinced by Lugard (Jayeola-Omoyeni and Omoyeni,



2014). The first higher institution was established in 1932 which was the Yaba Higher College, but commenced studies in 1934. Thereafter, the first university college started at Ibadan in 1948 with 104 students. Thereafter, more institutions of learning were created in Nigeria till date

Contemporary Issues in Nigeria Education System

The word “contemporary” describes recent policies and development on issues related to education in Nigeria at the primary, secondary and tertiary levels of education especially after Nigeria became independent.

The introduction of the Universal Free Primary Education (UPE) by the federal government of Nigeria in 1976 to assist more children by increasing their chances of acquiring western education but it created more problems to education system because of limited facilities available and high turnover of children for admission into primary schools. It was characterised with non-existent infrastructural facilities such as classrooms, inadequate sitting arrangements and insufficient teaching facilities (Ezekiel, 2014). However, in September, 1999, Chief Olusegun Obasanjo who was the president of Nigeria established Universal Basic Education (UBE) as a foundation for every Nigerian child of school-going age to have access to free education and acquisition of the appropriate levels of literacy, numeracy, manipulative, communicative and life skills, as well as the ethical, moral and civic values needed for laying a solid foundation for life-long learning. UBE could not achieve its goals because there was increased enrolment in the face of scarcity of resources, inaccuracy of data, financial problem and problem of implementation (Oribabor and Adeyemi, 2012).

Furthermore, in September 8, 1969 during the International Literacy Day, the Federal Commissioner for Education, Wenike Briggs, made efforts to improve Nigerian education system for national unity by introducing 6-3-3-4 system of education. Fabunmi (1986) described the old system of education (6-5-4) as archaic, and that the new system was modern, dynamic and progressive. This implies every individual undergo education training for 6 years at primary level for children between ages of 6 and 11 years, 3 years at the junior secondary level within the age range of 12 - 15 years, 3 years at the senior secondary level at age range of 15 - 18 years, and 4 years at the university level at age range of between 18 - 22 years. The 6-3-3-4 was fashioned to produce graduates who would be able to make use of their hands, the head and the heart (the 3Hs of education). When it was finally introduced in 1982, there had been inputs by various sectors of Nigerian professional community (Omolewa, 1986). However, the 6-3-3-4 system was faulty due to non-availability of human and material resources, finance and culture. This affected implementation of introductory technology, specifically as a subject in secondary schools and other aspect of education which would have formed part of the curriculum. Also, due to



financial challenges, there were no facilities available to cater for learners (Omoyo, 2006).

The post-secondary education existing in Nigeria include colleges of education, polytechnics, and university education. The colleges of education form part of teacher training institutions which are affiliated to universities. They offer three years programme for the award of Nigerian Certificate in Education (NCE). The polytechnics provides middle level manpower and vocational skills in different areas of specialisation. Polytechnics courses are in two phases, each of two years duration leading to the award of National Diploma (ND) and Higher National Diploma (HND). The university is the highest level of tertiary education in Nigeria. Three sets of university exist-namely, the federal, state and private. There are also inter university centres, monotechnic, specialised institutions such as school of Health Technology, Colleges of Agriculture, and National Teachers Institutions (NTI). However, most tertiary institutions owned by the government are faced with the problems of overcrowding, considering the number of applicants and the available facilities. Ogunode and Ahaotu (2021) explained that many graduates of the Nigerian universities are not employable as many cannot defend their certificates. Nigerian universities over the years have lagged behind in the performance of its formidable task due to the nature and dynamics of leadership as well as the political and economic environment of these institution (Ogunode, Johnson and Olatunde-Aiyedun, 2021).

Concept of Teaching as a Profession

Teaching is the ability to assist learners in organising, directing and maximising the stream of developing life experiences. It can also be described as a set of events which are designed to support internal process of learning by an expert in education, known as a “teacher”. Rajagopalan (2019) described teaching as both an art and science. Teaching as an art, emphasised the imaginative and artistic abilities of the teacher in creating a worthwhile situation in the classroom to enable students to learn while teaching as a science described the logical, mechanical, or procedural steps to be followed to attain an effective achievement of goals. Teaching induces instructions and guidance to learners to behave in a certain manner for personal benefit, economic growth and national building.

In Nigeria education system, Nigeria Certificate in Education is the minimum basic qualification for entry into teaching at the basic education level. This came about in an attempt to create uniformity of standards. Teaching at the senior secondary education level requires a bachelor’s degree in education or a single-subject bachelor’s degree plus a post-graduate diploma in education. However, holders of specialized qualifications like the ND awarded by polytechnics can be employed to teach in secondary schools and technical colleges. For teaching in colleges of education, at least a master’s degree is required, while a doctor’s degree is required



for teaching in universities. Lecturers in colleges of education are required to have a teaching qualification, in addition to their degree (International Organisation for Migration, 2014). Teachers' registration council of Nigeria (TRCN) was also established as a professional bodies to legalise teaching as a profession in Nigeria.

Alos (2015) explained that the success of any academic programme is conditioned by the ability of the teacher involved to impact knowledge on the learners. A teacher is expected to teach the content of the lessons, and be prepared with the required resources and proper materials. Also, a teacher is an individual who stimulate learners to acquire knowledge, skills and virtues. Teachers form greater force in achievement of academic goals, hence, a high level of expertise and competence is required from teachers while performing their duties. This level of expertise relate teaching method to professionalism.

Hoyle (2001) described professionalism as improvement in the quality of service rather than enhancement of status. Sachs (2003) considers professionalism in teaching issue as a political and social strategy to promote the status of teaching profession. Teaching profession is a fundamental requisite for social and economic development of any country. Therefore, it is expected of a teacher as professional to acquire correct, relevant and appropriate information from reliable sources of training and be a member of an extensive body of knowledge. However, in this twentieth century, teachers are not trained as expected. Many graduate in Nigeria who are unable to acquire a job in firms and government agencies chose teaching as a default profession until they eventually get a more lucrative job. If and when the expected job is not gotten, they become frustrated and no longer committed to teaching (Akorede and Adigun, 2012). Professionalism requires adhering to professional conduct. This implies that graduate who are not trained as teachers are not expected to teach the learners. A teacher is expected to have obtained a specified professional qualifications from TRCN and credentials from the faculty of education in a university or college of education.

Oladunmi (2010) observes that students in schools today are not performing well in their academic activities as expected of them. Quality education in the country would forever remain a mirage if education sector is lacking adequate professionals and experts in all its spheres to man the sector very well. (Yusha'u and Tsafe, 2013). The entire society could be affected if these teachers are properly, professionally and educationally trained and regarded as a separate field for only experts in education.

Attributes of Professionalism in teaching

The following are the attributes that professionalised teaching

1. *Rendering essential social services.* Education prepares individuals for various career. Also through education, service of helping individual to be fully



socialised and integrated into the modern society is achieved through formal education, it prepares individuals for various occupational roles.

2. *Body of specialised knowledge.* It requires a specialised method and knowledge to impact learners which only a trained teacher can do.
3. *High degree of autonomy.* Teaching is self-regulating and self-governing and inter-dependent. Teachers understand their roles and responsibilities. They express and practice the way he feels best in the interest of the profession.
4. *Code of Ethics.* Teachers Registration Council of Nigeria (TRCN) and Nigeria Union of Teachers (NUT). TRCN and also designed to instill, preserve and update the knowledge and professional standard on teachers, and to set a code of ethics to regulate the conduct, license and accreditation of teachers. NUT was set up to improve the economic conditions of teachers, protect their interest and to raise the status of teaching profession through improved quality of education and condition of service.
5. *Promoting service above private achievement.* Teaching as a profession do not benefit and other financial gains above their service to the public.
6. *Public recognition.* For teaching to be fully recognized as a profession, teachers are expected to exercise a high level of self-esteem and self-satisfaction for them to be recognised by the public.
7. *Unique Standard.* Schools and institutions of learning are expected to meet up with the set standard to be fully recognised and registered. Effort should be made to supervise various schools to ensure conformity to the standard provided.

The contributions of teachers to quality of education in Nigeria are numerous. Teachers contributes to skills and knowledge acquisition of learners. Fafunwa (1972) explained that the services of teachers to a nation are more than any other professional group as they influence the lives of youth, therefore contributing to national development.

Challenges of Teaching as a Profession

The challenges of teaching as a profession are explained below

- i. *Inadequate funding:* Education sector is poorly funded by government. Ogunode (2021) explained the breakdown of ten years educational budget in Nigeria. This revealed that annually allocation for the entire educational sector fell below the UNESCO 26% recommended for education in the developing Countries. Ogunode and Madu (2021) stated that in 2010, 2011, 2012, 2013, 2014, 2015 had N293bn (7.19%), N393bn (9.31%), N453 (9.15%), N499 (10.15%), N494 (10.54%), N434 (10.71%) and 2016, 2017, 2018, 2019 and



2020 with N4.31 (7.52%), N551 (7.41%), N605.8bn (7.04%), N620.5bn (7.02%) and N671.07bn (6.7%) the budgetary allocation for education for ten years is below the UNESCO 26% recommendation for education. In Nigeria's N17 trillion 2022 budget signed into law at the end of 2021, 7.2 per cent is allocated to the education sector. This gives the impression that education is insignificant to the government. Ogunode (2020) established that many higher institutions in Nigeria are underfunded and this is affecting the performance of the institutions. Also, most public funds are diverted to other sector of the economy such as sports, transportation among others while little or no attention is given to education sector. This has reduced the numbers of qualified teachers in education sector, inadequate teaching materials, shortage of classroom and poor remuneration of teachers among a host of other problem in various schools and other learning centers (Olabiyi and Abayomi, 2010).

- ii. *Indiscipline*: This is common among teachers, learners and other education stakeholders. It includes examination malpractices, cultism, forgery of certificates, bribery and others forms of unruly attitudes within and outside the school.
- iii. *Unstable Curriculum*: There is no standard process to manage teachers in covering outlined curriculum at a specified session. This has affected most learners who have been assumed to have learnt an aspect of the school curriculum, when in reality have not been taught. Also, there is frequent changes in policy and management system of education in Nigeria.
- iv. *Exploitation of Teachers*: Most teachers are being exploited especially in private schools. This has resulted to annual mortality rate of over 100,000 workers in Nigeria in past few decades. This is as a result of allocating more courses or subjects to a teacher at a specific time frame and other responsibilities aside classroom. This makes teaching work demanding and also affect the output of teachers to the students (Kalejaiye, 2013)
- v. *Instability of Staff*: This is as a result poor salaries given to staff who keep eyes on other profession and resign at any slightest opportunities. Kwesi (2013) affirmed that poor remuneration affects stability of staff. Teachers work and expect some incentives at the end of the month to sustain them. A staff with poor morale will be less committed to work. Monthly salaries have been the biggest issue for teachers in Nigeria in recent times. Also, new and well-paid jobs attract employees and lure some teachers to leave their former teaching jobs and think of other benefits as substitute for their present salaries, they are willing to exchange wages for more benefits (Shamsuzzoha and Rezaul, 2012). Low turnover rate have impact on job related attitudes among teachers in the



institutions (Dixet and Bhati, 2012.). Most teachers are not having job satisfaction and because of this are unstable in the profession.

- vi. *Inadequate qualified Teachers:* Teaching in Nigeria has been patronised by graduates who could not succeed in their chosen vocation and people who believe that teaching is a ‘spare times job’ that allows them to simultaneously engage in other profit making business which they considered more lucrative than teaching (Yusuf and Oyetayo, 2014). It is expected that, teachers who are employed, are the type that have passion for teaching. This will create an atmosphere of constant job satisfaction. Also, Ogunode, Johnson and Olatunde-Aiyedun (2022) established that most public secondary schools in Nigeria do not have adequate teachers especially in the science programme and that many higher institutions are short of academic staff.
- vii. *Inadequate infrastructure:* Expected infrastructures includes well equipped laboratory, standard library, spacious classrooms and staff rooms among others. Owoeye and Yara (2011) described availability of facilities as a significant factor in teaching and learning sphere. Factors such as temperature, ventilation, hygiene, working hours and resources are all parts of working conditions that will result in greater physical comfort and convenience of teachers. The absence of such working conditions amongst other things can impact poorly on the teachers’ mental and physical well-being (Ajala, 2012). Also, Gamoran (2011) described availability of facilities as prerequisites to students’ achievement. Unfortunately, most schools are deficient of these facilities.
- viii. *Corruption.* This is a major problem in Nigeria especially in education sector. It is caused by disorganization of expected standards leading to examination malpractices, diversion of funds, and embezzlement among others,
- ix. *High teacher-pupil ratio:* National Policy on Education 2013 stated that primary school teacher-students ratio is 1:25, secondary schools teacher-students ratio shall be 1:30. At the higher institutions especially the universities, the National Universities Commission Benchmark Minimum Academic Standards (BMAS) of 2007 stipulated teacher/students ratio: 1:20 in science; 1:15 in Engineering and technology; 1:10 in medicine, veterinary medicine and pharmacy, 1:15 in agricultural and environmental sciences and 1:30 in education, management science, social sciences, law and arts. However, this is not applied in the present education section in Nigeria. Unattractive school buildings and overcrowded classrooms among are common in most government schools and higher institution. This contribute to poor academic performance and reduce the effects of professionalism in teaching profession. Educational facilities should be located in appropriate places at the reach of learners.



- x. *Poor parenting and guidance:* Parents are expected not to leave education development to teachers alone. Adolescent from broken homes are usually associated with anti-social behavior and poor academic records (Animashaun, 2011). The problem of deprivation of proper parenting, care and monitoring affect most learners psychologically. This gives the teachers double responsibilities and sometimes frustrates their efforts, as most learners do not respond effectively. Children from in-tact homes have positive influence on the school, unfortunately, the school is a mixture of both.
- xi. *Low wages, poor motivation and welfare.* Bogle, Saklofske, Mathew (2015) describe motivation as the ability to please others and avoid disapproval. Motivation can be in extrinsic and intrinsic form. Extrinsic factors include; staff salaries and fringe benefit allowances, workload or challenging task and safety while intrinsic factor include; promotion, job satisfaction and career advancement or training and development. Teacher are builder and molder of students. However, most teacher are poorly paid, not regularly promoted and sometimes, cannot measure up with their counterpart in other areas. Also, teachers in Nigeria are not benefitting from most motivational factors.
- xii. *Inadequate training and development.* As the nation is developing in areas of technology and other areas of the economy, most teachers in Nigeria are not exposed to regular training after certification. This makes teachers redundant and as such, are not exposed to modern method of teaching to capture the minds of the learners. The effect of training and development of teachers' performance forms an important aspect of motivation and improvement in the quality of teaching process. This gives teaching profession a prestigious adventure. However, this has been neglected in Nigeria education sector.

Recommendations

The following recommendations were made to make provision for the needful in teaching profession;

- i. Government, proprietors, head teachers and other education parastatals should workout incentive packages to increase staff remuneration to change poor public image of teaching as a profession and staff stability.
- ii. Administrators of schools should treat teachers well through provide adequate compensation for workers in the best interest of the institution . Teachers should be given attractive salary sufficient enough for maintenance of their standard of living



- iii. There should be training and retraining of staff while the educational policy guidelines of teacher- student ratio should be strictly adhered to, for effective teaching and learning.
- iv. The high level of corruption prevalent in education sector should be checked to ensure that funds meant for capital expenditure in the sector are judiciously appropriated
- v. Head teachers, proprietors and other stakeholders should be more concerned about the overall long-term development needs of teachers. This implies that they need to establish a good working relationship with teachers. This is to create avenues for effective communication.
- vi. The condition of service of teaching as a profession must be attractive and opportunities must be provided for professional growth of teachers.
- vii. Efforts should be made government to put teachers in the same footings with other highly valued professionals in Nigeria.
- viii. Proprietors, Government and Head teachers should make provision for conducive environment for teachers and learners.
- ix. Efforts should be made to recruit only teachers who actually possess a certificate of training in education from various institutions of learning and a registered as members of teachers Association of Nigeria (TRCN). This is to enable educators in recruiting staff who have passion or the profession.
- x. Efforts should be made to enhance job satisfaction among teachers. This will develop commitment and improve performance where necessary. This can be achieved through different motivational techniques such as, training, rewards, emoluments, discipline as well as provision of various facilities for teaching and learning.
- xi. The school curriculum needs to be updated and monitored regularly.
- xii. Administrators of schools needs to critically put into place, measures to check corruption and indiscipline in the school system.
- xiii. Regular training of staff in conferences and seminars should be provided to enhance exposure and motivation of the staff in various schools.

Conclusion

The need to take teaching as a profession is a necessity and has to be effective in various citadel of learning. National Union of Teachers (NUT), Teachers registration Council (TRCN) has contributed positively in making the profession a reality by setting standards, registration of teachers, accreditation, certification, promotion, development, discipline, regulating the practice of teaching as a profession and



protection of teachers' welfare. This is achieved also by directing teachers to obtain a license from TRCN as a condition of service in teaching making teachers compulsory members of NUT.

Also, with the current universal basic education system in Nigeria (6-3-3-4 system) education stakeholders need to do the needful in teaching to be a standard profession by focusing attention on teachers motivations, stability of staff, training and development of teachers, provision of adequate facilities in the school environment, recruiting qualified teachers, enforcing discipline, funding of education system among others to improve the standard of education.

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CHAPTER 14

TEACHER EDUCATION IN THE 21ST CENTURY: 'NEW NORMAL' TEACHING – LEARNING AS NIGERIA EDUCATION PARADIGM SHIFT

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Abstract

There is no gain say the fact that despite the veracity of the challenges bedeviling the whole world owing to the deadly pandemic tagged 'Corona Virus' (COVID-19) that keep charging forward by day in reducing human health to hazardous state manifesting in different variants such as 'Delta variant'; 'Omicron', human beings as higher animals characterized by instinct are by day making efforts at curtailing it through a number of activities. The ensued situation arising from the health challenges of the ravaging COVID-19 and some other life-threatening issues globally cannot be over-emphasized, corollary of which is finding alternative to existing practices in all facets, education inclusive. By implication, instructional delivery and Teacher Education generally are always at the receiving end of the evolving 'new normal' which is a global phenomenon. Since the lofty potentials of education cannot operate in a vacuum but must be driven by human and other associated resources and activities, the issue of Teacher Education (TE) and Teaching-Learning Process (TLP) cannot be over-emphasized as the pivot of educational goals and objectives attainment. Thus, efforts should be geared towards ensuring acceptability of eventual merging of face-to-face (F2F) instruction, Open distance and electronic learning while 21st century teachers must be 21st century compliant through changes in their orientations and be fitted to technology and its acquisition as against the usual F2F characterizing TLP. Again, utilization of available facilities such as phone, radio that may not require 24/7 electricity supply but feasible for sending simple video, make recordings for radio broadcast, study kits as well as high technologies in urban areas need be vigorously pursued to enhance TLP and TE in the 21st century.

Keywords: 21st Century compliant; New normal; Teacher Education; Teaching-learning process; Paradigm shift



Introduction

Education remains the solution to every lingering and emerging societal problems, it is therefore imperative that for the nation's education to produce global citizens and be relevant in the comity of other nations, it has to key in into the current global slogan of 'new normal'. Doing this successfully calls for effective and efficient educational activities, driver of which is effective Teacher Education (TE) and Teaching Learning Process (TLP) furbished with the 'new normal' and global best practices which is akin to the achievement of 21st Century compliant TE. To achieve the aims and objectives of education generally, a number of activities are involved. One of such basic activities is the issue of TLP. The success of the process also depends largely on a number of factors, prominent among which are the teacher, the content or subject-matter, the learners, the learning resources, learning environment, time, among others.

In consonance with the foregoing, Fahad al-Qudah (2006) asserts that, if a nation is successful in educating its people to become strong and complete individuals, such nation stands a glorious future, promote peace within its boundary as well as defend its sovereignty, but if reverse is the case, such a nation is a bunch of weakness, destruction and obscurity. The same view was expressed by Adesina in EKpo and Is'haq (2014) that education constitutes a potent tool of integrating individual effectively into the society for the purpose of achieving self-realization; developing national consciousness; promoting unity as well as striving for social, economic, political, scientific, cultural and technological process. All these are essential in the new dispensation. This explains why Omolewa (2019) averred that education is generally recognized as the key that opens all other levels and tiers of education and the foundation on which other levels and tiers of education are built (p.3). This further attested to the National Policy on Education, (NPE, 2014)'s proclamation that 'no nation can rise above the level of her education'.

As enunciated by Ajiboye (2021), since change paradoxically remains constant in all endeavours, it therefore becomes imperative for the education sector adjudged the magic wands that unlock development in all facets to dance to the new normal tune. Realizing the foregoing is a product of efficient and global best practice TE and TLP. The paper therefore addresses among others, TE, TLP and emerging health challenges; TE, TLP in retrospect; New normal teaching-learning potentials for 21st century TE in Nigeria; Conclusion and suggestions.

Teacher Education, Teaching-Learning Process and Emerging Health Challenges

In spite of the veracity of the challenges bedeviling the whole world arising from the deadly pandemic tagged Corona Virus (COVID-19), human beings as higher animals



characterized by instinct are by day making efforts at curtailing its exigencies through a number of activities. In realization of the foregoing, Adeniran (2021) asserted that human beings differ significantly from other creatures through the possession of rationality, the most distinctive feature. Thus, transformation of the natural environment is made possible via human ingenuity and the concomitant attainment of humanity's wellbeing. The most prominent here is the issue of research, a product of education. This thus corroborates the popular Chinese saying, 'everything that is bad, throw it to school'. Summarizing the value-laden nature of education especially in an emergency time, Ojedokun and Ajiboye (2020) and FGN (2014) submitted that:

The climate of education is expected to provide opportunities for the people to be aware of their nation and the global world; make them acquire skills and competencies to function for the good of all; and to make them develop the right type of value and attitude that can make each person and the society to survive, even at the most difficult time (p.1).

The foregoing among others, speaks volume about the place of education in all ramifications, new normal dispensation inclusive.

It is instructive at this juncture to state that the lofty potentials of education cannot operate in a vacuum, rather, it must be driven by human and other associated resources and activities. This is where the issue of TE and TLP becomes imperative since they constitute the pivot of attainment of educational goals and objectives. Without mincing words, TE as the name implies has to do with all efforts at procuring quality personnel capable of driving the goals and objectives of education for national and sustainable development. It entails a sort of education that a would-be teacher is subjected to in bringing out the best in such personality and to make them fit for the teaching learning task. This account for Priven's (2010) submission that effective education is a function of effective teaching which invariably is a function of qualified teachers. Thus, TE according to Ajiboye (2021) is an organised institution put in place to ensure professional training of teachers, it entails policies and procedures specifically designed for equipping the would-be teachers with needed knowledge, attitudes and skills expected of them in carrying out their TLP tasks as well as those related to the society.

In apparent presentation of a practical illustration of the import of TE, Cavanagh (2019) recounted thus:

This is where I had found myself - I am currently grappling with my PhD in Education. I am a teacher at a University of Technology where I teach Fashion Design. I come from a practical background, trained in and now teaching a professional discipline which focuses on practical skills. Becoming a PhD scholar requires me to move into scholarly and theoretical way of thinking, yet I found myself unprepared for the



demands of a PhD in Education, unable to merge theoretical nature of the PhD with the practical nature of my discipline (p.1).

Such a sincere down-to-heart confession is an attestation to the import of TE as driver of quality education and effective TLP generally which thus calls for professionalism of teaching career.

Among others, for TE to be able to stand tall in the midst of other professions, a number of goals are imbued. Prominent among such are: production of highly motivated, conscientious and efficient classrooms teachers at all levels; encouragement of the spirit of enquiry and creativity among teachers; helping teacher to fit into the community and societal social life as well as enhancement of teachers' commitments to national goals; provision of teachers with both intellectual and professional background capable of making them perform their task and to ensure their adaptability to any changing situation within and outside the shore of the country; and to enhance teachers' commitment to the teaching profession (Federal Government of Nigeria, FRN, 2014). Succinctly, the said goals are tangential to the attainment of the latest global development agenda of SDGs and most especially, SDGS-4 and Education 2030 Agenda as well as African continent's adaptation of Africa Education 2063 Agenda. Attaining the lofty goals of SDGs therefore hinges on effective TE and TLP altogether.

Education programmes actualisation has many phases and components. Basic in such components is the instructional delivery which usually takes place between at least two or more people consisting of two prominent parties of the 'giver' and the 'receiver', trainer and trainees, teacher (s) and learner (s) as the case may be, action of which translates to teaching-learning process (TLP). From all indications, TLP therefore entails all learning activities taking place in an organized space which may be physical or abstract, it involves a learning experience where TLP is made complete with all parties involve such as the teacher, learners, subject-matter, time frame, place context and other aiding resources. UNESCO (2014) conceived TLP as that which entails organized space where systematic and intended competencies to be acquired by learners are dole out inform of organised learning experiences which may take place in formal and informal settings.

More so, TLP in the words of Li and Oliveria (2015) connotes the dynamics of all the necessary multiple agents that makes organized teaching-learning to take place coupled with their interactions with the system of the classroom. This is the more reason why TLP has been described as a vital aspect of instruction (Adeoluwa, Adeyi and Oyewale, 2019). It is a system with multiple agents that interacts to ensure effective delivery of instruction. While describing teacher preparation modes in Nigeria, Oduolowu (2020) classified them into pre-service and service training characterized by traditional F2F instruction. This constitutes a form of TLP.



Teacher Education, Teaching-Learning Process in Retrospect

Literature abounds on the situation of the way and manner by which TLP is being carried out in many Nigeria schools, all pointing to unsatisfactory state of such practices and non-global best practices compliant. For instance, it was the contention of Okoli, Ewor and Ugwunba (2014) that education which is the most appropriate weapon of national development in Nigeria calls for revolutionary overhauling in the 21st century if it is expected to pave way for quality teachers, discipline, professionalism, pedagogy reward and dignity as well as matching up with international standards. Such standard, to a large extent, constitute the all important paradigm shift which revolves round the 'new normal' in vogue globally in the present dispensation. Writing in the same vein, Starc, Rodica and Konda (2015) adduced that numerous nations of the world succeed in developing highly efficient system that fosters development within the purview of modern educational methods, form of teaching and organisation that promotes fast accumulation of knowledge and skills.

Articulating the efficiency of the 'new normal' in TLP, The FGN-NBE (2012) has earlier reiterated that the socio-political and economic changes pervading the global community also have their tolls on the educational goals. Thus, it is imperative that schools should equip learners with basic knowledge of content and higher cognitive skills, hence, the need to move from the behaviourist method of direct teaching to constructive instructional methods (Oladiti and Ajogbeje, 2019). They went further to observe that achieving Education 2030 Agenda in Nigerian schools considering the present situation, will require enormous efforts requiring the development of global best practices in the TLP. It therefore follows that TLP in the present dispensation is not an affairs for every Tom, Dick and Harry or business as usual.

Salawu (2021) presented a practical illustration of the impact of COVID-19 saga on education and general endeavours in many African countries culminating in 'new normal' begging for a review of TLP. He submitted that findings from several studies on the impact of COVID-19 on children education in African countries such as Human Rights Watch between April and August 2020 in some African countries across Burkina Faso, Cameroon, the Democratic Republic of Congo, Kenya, Madagascar, Morocco, Nigeria, South-Africa and Zambia indicated that school closures, occasioned by the COVID-19 pandemic exacerbated previously existing inequalities and that many children received no education after school closed across the continent in March 2020. Such a situation calls to question the nature of most African countries' TLP.

Furthermore, UNICEF's Coronavirus (COVID-19) Information of March 20, 2021 under the caption, 'An empty classroom in Cameroon' affirmed that millions of children worldwide continue to face disruptions to their education due to COVID-19.



It therefore warned that government must spare no efforts to reopen schools and keep them open. This is a further indication of the decay in the nation's education and TLP begging for 'new normal' to redeem the image of education and the attendant paradigm shift.

New Normal Teaching-Learning Potentials as Paradigm Shift for 21st Century Teacher Education in Nigeria

The Biblical injunction, 'there is nothing new under the Sun', is an affirmation of the fact that change is as old as existence itself occasioned by human beings in turning around God's initial plan in the beginning. As such, a number of advancement in technology arising from knowledge explosion and the associated rapid development of Information Communication Technology, ICT culminating in globalization and the attendant posture of the global world as a global village is not without associated change. Thus, paradoxically, the main thing that is permanent in life is change itself, hence, change = K , where k is constant. Consequently, arising from the fluids of realities confronting human beings, society, nation and the global community has resulted in untoward changes. Since to be relevant especially in the comity of others, nations inclusive, there is every needs to be change compliant, corollary of which is the current vogue, 'new normal' occasioned by the outbreak of the Corona virus in late 2019 and pronounced pandemic by the World Health Organisation, WHO as far back as March 2020.

It is in consonance with the foregoing stance that virtually, the whole nations of the world put up a new look, attitudes, structures, new ways of doing things generally among others. Examples in this stance abounds starting form dressing pattern of kitting up in containing the spread of Covid-19. Hence, some sensory organs are compulsorily shielded such as mouth, nose, eyes and other parts of the body through such things as the use of nose mask, face mask, mouth cover, face-shield, the use of hand gloves. Other traces of the new thing is the health-related issue in terms of personal hygiene such as sneezing and coughing into one's armpit, washing of hands under running water, the use of hand sanitiser, physical distancing, avoidance of crowded area, vaccine, running of COVID-19 test, to mention but few. These and many others in different aspects of human endeavours culminate in 'new normal' slogan, education activities inclusive. All these do pose great challenges to effective TLP and TE in Nigeria which thus calls for global compliant of incorporating 'new normal' ideas, strategies, to mention few in the classroom in finding recourse to the said challenges and to be a force to be reckoned with in the global community.

Berating the societal image of teaching as a function of the image of the teacher in the current dispensation, Ajiboye (2021) advocated for re-profiling and re-branding teachers as part of all education development initiatives since no nation's



educational system can rise above the level of its teacher. Thus, to him, to achieve quality teachers requires finding answers to a number of pertinent questions such as what education does the modern world requires? What teaching can best promote this education? Who should undertake the teaching? These questions are not by any means rhetoric but rather, basis of ‘new normal’ and paradigm shift in TLP and TE at large.

In like manner, the relevance of Computer Assisted Instruction, CAI to the ‘new normal’ TLP is obvious in the description of CAI by Onasanya, Daramola and Asuquo (2006) and Suleman, Hussain, Ud-Din and Igbal (2017) as containing a blend of graphs, texts, sounds, and videos that can be employed in the TLP. Such usage requires designated learning space which may not necessarily be physical as obtained in the F2F TLP of the past. Chatlani (2017) subscribed to the foregoing by stating that learning in the modern world requires more creative, hands-on and flexible forms of teaching, corollary of which is ‘new normal’ in TLP in the present time. Similarly, the place of ICT in the ‘new normal’ cannot be overemphasized owing to its significant contribution to effective TLP.

Reiterating this fact, Wong, Li, Choi and Lee (2008) reported that through ICT, teacher are able to share a vision of enquiry and collaborative learning and makes it easy for teachers to work together and by so doing, creating a new learning experiences for the learners. This is akin to ‘new normal’ TLP. Taking position with ‘new normal’ TLP, it has been established that there is the need for innovation and innovative TLP arising from developments globally and the associated rapidly changing knowledge with today’s children digital natives and the concomitant expansion in the access to information that is sustainable development driven (Adeoluwa, Adeyi and Oyewale, 2019).

In consonance with the stance of UNESCO (2017) on modern learning, technology usage in TLP and TE as a whole, the use of social media as impetus of effective TLP in the ‘new normal’ has been canvassed. Social media constitute all forms of digitalised equipment that can be employed in transmitting information both within and withal, remote and far distance within a shortest possible time. It entails all aids that are employed to facilitate interconnectivity among and between individuals, groups as well as the global world. In the words of Oyewo, Bello and Alayande (2015), social media is a form of new digital technology which contains all computer- mediated systems that are being enhanced by facilities such as internet and satellite technology. It constitute a new forum responsible for bringing people together for the purpose of exchanging ideas, connecting with, relating to, and mobilising for a cause coupled with seeking advice and offering of guidance.

Bringing out the proclivity of social media for effective TLP especially in the new normal, Baran (2013) advised that because social media platforms are characteristics of ease of access, has primed their contents among the users who are mostly youths. Little wonder, Olasedidun and Ganiyu (2019) described social media platforms as technologies that facilitate social interaction that ensures collaboration



and deliberations across stakeholders. Giving vivid description of social media platform that earned its relevance in the 'new normal', Lade (2013) identified among others, the use of self-learning packages, interactive CDs, chips, satellites, radio, optic fiber technology, teleconferencing system as well as all types of computer hard and software including telephone, telex, fax, radio, TV and video as well as computer-based technology such as electronic data interchange and e-mail. All these are potent tools of upgrading TLP in the 'new normal'. Babayemi and Oyebami (2018) corroborated the foregoing by reporting that significant relationship exists between network sites usage and students' study habit. Most students visit social networking media for academic purposes with Facebook topping the list of the most commonly used social networking media.

Conclusion and Suggestions

The imports of ICT in instructional delivery with learners owing handsets as well as unlimited access to the internet with concomitant implications for TLP have been canvassed. However, it is instructive to state that the regulation of the use of such technologies is imperative to avoid unnecessary distractions and diversions. Submitting to the foregoing, Salawu (2021) advanced that efforts should be made in allaying ICT resistant staffs' fear who are of the view that technology application would render them jobless is not true since human beings are the drivers of technologies in most cases. Hence, it is expected that leaders at institutional levels should be ready to accept more than ever, the reality of integrating ICT and its accompanying facilities to education, TLP inclusive. Furthermore, efforts should be geared towards ensuring acceptability of eventual merging of F2F instruction, Open distance and electronic learning. This is in consonance with Oduolowu's (2020) view that 21st century teachers must be 21st century compliant through changes in their orientations and be fitted to technology and its acquisition as against the usual F2F characterising TLP. As such, among others, utilisation of available facilities such as phone, radio that may not require 24/7 electricity supply but feasible for sending simple video, make recordings for radio broadcast, study kits, to mention a few, while in urban areas, the avalanche of high technologies prevalent should be utilised. All these are necessary inputs for TLP repositioning in the 'new normal' TE to engender the required paradigm shift in Nigeria education as a whole.

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CHAPTER 15

CONSTRAINTS OF E-PROCUREMENT IMPLEMENTATION ON PRECONTRACT TENDER PERFORMANCE OF NORTH-CENTRAL NIGERIA CONSTRUCTION PROJECTS

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and

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Abstract

The increasing lack of expected growth in the usage of e-procurement system has exposed Nigerian construction procurement process to fraud, corruption and all forms of anomalies now inherent in the Nigerian construction industry procurement system. The situation has thus, undermined the integrity of the procurement process especially at the precontract stages. This study therefore, assesses the constraints militating against the implementation of e-procurement system in the Nigerian construction sector. The research methodology involved qualitative approach in which primary data was retrieved using semi-structured questionnaire of which 303 numbers were properly filled and returned out of the 384 numbers distributed for this study thus, representing about 79% return rate. The method of analysis involved descriptive statistics comprising percentages, frequencies and mean scores. The result revealed the top-most real users of the e-procurement system in Nigeria as- supply chain manager/procurement officers, contracting firms, and building materials manufacturer/vendors with mean scores of 4.02, 3.99 and 3.95 respectively. Consequently, the top-most constraints militating against the adoption of e-procurement system includes lack of supportive ICT Infrastructure, inadequate computer-literate construction stakeholders, and lack of awareness of the benefits of e-procurement system with mean scores of 4.79, 4.65 and 4.56 correspondingly. The study concluded that despite revealing the actual users of e-procurement system in Nigeria to be supply chain manager/procurement officers, contracting firms, building materials manufacturer/vendors as the topmost users, not all of them in the wider scope of users, actually uses e-procurement system to its maximum benefits, owing to insufficiency of supportive ICT infrastructure, lack of adequate computer-



literate construction stakeholders, and lack of awareness of the benefits of e-procurement system in Nigeria. This study therefore recommends need for sufficient ICT infrastructure support by e-procurement stakeholders, increased level of computer literacy of construction stakeholders, and creation of a robust awareness on the benefits of e-procurement systems in Nigeria.

Keywords: *E-Procurement, Implementation constraints, North-Central Nigeria, Construction projects, Pre-Contract Tendering Performance.*

Introduction

The innovativeness of information and communication technologies (ICTs) explored the unique characteristics of the construction industry to produce e-Procurement systems. Characteristics such as large volumes of paper works, life-cycle process of the construction activities, and large number of project stakeholders ensure that the e-Procurement tool can find footing in the construction industry (Nuru and Mousonda, 2021). The presence of ICTs in the construction industry has helped professionals to create a competitive niche in their activities compared to their traditional counterpart. Notably, the introduction of the Internet has been harnessed to solve productivity issues and bridge the supply chain of many contractors in the construction sector (Afolabi, Ibem, Aduwo, Tunji-Olayeni and Oluwunmi, 2019).

Procurement is among of the major aspects of an enterprise to improve construction management and hence construction performance. The introduction of the Internet has introduced e-procurement system hence changed the way procurement is done (Gurakar and Tas, 2016). E-procurement generally refers to the use of electronic communications and transaction processes to procure supplies and services or conduct tendering for construction works (Bauasa, *et al.*, 2013). However, several factors have affected the implementation of e-procurement system in different countries of the world.

Despite the importance attached to the implementation and usage of the e-procurement, there remains existing challenges as to its implementation in developing countries (United Nations, 2013). Bello and Iyagba (2013) ranked prevention of tampering with document as the highest challenge militating against e-procurement adoption in UK. The challenge of e-procurement adoption in Europe and Korea is affected by the contractors' general unwillingness to participate in e-procurement (Chong, Man and Kim, 2018; Gasco, Cucciniello, Nasi and Yuan, 2018).

Daud, Mohammad, Azmi and Mohamed (2013) argued that the individual's intent was the crucial attribute affecting the implementation of e-procurement among Malaysian construction firms. Corina (2011) posited management constraints, organization constraints IT constraints and user constraints as challenges affecting the



implementation of e-procurement system in. Patel, *et al.* (2016) pointed out that budgetary allocations and employees' knowledge base in managing e-Procurement technologies are the critical challenges affecting e-procurement implementation in India. Teo, *et al.* (2009), opined that the superficial gains from using the e-technology and external influence such as the people working with the organisation are the top challenges militating against the adoption of e-technology in Singapore. Success of public e-procurement implementation is influenced by participation of contractors was also noted in India (Lewis-Faupel *et al.*, 2016). Amarapathy, *et al.* (2013), denote the causes: uncertainty to the legal position, poor Information Technology (IT) infrastructure, costly IT system applications, lack of e-procurement knowledge of staff and their technical skills, indistinct supplier integration, cultural issues such as resistance to change and poor leadership and security issues are the challenges to the implementation of e-procurement in Sri Lanka. Moreover, obstacles concerning cultural, IT Infrastructure, security, legal, compatibility, personnel, and economic dimensions are predominantly influenced for e-procurement implementations in Saudi Arabia (Al-Yahya and Panuwatwanich, 2017). In South Africa, Laryea & Ibem (2014) explained the major inhibitors to the partial utilisation of e-Procurement systems in the construction sector are mainly attributed to policies, reliability, cost, and impact on small firms including employment of construction stakeholders. In Kenya, Obat (2016) identified key areas of internet, supplier, and change as the challenges affecting e-Procurement integration in the construction sector in Kenya and argued that the internet services must be reliable for e-Procurement process to be effective.

Bello and Iyagba (2013), ranked the lack of a national IT policy relating to e-procurement issues as the top factor challenging the implementation of e-procurement in Nigeria. Gambo, *et al.* (2019) posited the lack of training on the adoption of e-Procurement techniques, unreliable Internet and telephone connectivity, lack of clear understanding of e-Procurement technologies and security as the highest challenges affecting e-procurement implementation in Nigeria. The existing published articles have explored the adoption of e-Procurement in general (Victor and Richard, 2015; Mohammad, 2015; Sammy, *et al.*, 2016; Adedeji, *et al.*, 2019), while others have assessed the constraints to the adoption of e-procurement (Robert, *et al.*, 2007, 2010; Ibem, *et al.*, 2016), the needs and benefits (Laryea and Ibem, 2015; Nawi, *et al.*, 2016; Akpehe, 2016; Nazima and Vani, 2017), risk associated with e-Procurement in construction (Makoba, *et al.*, 2017; Hussaini and Ibrahim, 2021), stakeholder's perception of risk factors in the adoption of e-Procurement in the Nigerian Construction Industry (Gambo, *et al.*, 2019). Little has however been done on the constraints militating against the implementation of e-procurement system in the Nigerian construction sector. This study therefore, assesses the possible actual users of e-procurement as well as the constraints militating against its implementation in Nigeria.



Literature Review

Challenges with the Current Paper-Based Procurement System in Nigeria

McConnell (2010) summarised the problems of the paper based procurement system into four broad unique themes, namely: technology, process, people and compliance. Technological problems arise primarily as a result of limited use of technology solution in the traditional procurement process. These problems include: poor data quality, and absence of data harmonisation. Process related problems include: slow manual processing, slow transaction processing, large volume of paper generated, increase handling errors, complicated procedures, difficulty expediting delivery, and many more. People related problems have overwhelming influence on technology and process related problems regarding the efficiency of every procurement system (McConnell, 2010). In recent years, limited progress has been made in reforming the public procurement system. However, the reforms were considered inadequate and shortcomings persist (Ajibike, 2019). The operation of the Public Procurement Act (PPA) in Nigeria is faced with the following challenges: size and complexity of procurement, political interference by the executives, shortage of public procurement practitioners, extensive corruption, faulty implementation, complexity of procurement regulations, meeting the expectations of stakeholders, incompetency of the practitioners, procurement entities repulsive attitude, delay from Bureau of Public Procurement processes, procurement officials not part of decision makers, and many more (Ogunsemi, 2013). Ajike (2019) added that the paper based procurement system was highlighted by reported cases of political influence and pressure from trade unions in the procurement process; fragmented procurement procedures, the absence of open, competitive tendering, especially for foreign suppliers; and the lack of transparency.

Constraints to the Adoption of E-procurement in Construction Projects

The constraints to the uptake of e-procurement in any public organisation could be grouped into internal and external constraints. While the internal constraints focused on resource constraints and organisational and management characteristics, the external constraints include external factors, such as technology, infrastructure and legislation, and the environment (Eei, *et al.*, 2012). In the view of Hashim, *et al.*, (2014), the conceived constraints to e-procurement uptake in Nigeria include: external environment (infrastructure, external pressure and sociocultural factors); internal environment (size, resource availability, organisational culture and trained labour); perception (perceived benefits, risks, trust and cost); and attitude (age, occupational relevance, language and education). Arbin (2010), noted further that the main



constraints to implementing e-procurement include management constraints, organisational constraints, IT constraints, and user constraint.

Prospects of E-procurement Implementation in Construction

Sanewu (2016) summarises the prospects of implementing e-procurement system in construction work to include: capturing and reducing rogue spending (spending outside of the procurement contracts); better analysis, better tracking of expenditure, and better contracting prices; cutting out distributors to drive down prices; and optimising logistics to reduce transportation costs. Furthermore, Eei, *et al.* (2012) highlighted four basic cost saving advantages from the adoption of e-procurement system to include, order cost, administrative cost, lead-time order cost and opportunity cost of capital. The main prospects of implementing e-procurement system include: cost savings and subsequent increase in return-on investment; upgrade of store network productivity by giving ongoing information with respect to item accessibility, stock level, shipment status, generation prerequisites; assistance of collective arranging among store network accomplices by sharing information on request figures and generation plans that direct production network exercises; intense linkage of customer demand information to upstream (stock system organisation) limits (Saleh, 2018; Muhammed, *et al.*, 2022).

Research Methodology

Research Design

Research design defines the procedures used by the researcher to obtain information in achieving the stated objectives of the study (Hannah, 2018). It is the arrangement of settings for gathering and evaluation of data in a way that aims to combine significance to the research purpose (Kothari, 2004). The research methodology for this study involved a qualitative approach in which primary data was retrieved using semi-structured questionnaire administered to 384 respondents of which 303 numbers were properly filled and returned successfully, thus, representing 79% return rate.

Sources of Data

Data collection is a crucial part of the research design as it aids the researcher to find answers to the research questions. The sources of information employed in this study were from primary and secondary sources. This primary source was gathered from the responses obtained from the contractors, consultants, client organisations and other



professionals involved in the procurement activities, while the secondary source of information was gathered from books, journals and online all relating to the subject matter of the study.

Target Population

According to Mugenda and Mugenda (2001), target population refers to the full set of individuals' cases or objects with some ordinary characters which the researcher generalizes the outcome of the study. Aduwo, *et al.* (2017), opined that in the Nigerian construction industry, the main users of e-Procurement were quantity surveyors and construction/project managers, particularly, those in the consulting sector. The effectiveness of the e-Procurement was targeted at stakeholders in the construction industry using purposive sampling technique. The construction stakeholders include Architects, Builders, Engineers, Contractors, Construction/Project Managers, Quantity Surveyors, Estate/Facilities Managers, Supply Chain Managers/Procurement Officers, and Construction Materials/Equipment Vendors in the North Central region of Nigeria.

Sampling Size

Sample size refers to the number of items chosen to form the sample (Kothari, 2004). Cochran (1963), equation is used to give a representative sample of the participants of the study. Simple random sampling for an undefined population using the Cochran formula in Equation (3.1) was used, where the $p = 0.5$ i.e., the maximum variability at 95% confidence level. The value of 95% is used because the researchers do not know the variability in the proportion of the actual users of e-Procurement systems in the construction industry. In Equation (3.1), e is the level of precision desired for the sample size which is at ± 5 percent, z is the abscissa of the normal curve given as 1.96 and q represented by $(1 - p)$ which is equivalent of 0.5.

Cochran (1977)

$$n_0 = \frac{z^2 pq}{e^2} \quad (\text{Eqn. 3.1})$$

Thus

$$n_0 = \frac{1.96^2(0.5*0.5)}{0.05^2} \quad (\text{Eqn. 3.2})$$

$$n_0 = 384$$



Therefore, the minimum sample size was calculated at 384 construction stakeholders.

Method of Data Collection and Analysis

A questionnaire survey was applied for this study where semi-structured questionnaires comprising of three (3) sub-divisions were distributed to the targeted respondents using the Likert Scale to measure the multiple response level as applied in the Study of Muhammed, *et al.* (2022). For this study, the applied Likert Scale measure is Very Low Extent (VLE) (1), Low Extent (LE) (2), Neutral (N) (3), High Extent (HE) (4) and Very High Extent (VHE) (5) from the lowest to the highest extent while the method of analysis includes descriptive statistics of percentages, frequency and mean score.

Analysis and Result

Knowledge of Respondents

Table 1 below shows the demography of the respondents where 303 questionnaires were retrieved out of the 384 questionnaires sent out to the respondents indicating a response rate of 78.9 percent. According to Kothari (2004) cited in Muhammed, *et al.* (2022), a response rate greater than 70 percent is excellent for making conclusions. Consequently, 263 (86.8) percent respondents are males while 40 (13.2) percent are female. The age of the respondents includes 20 – 30 years (116), 31 – 40 (90), 41 – 50 (66) and above 50 years (31) with response rate of 38.3, 29.7, 21.8 and 10.2 percent compatibly. Academic qualification of respondents shows 138 first degree holders, 76 HND, 45 Master Degree, 30 ND and 14 Ph.D. with a response rate of 45.6, 25, 15, 10 and 4.4 percent congruently. The state of domiciliation of respondents indicates 106 FCT, 76 Kwara State, 61 Niger State and 60 Kogi State which is a representative of about 35, 25, 20 and 19.7 percent correspondingly. Accordingly, the profession of respondents exposed 76 Project Managers, 70 Quantity Surveyors, 60 Engineers, 36 Architects, 31 Site Managers and 30 Urban and Regional Planners with a response rate of about 25.3, 22.6, 19.0, 12.1, 10.5 and 10 percent respectively. The areas of respondents indicate 135 residential buildings and 168 Non-Residential Buildings with a response rate of 44.55 and 55.45 percent respectively. the actual users of the e-procurement system according to profession includes 30 Project Managers, 70 Quantity Surveyors, 30 Engineers, 36 Architects, 31 Site Managers, 30 Urban & Regional Planners and 76 Procurement Officers with a response rate of 9.5, 22.6, 9.5, 12.1, 10.5, 10.0 and 23.5 percent compatibly. The actual users of e-procurement according to organizations signifies 111 contracting firms, 45 consulting firms, 29 client organisations, 62 Building Material Manufacturers/Vendors, and 56 Government Ministry/Parastatals/Institutions with a response rate of 37, 15, 9.8, 19.7



and 18.5 percent correspondingly. Longevity of the respondents' involvement in construction projects shows that 0 – 5 years (106), 5 – 10 years (76), 10 – 15 years (61) and above 15 years (60) with response rate of 35, 25, 20 and 19.7 percent consecutively. Longevity of the respondents' involvement in contracting procurement posit 0 – 5 years (122), 5 – 10 years (89), 10 – 15 years (59) and above 15 years (33) with a response rate of 40.3, 29.5, 19.4 and 10.8 percent compatibly.

Table 1: Respondent's Demography

Demographic Information	Frequency	Percent (%)
Number of Questionnaire		
Sent Out	384	100
Received	303	78.9
Gender		
Male	263	86.8
Female	40	13.2
Age (in years)		
20 – 30	116	38.3
31 – 40	90	29.7
41 – 50	66	21.8
Above 50 years	31	10.2
Academic Qualification		
First Degree	138	45.6
Higher National Diploma (HND)	76	25
Master's Degree	45	15
National Diploma (ND)	30	10
PhD	14	4.4
State of Domiciliation		
FCT	35.0	106
Kwara	25.0	76
Niger	20.0	61
Kogi	19.70	60
Profession of Respondents		
Project Managers	76	25.3
Quantity Surveyors	70	22.6
Engineers	60	19.0
Architects	36	12.1
Site Manager	31	10.5
Urban & Regional Planner	30	10.0
Areas of respondents		
Residential Building	135	44.55



Non-Residential Buildings	168	55.45
Actual users of the e-procurement systems according to profession		
Project Managers	30	9.5
Quantity Surveyors	70	22.6
Engineers	30	9.5
Architects	36	12.1
Site Manager	31	10.5
Urban & Regional Planner	30	10.0
Procurement Officers	76	25.3
Actual users of e-Procurement systems according to organisations		
Contracting Firms	111	37.0
Consulting Firms	45	15
Client Organization	29	9.8
Building Material Manufacturers/Vendors	62	19.7
Government Ministry/Parastatals/Institutions	56	18.5
How long have you being involved in building construction projects?		
0 – 5 years	35.0	106
5 – 10 years	25.0	76
10 – 15 years	20.0	61
Above 15 years	19.70	60
How many years have you being into contracting procurement?		
0 – 5 years	122	40.3
5 – 10 years	89	29.5
10 – 15 years	59	19.4
Above 15 years	33	10.8

Source: Researcher's Field Survey, (2023)

Actual Users of e-Procurement Systems According to Organisations

Table 2 exposed the actual users of the e-Procurement systems according to organisations, and shows that Supply Chain Manager/Procurement Officers, Contracting firms, Building Materials Manufacturer/Vendors and Quantity Surveyors are the topmost users of the e-Procurement systems with mean scores of 4.02, 3.99, 3.95 and 3.93, and ranked 1st, 2nd, 3rd and 4th respectively. Consequently, this study ranks Consulting firms, Builders, Architects, Engineer and Project Manager as the next set of users of the e-Procurement systems with mean scores of 3.88, 3.87, 3.76, 3.50 and 3.42, and ranked 5th, 6th, 7th, 8th and 9th. Furthermore, the next set of users



comprises of Estate/Facilities Managers, Client Organizations and Government Ministry/Parastatal/Institutions with mean scores of 3.34, 2.99 and 1.56, thus ranked 10th, 11th and 12th correspondingly.

Table 2: Actual users of e-Procurement systems according to organisations

S/N	Actual users of e-Procurement systems according to organisations	Mean	SD	Rank
1.	Project Managers	3.42	0.67	9
2.	Quantity Surveyors	3.93	0.73	4
3.	Architects	3.76	0.78	7
4.	Engineers	3.50	0.79	8
5.	Builders	3.87	0.84	6
6.	Estate/Facilities Managers	3.34	0.87	10
7.	Supply Chain Manager/Procurement Officers	4.02	0.86	1
8.	Consulting firms	3.88	0.78	5
9.	Contracting firms	3.99	0.75	2
10.	Client Organizations	2.99	0.77	11
11.	Building Materials Manufacturer/Vendors	3.95	0.81	3
12.	Government Ministry/Parastatal/Institutions	1.56	0.69	12

Source: Researcher's Field Survey, (2023)

Constraints Militating against the implementation of e-Procurement in Nigeria

As indicated in table 3, the constraints militating against the implementation of the e-procurement system in Nigeria exposed 'insufficiency of supportive ICT Infrastructure', 'computer literate level of construction stakeholders', as well as 'insufficient awareness of the benefits of e-procurement use' and 'inability of e-procurement systems fitting into existing procurement framework' with mean scores of 4.79, 4.65 as well as 4.56, 1st, 2nd as well as 3rd respectively. The next of rankings include 'level of change management procedure within construction firm' and 'confidence level of e-procurement technology usage by industry stakeholders' which are together ranked 5th with mean scores of 4.51. Consequently, 'level of government support for e-procurement uptake' and 'supportive policies and legislation on e-procurement usage' are together ranked 9th with mean scores of 3.80. while 'user friendliness of e-procurement tools and operations' and 'accessibility to affordable e-procurement tools and applications' are together ranked 11th with mean scores of 3.55, 'ability to operate the e-procurement software packages' and 'awareness level of e-procurement systems to stakeholders' are ranked 13th and 14th with mean scores of 3.50 and 3.40 respectively. 'Privacy of e-procurement platform transactions' and



'recognition of electronic contracts as legal entities' have the same mean scores of 3.30 and ranked 15th while 'availability of uniform standards for e-procurement operations' and 'level of resistance to change by employees' with the same mean scores of 2.99 and ranked 17th. Furthermore, 'security level and validation of e-procurement transactions', 'presence of quality internet facilities' and 'stable power supply' with mean scores of 2.50, 2.31 and 1.99, and ranked 19th, 20th and 21st respectively. Additionally, 'years of company's existence', 'staff strength of construction businesses' and 'physical structures of the construction firm' are ranked together 22nd with same mean score of 1.81.

Table 3: Constraints militating against the implementation of e-procurement in Nigeria

S/N	Constraints militating against the implementation of e-procurement in Nigeria	Mean	SD	Rank
1.	Years of Company's existence	1.81	0.87	22
2.	Staff strength of construction business	1.81	0.87	22
3.	Physical structures of the construction firm	1.81	0.87	22
4.	Accessibility to affordable e-procurement tools and applications	3.55	0.85	11
5.	Presence of quality internet facilities	2.31	0.89	20
6.	Insufficiency of Supportive ICT Infrastructure	4.79	0.78	1
7.	Stable power supply	1.99	0.88	21
8.	Commitment and backing from Top management	4.18	0.82	7
9.	Ease in sourcing for e-procurement skilled personnel	4.18	0.82	7
10.	Ability to operate the e-procurement software packages	3.50	0.87	13
11.	Awareness level of e-procurement systems to stakeholders	3.40	0.88	14
12.	Inability of e-procurement systems fitting into existing procurement framework	4.56	0.79	3
13.	User friendliness of e-procurement tools and operations	3.55	0.85	11
14.	Security level and validation of e-procurement transactions	2.50	0.87	19
15.	Privacy of e-procurement platform transactions	3.30	0.89	15
16.	Recognition of electronic contracts as legal entities	3.30	0.89	15
17.	Level of government support for e-procurement uptake	3.80	0.73	9



18.	Supportive policies and legislation on e-procurement usage	3.80	0.73	9
19.	Availability of uniform standards for e-procurement operations	2.99	0.77	17
20.	Level of resistance to change by employees	2.99	0.77	17
21.	Computer literate level of construction stakeholders	4.65	0.88	2
22.	Insufficient awareness of the benefits of e-procurement use	4.56	0.79	3
23.	Level of change management procedure within construction firm	4.51	0.91	5
24.	Confidence level of e-procurement technology usage by industry stakeholders	4.51	0.91	5

Source: Researcher's Field Survey, (2023)

Possible Effects of e-Procurement on Project Delivery

Table 4 shows the possible effects of e-procurement on project delivery of which 'project on-time completion', 'project on-cost completion', 'meeting the desired project specification' and 'availability of labour' are the topmost factors with mean scores of 4.59, 4.30, 4.19 and 3.51, and ranked 1st, 2nd, 3rd and 4th respectively. 'Better cash flow management' is ranked 5th with mean score of 3.34 while 'availability of construction materials' and 'efficient construction stakeholders management' with mean score of 3.30 and ranked 6th. Furthermore, 'avoidance of rework' is ranked least with mean score of 3.10 and ranked 7th.

Table 4: Possible effects of e-procurement on project delivery

S/N	Effects of e-procurement on project delivery	Mean	SD	Rank
1.	Better Cash Flow Management	3.34	0.85	5
2.	Availability of construction materials	3.30	0.87	6
3.	Efficient construction stakeholders management	3.30	0.87	6
4.	Avoidance of rework	3.10	1.15	7
5.	Project on-time completion	4.59	0.82	1
6.	Project on-cost completion	4.30	0.86	2
7.	Meeting the desired project specification	4.19	0.77	3
8.	Availability of labour	3.51	1.13	4

Source: Researcher's Field Survey, (2023)



Conclusion and Recommendation

The study concluded that despite revealing the actual users of e-procurement system in Nigeria to be supply chain manager/procurement officers, contracting firms, building materials manufacturer/vendors as the topmost users, not all of them in the wider scope of users, actually uses e-procurement system to its maximum benefits, owing to insufficiency of supportive ICT infrastructure, lack of adequate computer-literate construction stakeholders, and lack of awareness of the benefits of e-procurement system in Nigeria. This study therefore recommends need for sufficient ICT infrastructure support by e-procurement stakeholders, increased level of computer literacy of construction stakeholders, and creation of a robust awareness on the benefits of e-procurement systems in Nigeria.

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CHAPTER 16

TEACHER COMPUTER PROGRAMMING ATTITUDE AND SELF-EFFICACY AS CORRELATES OF STUDENT INTEREST IN COMPUTER PROGRAMMING IN OYO STATE

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Abstract

This study examined teacher attitudes and self-efficacy as correlates of students' interest in computer programming in Oyo State. The literature was reviewed while the study adopted Pearson Product Moment Correlation. The purposive sampling technique was employed to select secondary schools. The sample comprised computer teachers and secondary school students in Ibadan North Local Government, Oyo State. The instruments used were: Teacher Attitude to Computer programming questionnaire ($r = 0.86$), Teachers Computer Programming self-efficacy ($r = 0.78$), Students' interest in computer programming ($r = 0.79$). The result revealed that there was a significant relationship between teachers' attitude and students' interest in computer programming ($r = 0.56$; $p \leq 0.05$). Likewise, the finding revealed that there was a significant relationship between teachers' computer programming self-efficacy and student interest in computer programming ($r = -0.61$; $p < 0.05$). Based on these findings, it is recommended that in order to improve student interest in computer programming, teachers should develop positive attitude to computer programming.

Keywords: *Programming language, Self-efficacy, Students' interest in computer programming*



Introduction

Computer studies is a subject that helps students acquire and develop problem solving skills, because it deals with problem solving as well as solutions to such problems. The study of computer helps the students to be equipped with the valuable skills and knowledge needed in this digital era. Effective communication with the computer requires a language that computer understands. This suggests that there is need to communicate with the computer using programming for effective problem solving. In order to really interact with the computer, it is crucial to fathom its technical language. This language contains syntax and various code. Computer can only understand a specific language skilfully coded and programmed for its own purpose. This language needs a high level of skills to decode for learning to take place.

Computer uses programmed codes to carry out its task, this language uses binary digits, '0 and 1. It is difficult for computer users to write this language directly in terms of these digits. Therefore, they write their instructions in a language that is understood by computer called programming language. Programming is a set of instructions that enables computer to perform certain tasks and solve problems. Programming involves the ability to generate solutions to problems. Thus, programming skills are necessary for effective problem-solving using computers. Computer programming can be used to solve problems such as science, art and mathematics to mention a few. Learning the fundamentals of programming can make an individual or a student stand out in the technology-driven world.

Computer programming is one of the most important aspects of computer studies and an essential component of computing Ben-Ari (2016) which cannot be underestimated. It is a set of instructions or commands written to direct the computer and enable it to perform some certain tasks. It helps students to survive in this world of technological advancement. It helps people to be technologically inclined; It has transformed the world economically. Moreover, most of the gadgets we use daily to survive in people's daily business or career such as phones, desktop and laptop are being programmed. Computer programming fosters logical reasoning, creativity, employability and helps people in designing application such as games and website (Iqbal & Coldwell Nelson, 2017). Programming has different types such as BASIC, LOGO, JAVA, Python, Fortran, QBASIC to mention a few. Computer programming is taught from primary to tertiary levels of education due to its importance and broad influence. Teaching of programming language is worthy of studying in the school system if students want to benefit from the global advantage of technology.



In spite of the importance of computer programming, studies have shown that students find programming difficult to understand Attard and Busuttil (2020). Bennedsen, Caspersen, and Kolling (2008) observed that students find the aspect of programming complex to understand. Research has shown that computer programming is one of the aspects of computer that teacher find difficult to teach. Resultantly, students find it difficult to understand. This has contributed to negative attitude towards computer programming on the part of learners (Apiola and Tedre, 2012). However, some factors such as gender, age, teaching method, self-efficacy, attitude, career choice contribute to students' interest in a subject (Arandia, Zuza, and Guisasola, 2016; Xavier and Croix, 2016). These factors help to understand the degree of variance in students' interest when it comes to computer programming.

Students' interest is germane to any subject or topic of a subject, and it must be taken seriously at all levels of education. According to Tella (2007), if a child has interest in a subject, such a child gives proper attention to the subject and performs better from the beginning to the end. Research has shown that students perform better and enroll for a subject if they are interested in the instructional content as presented by the teacher (Osborne, Simon and Collins, 2003). Thus, for those students who see computer programming as difficult, studying it might just be a routine exercise and there is less likely that the knowledge will be beneficially utilised. Such perception may discourage students from studying it at further levels. This has serious implications for building a pool of computer scientists or computer programmers that are required for shaping technological development and computer teachers that would help to build the foundation for the subject in schools.

It has been perceived that the way computer programming is taught in an abstract way has reduced students' interest in it. These students' interest has been affected by a number of factors, such as teacher characteristics, experience, qualification, attitude, self-efficacy, teacher student ratio and motivation (Akinsolu, 2010). Teachers play a major role in promoting knowledge and skills in students to enable them to cope in their environment and society in general (Omosa, 2009).

Teachers are individuals saddled with the responsibility of spelling knowledge and concepts. Computer programming as a topic is meant to develop creativity, creative thinking and logical reasoning in learner especially in this 21st century where everything is computerised.

In teaching this topic and achieving objective of introducing this topic, there is need to have a competent teacher to carry out this task. The teacher must be well



grounded in a subject so as to spell the right and correct thing in the learner. Studies have shown that of one of the most pronounced factors that contributes to students learning outcome is teacher factor.

Therefore, the important role of the teacher's in the learning of computer programming is indisputable. Teacher factor is the prominent factor, that this, teachers have a lot of influence on students. Teachers are said to be effective when their teaching can lead to students' learning. We cannot say that teaching has taken place when nothing has been learnt and this happens when teacher succeeds in causing a change in behavior in the learner. It is therefore important for teachers to see teaching as very important on his own part to transfer using the right attitude. Teachers' attitude is so crucial that it influences students 'positive disposition to computer programming.

Teacher's attitude to computer programming teaching will certainly affect his or her performance in teaching programming. Since attitude is about feelings, affection, interest and disposition to a given object (Oskamp and Schultz, 2005). Teacher's attitude and the method of teaching has great influence on student's interest. According to Baser (2013), students tend to develop negative attitude towards computer programming which affects their interest and performance because of the teacher's attitude to the concept. Student s' interest is likely to be positively correlated with their achievements in computer programming (Baser, 2013).

Another variable considered in this study is teacher computer programming self-efficacy. Self-efficacy as defined by Bandura (1997) states is the belief in one's capabilities to achieve in specific situation. Teacher computer programming self-efficacy is the belief and capability of teacher's knowledge in computer programming. Self- efficacy has the potential to influence interest, attitude and cognition (Aiken, 2002). Studies have shown that teacher computer programming self-efficacy influence and have great impact on learner' interest in computer programming (Guryer, Cetin and Top, 2019). The impact of teacher in teaching and learning is very germane. The teachers are facilitators who are expected to impact students with the essential concepts to be learnt. Therefore, this is study investigates teacher computer programming attitude and self-efficacy ascorrelates of student interest in computer programming in Oyo state.



Statement of the Problem

Over the years, computer programming has gained significant attention because it fosters other skills such as problem solving, collaboration, critical thinking, creativity and communication which are the 21st century skills needed to survive in this world of competitiveness. Computer programming allows users to interact with the computer and helps them to understand the language that it understands. The role of computer programming cannot be overstated. Nevertheless, learning computer programming is considered to be hard generally, which makes students run away from courses associated with programming. This has also caused have high dropout rates among students.

Studies have shown that computer programming is one of the complex aspects of computer that some students find difficult to understand; thus, making them not to have interest in it. The prevailing lack of interest calls for attention. Various studies carried out have showed various factors responsible for this. However, teacher factors have not been sufficiently investigated. Hence, there is need to look into teacher attitude and self-efficacy in schools because teachers are initiators of learning and has great impact on teaching and learning. Therefore, this is study investigates teacher computer programming attitude and self-efficacy ascorrelates of student interest in computer programming in Oyo State. The objectives of the study were to:

1. Determine relationship between the teachers' attitude and students' interest in computer programming.
2. Determine relationship between the teachers' computer programming self-efficacy and students' interest in computer programming.

Research Questions

- a. **Research question one:** What is the relationship between the teachers' attitude and students' interest in computer programming?
- b. **Research question two:** What is the relationship between teachers' computer programming self-efficacy and students' interest in computer programming?



Methodology

This study adopted a survey research design. The population comprised senior secondary school students and teachers in Ibadan North Local Government Area Oyo State. Ten schools were selected in the study using purposive sampling technique. This was done on the basis of schools that have computer teachers and students offering computer at senior secondary school level. The participants involved in the study were two hundred (200) senior secondary school students and twelve (12) teachers. The instruments for data collection were Teachers' Attitude to Computer Programming Questionnaire (with reliability co-efficient of 0.86), Teachers' Computer Programming self-efficacy (with reliability co-efficient of 0.78), students' Interest in Computer Programming (with reliability co-efficient of 0.79). The study took three weeks for the administration of the Instruments. Data were analysed using the Pearson Product Moment Correlation (PPMC) at 0.05 level of significance.

Results

Research Questions: What is the relationship between the teachers' attitude and students' interest in computer programming?

What is the relationship between the teacher computer programming self-efficacy and students' interest in computer programming?

As shown in Table 1, there was a significant relationship between teachers' attitude and students' interest in computer programming ($r = -0.56$; $p \leq 0.05$), implying that teachers' attitude has impact on students' interest in computer programming.

Table 1 shows that there was significant relationship between teachers' computer programming self - efficacy and students' interest in computer programming ($r=0.61$; $p<0.05$), implying that that teachers' self-efficacy has influence on students' interest in computer programming.



Table 1: Correlation matrix showing the relationship between the independent variables and students' interest in computer programming

Variables	Students' interest in computer programming	Teachers' attitude to computer programming	Teachers' self-efficacy to computer programming
Students' interest in computer programming	1	-0.56 0.05	- 0.613* 0.034
Teachers' attitude on students' computer programming	0.56* 0.05	1	0.996** 0.000
Teachers' self-efficacy to computer programming	0.613* 0.034	0.996** 0.000	1
Mean	46.55	22.33	23.16
STD. D	20.76	22.40	22.08

* denotes significant at $p \leq 0.05$

Discussion of Findings

(a) Teachers' attitude and students' interest in computer programming

The results indicated that there was a significant relationship between teachers' attitude and students' interest to computer programming. This means that teachers' attitude is very important to students' interest. This could also mean that teachers' attitude has a great impact on students' interest. It could be drawn from the result that the disposition of a teacher towards a particular subject or is very germane to students' interest to. This finding corroborate the findings of Yara (2009) who reported a significant relationship between teachers' attitude and students' attitude towards Physics.

(b) Teachers' computer programming self-efficacy and students' interest in computer programming

The results also indicated that there was a significant relationship between teachers' self efficacy and students' interest in computer programming. This means that teachers' computer programming self-efficacy is very imperative to students' interest. This means that the pedagogical knowledge of a teacher is very important in teaching and



learning process because the essence of a teacher is to pass the knowledge acquired to the learner, if a teacher does not have the pedagogical knowledge of the subject matter, it might affect the learner. This corroborates the findings of Lopez-Ramirez (2016) who reported a significant relationship between teachers' self-efficacy and students' learning outcomes.

Conclusion and Recommendations

It was concluded that there was a significant relationship between teachers' attitude and computer programming self-efficacy and students' interest to computer programming.

Based on the findings of the study, it is recommended that:

In order to improve student interest in computer programming, teachers should develop positive attitude to computer programming.

- i. Teachers in the secondary schools should attend seminar and workshop in order to improve their computer programming self- efficacy.
- ii. It is also imperative that basic or necessary measures and amenities should be put in place in our educational system in Nigeria to enhance computer programming self-efficacy.

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CHAPTER 17

EXPLORING SCIENTIFIC REASONING AND GENETICS SELF-EFFICACY AS PREDICTORS OF SECONDARY SCHOOL STUDENTS' ACHIEVEMENT IN GENETICS CONCEPTS

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Abstract

This study examined the levels of students' scientific reasoning and genetics self-efficacy as predictors of achievement in genetics concepts at the secondary school level. The study was a survey type, involving 336 Secondary School Two (SS2) students taken from nine secondary schools. Three instruments were used; Lawson's Classroom Test of Scientific Reasoning ($r = 0.76$), Self-efficacy in Genetics Concepts Scale ($\alpha = 0.88$), and Students' Achievement Test in Genetics Concepts ($r = 0.78$). Data collected were subjected to mean, standard deviation, percentages, ANOVA analysis, and Multiple regression at 0.05 level of significance. The findings showed that 65.8%, 25.3% and 8.9% of the students were in transitional, concrete and formal scientific reasoning level, respectively. Genetics self-efficacy (29.8% - low, 39.6% - medium and 30.7% - high), while their achievement mean score in genetics concepts was low ($\bar{x} = 7.21$) against the threshold of 17.5. There was a significant difference in the achievement in genetics concepts of concrete, transitional, and formal scientific reasoning students ($F_{(2; 333)} = 63.42$; $p < 0.05$). The formal scientific reasoning students ($\bar{x} = 22.27$) performed better than those in transitional ($\bar{x} = 21.01$) and concrete ($\bar{x} = 20.00$) levels, respectively. There was no significant difference in the achievement in genetics concepts of low, medium and high self-efficacy students ($F_{(2; 333)} = 0.88$; $p > 0.05$). The joint contribution of scientific reasoning and genetics self-efficacy to students' achievement in genetics concepts was not significant ($F_{(3; 333)} = 2.60$; $p > 0.05$). Scientific reasoning ($\beta = 0.12$) contributed to students' achievement in genetics concepts. It was therefore, recommended that since scientific reasoning of the students is a very potent variable that predicted the achievement of students in genetics concepts, biology teachers should give a great consideration to this factor when planning for the teaching of genetics concepts.



Keywords: *Scientific reasoning, Genetics self-efficacy, Achievement in genetics concepts, Secondary school students*

Introduction

Genetics is one of the concepts in the biology curriculum at the secondary school level of education in Nigeria. It is the study of how genes and traits are passed down from one generation to the next. The field of genetics has increasingly expanded over the decades, since the work of Watson and Crick in 1950's to cover many areas beyond the study of inheritance. These developments have been witnessed in the areas of recombinant DNA, introduction of Genetically Modified Organisms (GMOs), animal cloning, Human Genome Project (HGP), sex determination and selection, as well as gene therapy and DNA fingerprinting, among others. All these advancements in the application of genetics in society raised important ethical and social issues. For citizens to understand these issues, appropriate genetics education is needed in our secondary schools.

However, studies have shown that students at secondary school failed to comprehend this concept in biology (Opfer, Nelm and Ha, 2012). Studies at the international level also reported poor understanding of genetics concepts among high school students, with widespread misconceptions (Chattopadhyay, 2006; Osman, Boujaoude and Hamdan, 2017). This lack of comprehension has been translated to their inability to apply the gained knowledge in genetics classroom to their everyday life activities (Isaya, Mallam, Pam and Manji, 2017). This was supported by the West African Examinations Council (WAEC) Chief Examiner's report on biology theory questions that students' performance in genetics is poor especially in questions that require application. (WASSCE, 2015 – 2019). For instance, in 2019, the candidates were asked to briefly explain the reason why a Rhesus negative woman married to a Rhesus positive man might lose her second pregnancy. It was reported that they failed to explain the reason.

Previous studies have ascribed this poor understanding of genetics concepts among secondary school students to factors such as teachers and students' perception of genetics as a difficult concept (Osman *et al.*, 2017; Ige, 2001), negative attitude to the concept (Haambokoma (2007), ineffective strategies adopted by teachers (Kampourakis, 2014; Mahmud and Bature, 2017) as well as ill-equipped laboratories and over loaded curriculum (Ishaku, 2015). However, in order to proffer solutions to this poor achievement in genetics concepts, different studies have been carried out with most of them on the adoption of innovative and participatory strategies with few on students-related factors (gender, learning styles, and verbal ability). Some of these strategies include 5E learning strategy (Ibrahim, 2015), problem-solving and discovery strategies (Mahmud and Bature, 2017), and computer and game puzzle (Olumide, 2019). In spite of their effectiveness, the achievement of students in



genetics concepts remains poor. Therefore, there is a need to look beyond strategies into some students-related factors such their reasoning and problem-solving abilities when generating, testing and reflecting on the process of knowledge acquisition, as well as their ability to successfully complete a given task in genetics concepts.

Scientific Reasoning Ability (SRA) and self-efficacy have become prominent and established in literature as some of the variables that are responsible for students' ability to understand, explore issues, reflect on knowledge and achieve academically (Agbaje and Awodun, 2014). The ability to recognise, analysis and evaluate data as well as support one's reasoned conclusion with evidence is important in ensuring comprehensive understanding of genetics concepts and related socio-scientific issues (Ojo, 2022). Previous research works have indicated that SRA is one of the factors that contribute to students understanding of genetics concepts (Zeidler, Herman and Sadler, 2019), and also has the potential to stimulate students to reason scientifically. According to Lawson (2010), SRA is a collection of fundamental mental abilities often required in order for students to effectively carry out scientific investigation. These abilities include the ability to investigate a problem, formulate and test theories, control and manipulate data, observe and assess the results.

Drummond (2016) claims that SRA is distinct from education, numeracy, and scientific knowledge, and that individuals with higher scientific reasoning ability are more likely to hold views that are consistent with the scientific consensus on scientific social issues. She further emphasises that students with higher scientific reasoning ability do better on tasks that require them to analyse scientific data. In addition, Bao, Xiao, Koenig and Han (2018) were of the view that SRA has a long-term impact on students' achievement and also make science concepts learning more attractive to students. Studies have been carried out on SRA in different subject areas in science. Oloyede (2012) and Sujata (2017) discovered significant relationships between students' reasoning ability, achievement in biology courses, chemistry and mathematics respectively. However, based on the researcher's knowledge, not much has been done on the effects of SRA on achievement of students in biology concepts especially in Oyo state. In this study SRA was examined in its entirety and also on its three categorisations; concrete, transitional and formal.

The teaching and learning of genetics concepts involve planning, organising and performing tasks in order to provide solution to biological issues. Research indicated that self-efficacy can effectively predict students' future academic performance, and some studies also suggested that it has stronger predictive power than other non-cognitive variables (Schunk and Pajares, 2009). Self-efficacy is a term that implies the ability of students to learn new skills and activities, usually in a particular academic field. It could also imply the ability to plan, organise, investigate and perform a given difficult task in a specific science related subject effectively. Bryant (2017) reported that students who have a strong self-efficacy are more likely to accept more difficult activities, have better time management skills, are more



persistent in the face of challenges, have lower anxiety, are more flexible in adopting different learning strategies and can adapt to different teaching and learning situations.

Students' vicarious experiences, persuasions from others, and physiological responses assist them in evaluating their actual performance in any learning situation. Also, students who have a high self-belief in biology are less likely to give up when faced with challenges (Ersanla, 2015). Therefore, it is very important for students to have a strong self-efficacy as it will be required when they try to exert control over their academic learning settings that is based on different strategies (Bryant, 2017). Supporting this claim that self-efficacy is a strong potent factor that predicts students' learning, Alpacion Camañan, Gregorio, Apanlaan and Tudy (2014) stated that low self-efficacy of students is a factor affecting cognitive (achievement) and affective (attitude and interest) domains. Based on the researcher's knowledge, majority of studies carried on students' self-efficacy in science focused on mathematics and physics, while its research on biology has been scarce. Based on the above submissions, it is important to examine secondary school biology students' genetics self-efficacy in order to determine its effect on their content knowledge in genetics concepts.

Methodology

Research Design: The survey research design was adopted in this study.

Sample and Sampling Techniques: Senior Secondary School II students in Oyo state were the respondents. In order to offer all of the local government areas in the three senatorial districts an equal chance to participate in the study, one local government area (LGA) was randomly selected from each of the three senatorial districts in Oyo State, for a total of three local government areas. From the three local government areas, nine senior secondary schools were chosen at random (that is, three schools from each LGA) by fishbowl without replacement. Senior secondary school II biology students in each nine schools were purposively selected as the respondents.

Selection of Biology Concept/Topics for the Study: Genetics concept in biology was selected by the researchers as the concept to be investigated in this study. The choice of this concept was drawn from the WAEC Chief examiners' reports that indicated poor understanding of genetics concepts in biology examinations at secondary school level over the years coupled with the poor understanding of the concept, unsatisfactory results of students in biology in general (WAEC Chief Examiners' Reports, 2010 – 2019) as well as that of the previous studies reports and the pilot study carried out by the researcher, that secondary school students have poor achievement in genetics concepts in biology. Topics selected were based on the genetics content of the secondary school biology syllabus as approved by the Federal Ministry of Education (FGN, 2013). These topics include: transmission and expression of characters in



organisms; chromosomes, sex-linked characters, sex determination and probability in genetics; and principles of heredity application.

Research Instruments

Data were collected using three instruments:

1. Students' Achievement Test in Genetics Concepts (SATGC)

The SATGC was self-constructed to assess students' knowledge of genetics concepts. The SATGC is made up of 34 multiple-choice items that were designed to assess students' knowledge of the topics studied. Each item had five options, ranging from A to E, with one correct answer and three distracters. Each correct response received one point, while incorrect answers received zero points, in all a total of 34 points is available to each participating student.

The face and content validity were carried out by the researchers and experts in test-item construction to ascertain the suitability considering language, relevance, clarity of purpose and precision. Out of the initial 55 items, 11 items were screened out remaining 44 items. The corrections made were effectively inserted into the approved draft of the instrument for reliability. The final draft of the instrument with 44 items was pilot tested on SS 2 students that were not part of the sample school that participated in the main study. The reliability was determined using Kuder-Richardson - 20 (KR 20) which gave 0.78. This reliability method is appropriate for this instrument because the items are of varying difficulty levels. Equally, the discrimination indexes were established to determine the items of the test that are too difficult or too simple. Out of the 44 items trial tested, 34 items within 0.45-0.65 discrimination index range and difficulty index above 0.35 were found to be good enough for the study.

2. Lawson's Classroom Test of Scientific Reasoning (LCTSR)

The researchers used the LCTSR (The Lawson's Classroom Test of Scientific Reasoning) designed by Lawson in 2000 to measure students' scientific reasoning abilities. The LCTSR was created to evaluate scientific reasoning using Bloom's (1956) levels of analysis, synthesis, and evaluation. On a standard two-tier structure, the test consists of 24 items in 12 pairs multiple choice style. The LCTSR evaluates students' reasoning abilities in six areas: conservation of matter (items 1, 2), volume (CONSER) (items 3, 4), proportional reasoning (PROPOR) (items 5, 6, 7, 8), and variable control (VARIABL) (items 9, 10, 11, 12, 13, 14) PROBAB (items 15, 16, 17, 18), CORREL (items 19, 20), and HYPDED (items 15, 16, 17, 18) are all examples of probability reasoning (items 21, 22, 23, 24). The objects become harder as they progress. In terms of the test's evaluation, points are provided only when both



associated tasks are completed correctly for tasks 1 through 22. Only tasks 23 and 24 are self-contained, and as a result, they are scored separately. As a result, the maximum obtainable point is 13 marks. 0-4, concrete reasoners; 5-10 transitional; 11-13, formal are the categories utilized in grading.

Six specialists in the field of Piagetian research unanimously agreed that the test required clear and formal reasoning, proving the LCTSR's validity. In addition, the instrument's creator recorded a Cronbach Alpha reliability coefficient of 0.86. For grade levels 8, 9, and 10, the Kuder-Richardson 20 reliability estimate was 0.78. (Lawson, 2000). Thoron (2010) and Hanson (2016) used the LCTSR in their studies and found it to be a trustworthy and valid tool for assessing formal-operational scientific reasoning in secondary and college-aged students. The instrument was revalidated by trial testing the test items on SS 2 students, who were not participants. Its reliability was determined using Kuder-Richardson - 20 (KR-20) which gave 0.76. This reliability method is appropriate for this instrument because of the inequality of the difficulty and discriminating levels of the items.

3. Self-efficacy in Genetics Concepts Scale (SeGCS)

The SeGCS was adapted to assess the self-efficacy of students in genetics. SeGCS consists of 28 items adapted from Schwarzer and Jerusalem (1995) General Self Efficacy Scale and Biology Self-Efficacy developed by Baldwin, Ebert-May and Burns (1999). Schwarzer & Jerusalem (1995) instrument contains 10 items on a four-point scale of Exactly true-4, Moderately true-3, Hardly true-2 and Not at all true-1. Cronbach alpha was used to establish the internal consistency of GSES by the authors which gave alpha coefficients between 0.76 and 0.90. Baldwin, *et al* (1999) instruments of 23 items was made on a 5-point rating scale from Totally confident, Very confident, Fairly confident, Only a little confident and Not at all confident. The internal consistency reliability for the instrument yielded Cronbach's alpha coefficients of 0.89. The instrument was modified to a four-point Likert response scale of Strongly Agree, Agree, Disagree and Strongly Disagree. To read genetics, some items were recreated. These changes were made to fit the study's objectives and the participants' skill levels. In scoring, Strongly Agree = 4, Agree = 3, Disagree = 2 and Strongly Disagree = 1, were assigned to statements that are positively stated, while negatively worded statements were reversely scored.

In order to validate the instrument, SeGCS was presented to experts in science education, and measurement and evaluation to establish the suitability of the items in terms of language construction, precision of focus, clarity of purpose and suitability for the target population. Their comments were taken into account when designing the final draft of the instrument. The 34 items instrument was pilot-tested on a SS 2 students that were not among the sample students selected to participate in the main study to ensure its reliability. The Cronbach's alpha formula was used to establish the



instrument's internal consistency. This reliability technique is applicable for this instrument, because each test item is supposed to measure the same latent feature on the scale. The reliability coefficient of 0.88 was obtained. After which, only 28 items were found to be good enough for the study.

Methods of Data Analysis: The descriptive and inferential statistics were used to analyze the data collected. The descriptive statistics of mean, standard deviation, percentages and the inferential statistics of t test and Analysis of variance.

Results

Research question 1a: What is the level of students' scientific reasoning ability?

Table 1: Scientific reasoning ability of students

Scientific reasoning ability	Frequency	Percentages
Concrete	85	25.3
Transitional	221	65.8
Formal	30	8.9
Total	336	100.0

Table 1 reveals 85 (25.3%) of the respondents were classified as concrete scientific reasoning ability students, 221 (65.8%) as transitional, and 30 (8.9%) as formal scientific reasoning ability students. This indicates that most of the respondents were transitional scientific reasoning ability students.

Research question 1b: What is the level of students' genetics self-efficacy in biology?

Table 2: Students' self-efficacy in genetics concepts

Genetics self-efficacy	Frequency	Percentages
Low	100	29.8
Medium	133	36.6
High	103	30.7
Total	336	100.0

Table 2 indicates that 100 (29.8%) of the participant were low genetics self-efficacious, 133 (39.6%) were medium genetics self-efficacious students, while 103



(30.7%) were high genetics self-efficacious students. This implies that some of the students were medium genetics self-efficacious.

Research question 1c: What is the level of students' achievement in genetics concepts?

Table 3: Students' achievement in genetics concepts

Achievement in genetics concepts	Frequency	Percentages
Low	327	97.3
High	9	2.7
Total	336	100.0
Mean	7.21	
Criterion mean	17.5	

Table 3 shows that 97.3% of the respondents' achievement in genetics concepts was low, while 2.7% of them had high achievement in genetics concepts. Table 3 indicated that the achievement mean score in genetics concepts was low (7.21) against the threshold of 17.5. This indicates students' achievement in genetics concepts is low.

Research question 2: Is there any significant difference in concrete, transitional and formal scientific reasoning ability students' achievement in genetics concepts?

Table 4: ANOVA showing difference in students' achievement in genetics concepts by scientific reasoning ability

Source	Sum of Squares	Df	Mean Square	F	Significant
Between groups	126.840	2	63.420	3.934	0.020*
Within groups	5368.862	333	16.123		
Total	5495.702	335			
	N	\bar{x}			
Concrete	85	20.0000			
Transitional	221	21.0045			
Formal	30	22.2667			

* denotes significant at $p < 0.05$ level of significance

Table 4 revealed that there was a significant difference in the achievement of students in genetics concepts between concrete, transitional and formal scientific reasoning abilities ($F_{(2, 333)} = 63.42$; $p < 0.05$). This implies that students' scientific reasoning



ability has influence on their achievement in genetics concepts. It was observed that the formal scientific reasoning students ($\bar{x} = 22.27$) performed better than transitional ($\bar{x} = 21.01$) and concrete ($\bar{x} = 20.00$) scientific reasoning students, respectively. However, in order to explore which direction, the differences lie, the Tukey's HSD test for multiple comparisons was performed and the result is reported in Table 5.

Table 5: Multiple comparisons of achievement in genetics concepts by scientific reasoning

(I) Scientific Reasoning	(J) Scientific Reasoning	Mean Difference (I-J)	Sig.
Concrete	Transitional	-1.00452*	.050
	Formal	-2.26667*	.008
Transitional	Concrete	1.00452*	.050
	Formal	-1.26214	.107
Formal	Concrete	2.26667*	.008
	Transitional	1.26214	.107

* denotes significant $p < 0.05$

Table 5 revealed that the mean value of achievement in genetics concepts score was significantly different between transitional and concrete scientific reasoning abilities students, and also between formal and concrete scientific reasoning abilities students. However, there was no significant difference in mean achievement in genetics concepts score of transitional and formal scientific reasoning abilities students.

Research question 3: Is there any significant difference in low, medium and high scientific reasoning ability students' achievement in genetics concepts?

Table 6: ANOVA showing difference in students' achievement in genetics concepts by genetics self-efficacy

Source	Sum of Squares	df	Mean Square	F	Significant
Between groups	29.035	2	14.518	0.884	0.414
Within groups	5466.667	333	16.416		
Total	5495.702	335			



Table 6 indicated that there was no significant difference in the achievement in genetics concepts of low, medium and high self-efficacy students ($F_{(2, 333)} = 0.88$; $p > 0.05$). This implies that students' genetics self-efficacy has no influence on their achievement in genetics concepts.

Research question 4: What is the composite contribution of the scientific reasoning and genetics self-efficacy to students' achievement in genetics concepts?

Table 7: Multiple regression analysis showing the composite contribution of independent variables to students' achievement in genetics concepts

Sources of Variance	Sum of Squares	Df	Mean Square	F	Significant
Regression	95.152	2	47.576	2.599	0.076
Residual	6095.678	333	18.305		
Total	6190.830	335			

R = 0.124
R Square = 0.015
Adjusted R Square = 0.009
Std. Error of the Estimate = 4.27847

Table 7 reveals that the composite contribution of scientific reasoning and genetics self-efficacy to the prediction of students' achievement in genetics concepts was not significant ($F_{(2, 333)} = 2.60$; $p > 0.05$). This means that when scientific reasoning and genetics self-efficacy were taken together, they did not predict students' achievement in genetics concepts.

Research question 5: What is the composite contribution of the scientific reasoning and genetics self-efficacy to students' achievement in genetics concepts?

Table 8: Multiple regression analysis showing the relative contribution of independent variables to students' achievement in genetics concepts

Model	Unstandardised Coefficients		Standardised Coefficient	Rank	t	Sig.
	B	Std. Error	Beta (β)			
(Constant)	6.400	0.777			8.242	0.000
Scientific reasoning	0.019	0.009	0.115	1st	2.115	0.035*
Genetics self-efficacy	-0.064	0.066	-0.052		-0.957	0.339

* denotes significant $p < 0.05$



Table 8 shows that scientific reasoning significantly contributed to students' achievement in genetics concepts ($\beta = 0.12$; $t = 2.12$; $p < 0.05$). While genetics self-efficacy was to have no significant contribution to students' achievement in genetics concepts ($\beta = -0.05$; $t = -0.96$; $p > 0.05$). This indicates that scientific reasoning is the independent variable that predicts students' achievement in genetics concepts.

Discussion of Findings

Level of students' scientific reasoning, genetics self-efficacy and achievement in genetics concepts: The result indicated that majority of the students belong to the transitional scientific reasoning. This result is not in accordance with the theory of child cognitive development which states that children aged 11 years and above have formal operational reasoning ability characterised by having the ability to identify and control of variables, probabilistic thinking ability, thinking correctional ability and hypothetical-deductive reasoning. This result is not supported by the findings of Khoirina, Cari and Sukarmin (2018) that most high school students were at the concrete scientific reasoning level.

The result revealed that some of the students had medium self-efficacy in genetics concepts. It was observed that majority of students' achievement in genetics concepts was low. This implies that they have poor understanding of the concept. This result is supported by the findings of Opfer, Nehm and Ha (2012) that secondary school students have poor grasp of genetics concepts. Isaya, *et al.*, (2017) who in their findings indicated that students have poor understanding of the concept. This result is in accordance with the WAEC Chief Examiner's Report that candidates who attempted genetics concepts questions did not respond very and their performance is poor.

Scientific reasoning and students' achievement in genetics concepts: The result revealed that the difference in the achievement in genetics concepts of concrete, transitional, and formal scientific reasoning students was significant. It was also observed that formal scientific reasoning students performed better than their counterparts in transitional and concrete levels, respectively. The reason for this may be due to the fact that formal scientific reasoning ability students were able to identify and control of variables, think in both probabilistic and correctional ways as well as reasoned hypothetically and deductively. This result is in line with the results of Nnorom (2012), that formal scientific reasoning students outperformed their concrete and transitional scientific reasoning abilities counterparts in biology.

Genetics self-efficacy and students' achievement in genetics concepts: The results showed that there was no significant difference in the achievement in genetics concepts of low, medium and high self-efficacy students. This result is in line with the



findings of Olumide (2019) whole revealed that self-efficacy of students in genetics had no influence on their achievement. This result is not supported by the findings of Aurah (2017) that students' science self-efficacy is connected with their achievement in genetics. Sinan and Jongur (2016), who in their study found a significant difference in Mathematics achievement of students based on their self-efficacy.

Composite contribution of scientific reasoning and genetics self-efficacy to students' achievement in genetics concepts: The composite contribution of scientific reasoning and genetics self-efficacy to students' achievement in genetics concepts was not significant. This means that scientific reasoning and genetics self-efficacy did not predict their achievement in genetics concepts. This finding is not supported by the finding of Lawson, Banks and Logvin (2007) that reasoning ability and self-efficacy of students jointly determined college students' achievement in biology.

Relative contribution of scientific reasoning and genetics self-efficacy to students' achievement in genetics concepts: It was revealed that scientific reasoning was the variable that predicted students' achievement in genetics concepts. This in line with the results of Sajna and Premachandran (2017) that a positive significant correlation existed between chemistry achievement and scientific reasoning ability of students. Similarly, this result is in tandem with the findings of Wu and Tsai (2011), who revealed that students' knowledge of science was significantly related to their scientific reasoning ability.

Conclusion

It can be concluded from the study's findings that most of the students belong to transitional and scientific reasoning ability while some of them were in the medium genetics self-efficacy. The students' achievement in genetics concepts is low. Scientific reasoning contributed to students' achievement in genetics concepts, while genetics self-efficacy did not. The formal scientific reasoning ability students had better achievement in genetics concepts.

Recommendations

Based on the findings, the following recommendations were made:

1. Scientific reasoning of the students is a very potent variable that influence their achievement in genetics concept. Thereby biology teachers need to give a great consideration to this when planning for genetics classroom.

There is need for biology teachers to employ innovative strategies that relate the socio-scientific issues in genetics to teaching the concepts, especially those that are local



and national to our everyday life in order to improve their achievement and enhance the knowledge application.

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CHAPTER 18

A MAINTENANCE MANAGEMENT MODEL FOR THE SUSTAINABILITY OF ROAD PROJECTS IN NIGERIA -A PROJECT MANAGEMENT LITERATURE REVIEW

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Abstract

Nigeria Federal Highways have continued to constitute a major gateway for interstate and intra-state movement of people, goods and services. Unfortunately, the deplorable condition of the highways has become a major source of concern to all of its users. The poor state of the federal highways has been attributed to the poor maintenance of the road networks whether new or old. The direct effect of this, includes an elongation of transportation time, increase in transportation cost, wanton loss of human lives owing to road accidents, destruction of vehicles, amongst several others. The whole situation adversely affects Nigeria's economic growth, social and environmental conditions. Thus, this study is an ongoing supervised research in part fulfilment of the requirements of a postgraduate degree in Project Management. The study specifically aims at identifying the maintenance culture of the Federal Emergency Road Maintenance Agency (FERMA) projects, examining the effectiveness of existing maintenance policies of Federal highways in Nigeria, identifying the challenges to effective road maintenance in Nigeria, and the development of an efficient maintenance management model for sustainable performance of Nigeria Federal highways. A mixed research methodology is intended to prosecute this study. In this conference, part of the study's project management literature review involving global and national case studies would be presented. It is proposed that study's research findings would be analysed using of Percentages, Frequencies, and Mean Index Scores (MIS) to determine the degree importance or correlation of the selected factors to achieving the specific research objectives and consequent development of an efficient maintenance management model for sustainable performance of Federal highways in Nigeria. It is hoped that the conclusion made and policy recommendations advanced from this study would reflect research outcomes that expectedly



aligns with the top factors influencing a sustainable maintenance of the Federal Highways in Nigeria.

Keywords: *Challenges, Federal highways, Maintenance, Nigeria roads*

Introduction

Roads are one of the important assets of any country. Besides serving as means of transport for people, vehicles and goods, roads also provide avenues for such service apparatuses as water, electricity, sewerages, etc. (Emeasoba, 2013), hence making it an important necessity for any nation. According to Adepoju (2021), the process of road deterioration commences after a newly constructed road is open to traffic. Therefore, the process can be reduced considerably depending on adequacy and efficiency of measures put in place by the Road Agency. Federal Ministry of Works and Housing (2003), estimate on the annual loss due to bad roads is valued at 80 billion naira, albeit additional vehicle operating cost arising from bad roads is valued at 53.8 billion. These values do not take into account the man-hour losses in traffic due to bad roads and other emotional and physical trauma people plying the roads are subjected to and there is also loss in productivity (Adebayo, 2015). Accordingly, construction projects all over the world are usually faced with challenges which span through the planning of the project, to its final execution (Johnson, *et al.*, 2002; Muhammed, *et al.*, 2022). These challenges amongst others include on-time delivery, quality management, effective leadership and managing available funding (Muhammed, *et al.*, 2022). Consequently, road transport is a critical infrastructure for sustainable development as its efficiency is related consumption, distribution and production (Somuyiwa and Olusegun, 2020). According to National Planning Commission (2018), the structure of road maintenance and management is among the three tiers of government viz: Federal, State and Local Government. Regrettably, local governments that used to be responsible for arterial routes and Trunk C roads' had since failed to perform their responsibility perhaps as they are now taking orders from State governments. The reason for this is because, subservience of Local governments under the State connotes they do not have autonomy. The Nigerian road transport is the one of the overstressed mode of transport infrastructures in Nigeria and this partly due to inadequate and inefficient services of other complementing modes of transport services (Okunola, 2018), as well as insufficient maintenance cost challenges (Muhammad, 2014).

Reviewing the literature shows high maintenance cost due to lower maintenance quality is a global phenomenon in highway projects. Construction Industry Institute, US (CII), conducted a study to define and measure the additional costs due to lower maintenance quality in construction projects and it was found that poor construction quality can add 25% extra to the final project cost (Karimi, *et al.*,



2017; Hussain, *et al.*, 2018). Hussain, *et al.* (2018), averred that Building Research Establishment, UK (BRE) concluded that construction projects built with poor construction quality require excessive maintenance and repair, which can cause an additional cost. According to Koch and Schultz (2019), due to the rapid increase in population in Hong Kong, the Government is concerned about quantity than quality maintenance of construction projects which resulted in the lower maintenance quality of construction projects requiring repair works. It is stated by (Ajao, *et al.*, 2018) that defects are persistent in the construction project of Ghana due to deviation from good maintenance standards. Similarly, Akmam Syed Zakaria, *et al.* (2018) described that certain construction projects in Malaysia fail to achieve the client's satisfaction on the quality maintenance level. It is quoted by (Lee, 2019) that according to the reports of the World Bank, only 20% of road projects in Asian countries are at the desired level of good maintenance. Likewise, in other countries, the construction industry in Malaysia is also recognized by lower maintenance quality. A study carried out by (Khan *et al.*, 2019) confirmed that the construction industry of developing countries is struggling for achieving quality maintenance for a long time. Moreover, (Kamble and Sanadi, 2019) and (Naji, *et al.*, 2018) also stated that construction projects in Malaysia are facing the issue of poor construction quality. Bangladesh's highway network is comprised of 144,403 kilometers and it carries 80 % of the country's freight and passenger traffic, making it one of the significant sectors shearing to GDP. In the overall transport sector shear 10% to Country GDP and employing 2 million people. However, highway projects in Bangladesh also fail to achieve the desired quality maintenance standards (Goh, *et al.*, 2017; Lop, *et al.*, 2017).

Consequently, Okunlola (2018) noted that, Federal Road Maintenance Agency (FERMA) was established to monitor and rehabilitate federal roads in Nigeria but, they lack the funding, equipment, innovation and motivation to execute their jobs. Sally and Natalya (2005) said that postponing maintenance or construction cost increases both direct and indirect costs. If defect on the road is noticed and neglected; the entire section of the road may fail completely and require re-construction at three times or more of the initial cost. South African National Road Agency Ltd (SANRAL) (2004), explained that repair cost for road construction rises to six times the maintenance cost when you neglect road maintenance for three years and eighteen times after five years of neglect. Walter (2016) observed that, the damage to Nigerian roads always start from cracking, potholes either by the edge of the road or at the center. As a result this study thus, critically reviewed the challenges inherent in Federal Highway maintenance in the global context and in the context of Nigeria.



Literature Review

Road Budgetary Allocation in Nigeria

The Nigerian road network comprises federal roads, state roads and local roads (Olatunji and Diugwu, 2013). The Nigerian transport system (transport modes) consists of: 198,000 km of Roads, 3,500 km of Railways, 8,600 km of Inland Waterways and 22 Airports (Chidoka, 2011). The overall efficiency and effectiveness of the transport system depends on the development of these modes and their interfacing/integration (Draft National Transport policy, 2010). Budgetary allocation to the transport system from 1999 to 2018 shows that road infrastructure got a larger share compared with the other modes of transportation. The state of road infrastructure in Nigeria despite the huge allocations of funds to it has become a matter of great concern and interests to citizens and researchers (Farouq, *et al.*, 2017). The failure in maintaining the roads can easily be identified as one of the major factors leading to accidents, increasing cost of transportation and stagnation in the growth of the nation's economy. Okigbo (2012), from his study on the causes of failure of Nigerian highways, lists some of the factors as: poor design and construction, poor maintenance of already built highways, use of low quality materials in construction, poor workmanship, poor supervision of construction work and the plying of heavy traffic on roads they were not meant for. Road networks grew from 6,500 km in 1960 to 10,000 km in 1970 and to 29,000km in 1980 (Ebenezar-Uzor, 2011).

In 1990 Nigeria had 108,000 kilometers of roads out of which 30,000 kilometers were paved, 25,000 kilometers were gravel, and the rest were unimproved earth carrying 95 percent of all the nation's goods and passengers, the roads constituted the most important element in the transportation network. The estimated current total road network is now over 198,000 kilometres (Chidoka, 2011). The responsibility for planning, developing and maintaining the nation's transport infrastructure is divided among the three tiers of Government. Intra-state roads are the responsibility of state governments, while the local governments are required to cater for intra-urban and rural feeder roads, which account for about 66% of the existing road network (Onwughalu, *et al.*, 2018). The federal government is responsible for the national highways which constitute only 17% of the existing road network. In addition, the federal government through its agencies is also responsible for financing inland waterways/river ports, sea ports, railways, airports and pipelines (Draft National Transport Policy, 2010). As it stands today, seventeen percent (17%) of the total road network in Nigeria is owned and managed by the federal government (trunk A roads); another seventeen percent (17%) of the 198,000km road network is owned and managed by the thirty-six states (trunk B roads) while the remaining sixty-six percent (66%) is owned and managed by the seven hundred and seventy-four (774) local government areas (trunk C roads) of Nigeria (Muhammad, 2014).

**Table 1:** Budgetary Allocation to Road Infrastructure (1999 – 2018)

Year	Allocation (Billion)
1999	9,583,000,000.00
2000	36,947,326,332.0
2001	66,867,990,000.00
2002	70,002,773,000.00
2003	55,547,940,000.00
2004	42,607,064,300.00
2005	70,490,562,710.00
2006	67,734,363,765.00
2007	716,126,211.00
2008	67,982,651,723.00
2009	198,618,000,000.00
2010	210,773,218,922.00
2011	128,966,108,230.00
2012	133,000,000,000.00
2013	183,500,000,000.00
2014	133,726,558,986.00
2015	139,579,312,175.00
2016	136,652,935,580.00
2017	279,940,000,000.00
2018	208,296,467,790.00

Source: Budget office of Nigeria, Federal Ministry of Finance

Challenges of Road Maintenance

Different challenges are often encountered in the field in the course of road maintenance (Sita, *et al.*, 2023). Some these challenges are host community interference, encroachments, destruction or defacing of roads furniture, inadequate availability of both heavy and or light construction equipment such as hand roller, Bitumen Spraying machine, Dumper tippers etc., has been making execution of maintenance work very difficult (Sergui, *et al.*, 2023). Also, lack of adequate material



testing laboratories for quality control purposes, insufficient training programs for staff that will furnish them with the most recent international best practice, security challenges in the country and lastly insufficient funding which has been observed as the major problem of the agency which has made her unable to operate within her established blue print (Ezeagu and Ezema, 2022). Adebayo (2015) explored the potentials of Geographic Information System (GIS) in data capture, processing and analysis to produce a GIS-based Road Maintenance Model using Ikeja Road Network in Lagos, Nigeria as a case study. The model was recommended to the Nigerian Federal Road Maintenance Agency (FERMA) and State's own Road Maintenance Agencies.

Research Methodology

A mixed research methodology is intended to prosecute this study. In this conference, part of the full study's project management literature involving critical reviews of global and national case studies would be presented. It is proposed that study's research findings would be analysed using of Percentages, Frequencies, and Mean Index Scores (MIS) to determine the degree importance or correlation of the selected factors to achieving the specific research objectives that would aid in consequent development of an efficient maintenance management model for the sustainable performance of Federal highways in Nigeria.

Project Management Literature Review and Case Studies

Global Reviews

S/N	Author	Scope	Country	Methodology	Findings	Limitation	Practical Implication
1.	Sita, <i>et al.</i> (2023)	Analysing the effect of road performance indicators on penalties for late fulfilment in road service levels	Indonesia	Questionnaire Survey Structural Equation Modelling (SEM) analysis	Results indicated that the road performance indicator in the road preservation program had a significant effect of 77.0% on the determination of PLRSL. In addition, road pavement, drainage, road shoulder, clearance, complementary buildings, and road equipment contributed statistically significant effect on the road	Lack of theoretical review	Contributes to the development of comprehensive pavement handling on road maintenance programs



					performance indicator with values of 88.0%, 81.4%, 80.9%, 79.1%, 78.1%, and 51.3%, respectively.		
2.	Sergui, <i>et al.</i> (2023)	Mining Wastes as Road Construction Material: A Review	Canada	Literature Review	Most of the studies found were conducted using copper MT. Many examples show that the use of mine by-products is an interesting alternative to new materials as aggregates with a treatment. The mining industry can progress in many areas to be eco-friendly (exploration, extraction, treatment, transport, and closing) and to ensure the sustainable development of exploited regions.	Insufficient empirical analysis	Exposed that the use of mine wastes for road construction will have a considerable environmental impact by reducing the volume of waste and offering sustainable raw materials
3.	Percuin and Oboroceanu (2022)	Road infrastructure management system in the republic of Moldova: the correlation between allocated financial resources and road quality	Moldova	Analysis and synthesis, induction, deduction, critical analysis of materials	Investments in transport networks ensure the increase of invested capital compared to that achieved in other fields of activity, based on direct and indirect effects, resulting from cost savings by attracting the necessary resources for the creation of modern road infrastructures. The progressive management of road is based on performance, both programming and the implementation of their maintenance and operational activities, determined in accordance with the defined performance indicators	Absence of theoretical exposition	Exposits the need for effective road maintenance approach in the republic.
4.	Giamberardino, <i>et al.</i> (2022)	Conceptual framework of environmental criteria of public procurements for federal roadwork	Brazil	Literature Review	The findings reveal a low level of compliance with environmental criteria in our sample (around 19%), a value below what is found in the European context. Given current	Too conceptual	Proposed a model that underscores the need to clearly define environmental criteria in bidding terms to foster both



					challenges in developing sustainable roadworks, the proposed model underscores the need to clearly define environmental criteria in bidding terms to foster both sustainable development and the continuous improvement of roadworks.		sustainable development and the continuous improvement of roadworks.
5.	Karagiani (2022)	Road extraction through digital processing and visual interpretation of satellite images	Greece	Landsat 8 imagery, QuickBird imagery and Semi-automatic techniques	Through semi-automatic digitization and object-oriented workflows, the export of the studied part of the road network in vector format was achieved, thus facilitating the process and reducing the required time.	Restrained to Kastora	Expound the importance of using Landsat 8 imagery, Quick Bird imagery and Semi-automatic techniques in road maintenance
6.	Akinyi (2022)	Contractor's capacity and implementation of performance based road maintenance contract projects on class A road in Kenya: A case of Class A2 road by Kenya National Highway Authority	Kenya	Questionnaire Survey, Descriptive Research Design and Inferential Statistics	The finding exposts that the contractors experience amount to 84.5 percent influence on implementation of PBC contracts on Class A Roads in Kenya, contractors financial capacity 90.2 percent, contractors technical capacity 79.2 percent and contractors leadership capacity amount to 90.2 percent	Limited to Class A2 roads in Kenya	Exposts the importance of government allocation of adequate funds for road maintenance
7.	Schmidt, <i>et al.</i> (2022)	Requirements for the use of impact-based forecasts and warnings by road maintenance services in Germany	Germany	Focus Group Discussions	Findings show that the following factors are general user requirements: relevance of information, recognition of spatial and temporal requests, acceptability, comprehensibility, and technical demands.	Absence of theoretical exposition	Expound the IBFs with the extension to provide a benefit for road maintenance services
8.	Shewatatek (2022)	Assessment of Road Maintenance Practices and Administration Approaches: A case study	Ethiopia	Questionnaire and Interview Questions	As a result, based on the data collected and the manual of United States transportation, drainage problems, road walkway problems, patch deterioration, polished aggregate, raveling,	Insufficient Empirical Analysis	Stresses the need for collaborative efforts of universities, colleges, research consultants and road authority is



		in Dire Dawa City, Ethiopia			fatigue cracking, rutting, non-wheel path, wheel path, potholes, transverse cracking, and shoving are significant pavement distresses and problems in Dire Dawa City (DDC), are accepted with more than 50% of respondents.		detected as very important line
9.	Bianchini, <i>et al.</i> (2022)	In-Vehicle Big Data Exploration for Road Maintenance	Italy	Data gathering streams from vehicles equipped with sensors and designing proper exploration scenarios.	Scenarios rely on three precise components as main pillars of the proposed approach: (i) a multi-dimensional model apt to represent the road network and to enable data exploration; (ii) data summarization techniques, in order to simplify exploration of high data volumes; (iii) a measure of relevance,	-	Expound the very essence of the usage of big data in road maintenance
10.	Nakiganga (2022)	Investigation of the applicability of performance based contracting for maintenance of road infrastructure	Uganda	Simple Random Sampling Strategy, Descriptive and Inferential Statistics	The study findings indicated the current forms of contracts currently used for road maintenance activities, it was noted that road maintenance services are carried out once in a while in Uganda and the level of satisfaction with road maintenance services wasn't that satisfactory under the following contracts; framework contracts, labor-based contracts used for the simple routine works like grass cutting, cleaning drainages and finally admeasured contracts	Insufficient empirical analysis	Harps on the creation of an enabling environment is the best way to ensure that the benefits of PBCs are enjoyed by all stakeholders
11.	Hijji, <i>et al.</i> (2022)	6G Connected Vehicle Framework to Support Intelligent Road Maintenance using Deep Learning Data Fusion	Saudi Arabia	Connected and Autonomous Vehicles (CAV) and Convolution Neural Networks (CNN) model	Experiments show the proposed model can achieve state of the art performance in comparison to existing approaches while being simple, cost-effective and computationally efficient to deploy.	Limited to 6G connected vehicles	Federated learning framework for facilitating large scale real-time road surface condition monitoring and support adaptive resource allocation for road



							infrastructure maintenance
12.	Islam, <i>et al.</i> (2022)	Factors affecting operation and maintenance cost budget in highway projects	Malaysia	Questionnaire Survey, five-point Likert scale and mean and relative importance index (RII)	This study demonstrates that poor road design, lack of maintenance plan, high maintenance cost due to lower maintenance quality, poor construction quality, and risk of corruption significantly affect the operation and maintenance cost budget. Among highway components, pavement markings, above the ground bridge (road bridge, pedestrian/ motorcycle bridge), electrical devices, traffic calming devices, traffic and above ground services were rated as the most difficult to operate and maintain.	Absence of theoretical exposition	Provides insight into the major factors of operation and maintenance cost budget and difficulty level of highway components for maintenance
13.	Dawadi, <i>et al.</i> , (2019)	Road Maintenance Practices in Nepal: A Case Study of Malekhu – Mugling Road Section	Nepal	Simple Random Sampling Strategy, Descriptive and Inferential Statistics	This study reveals that strengthening SMDP practice shall be focused on before releasing a long term PBMC and concludes that the most suitable practice in terms of cost quality optimization is a strengthened SMDP as per PBMC standard whereby length worker perform PBMC standard routine, pavement and intervention based repairs due to their reliability during emergency.	Limited to Malekhu-Mugling road section of Nepal	Exposit that PBMC model shall be developed gradually from one year contract to multiyear contracts since there may be high chances of claims and conflicts in four yearlong PBMC.
14.	Hassan (2018)	Road Maintenance in Africa: Approaches and Perspectives	South Africa	Literature Review	Result posit that considering the current situation in most African countries, to a great extent the level of road maintenance's effort can be said to be comparatively high to the overall economic size, yet these efforts remain little when	No empirical analysis	Emphasize the establishment of the road fund has been a great contribution to the success recorded.



					compared with those of other developing countries around the world.		
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National Reviews

S/N	Author	Scope	Country	Methodology	Findings	Limitation	Practical Implication
1.	Omowumi, <i>et al.</i> , 2022	Effect of Poor Road Maintenance on Ureje/Federal Polytechnic Ado-Ekiti Axis, Ado-Ekiti, Ekiti State, Nigeria	Nigeria	Oral Interview Personal Observation and Statistical Tables	Findings posit that routes are not adequately accompanied with drainage ways; some parts have drainage while others do not have or are being blocked. This in essence, leads to over retaining of runoff water from any source, directly on the surface of the route, thereby leading to its degradation. Combination of both poor drainage ways and heavy traffic movement on the route also leads to the wear down of the road network.	Absence of empirical analysis	Stresses the need for the awareness of the benefits of road maintenance activities
2.	Ezeagu & Ezema (2022)	Deterioration and Failure Rates of Maintained Roads in Nigeria	Nigeria	Road Condition Survey,	It was observed that beyond 12months, Benin-Asaba and Warri-Benin roads experienced 2% and 5% failure rates while Asaba-Illah recorded 30% failure rate within a 12month period. These failures were attributed to heavy traffic with heavy duty wheel.	Insufficient empirical analysis	Expresses the challenges of road maintenance in the field and remedial measures for highway maintenance
3.	Richard (2022)	SWOT Analysis of Nigerian Roads: A Synopsis on Benin-Auchi Road	Nigeria	SWOT method and Confrontation Matrix	One of the results obtained reflected poor commitment (in terms of funding) towards the maintenance, rehabilitation and reconstruction of the road which was almost impassable.	Limited to the Auchi Road project	Reinforces the need for road infrastructure funds proper monitoring
4.	Akpan (2022)	Application of Geographic Information System (GIS) and Multi-Criteria Decision Analysis (MCDA) to planning and prioritization of rural roads in Nigeria	Nigeria	Questionnaire Survey, Multi-Attribute Utility Theory (MAUT), The analytical hierarchical procedure (AHP)	The data show that the top-5 major challenges to the development of rural road infrastructure in the study area as noted by our respondents are: non-release of funds to contractors; use of rural road projects as political tools and abandoning the roads; poor planning for rural road development; misappropriation and embezzlement of public funds meant for road construction; and lack of funds for maintenance of roads	Limited to GIS Application	Exposit the importance of GIS and MCDA to rural road planning and prioritization in Nigeria



5.	Agara, <i>et al.</i> (2022)	Assessment of Factors that Necessitating the Preference in the Use of Reinforced Concrete Pavement to Asphalt Pavement on Road Construction in Ebonyi State, Nigeria	Nigeria	Census Method, Questionnaire Survey, Cronbach's Alpha, Correlation	Analysis method as ranking of the factors that necessitating the preference in the use of reinforced concrete pavement to asphalt pavement in road construction in Ebonyi state tool model were used. The research findings show that the reinforced concrete pavement appear to increase effectiveness but reduce instability, available coarse aggregate and available reinforced concrete rigid construction technology in Ebonyi state	Restricted to Ebonyi state	Stresses the need for apposite punitive move must be made by professional authorities once road construction project is awarded to make
6.	Oluwafunmilola <i>et al.</i> (2022)	Critical failure factors and prospective solutions of construction project in Nigeria: case of Bida–Minna road project	Nigeria	Questionnaire Survey Relative Importance, Kruskal Wallis test Index (RII) and Spearman Rank Correlation	The average scores of these factors ranges between 0.609 and 0.686. The least factors were regarded as minor and were referred to as lack of resources and external forces. These factors were averagely rated very-low (0.577 and 0.593) by all participants and lack of resources according to the respondents was regarded as insignificant factor causing delay but was linked to the chief delay factors, which can be traced back to insufficient funds to mobilize resources, as such, work progress were hampered on site.	Lack of theoretical exposition	Posits that the parliament should make laws that would give independence to technocrats that are charged with the execution of government projects from the political interference
7.	Adepoju (2021)	Analysis of road transportation infrastructure construction and maintenance for sustainable development in South-Western Nigeria	Nigeria	Interview, purposive and incidental sampling techniques	The effects of bad roads include: road crashes (27%), high vehicle maintenance cost (21%), capital flight (17%), passengers' discomfort (14%), high transportation cost (11%) and drivers' fatigue (10%)	Restricted to the South Western Nigeria	Harp on the need for standardized procedure for road construction project
8.	Ngene, <i>et al.</i> (2020)	Influence of GIS on sustainable pavement maintenance: a comparative review	Nigeria	Literature Review	The study revealed that sustainable methods of pavement maintenance have neither been incorporated in policy nor practices involving highway pavement management in most African nations. And as such, it encourages respective road agencies to integrate GIS-based techniques into road maintenance management at all	Limited to conceptual review	Exposit the importance of the usage of GIS-based techniques in sustainable pavement maintenance



					functional levels to promote sustainability.		
9.	Musa, <i>et al.</i> (2020)	Road infrastructure funding using the PPP via the road tax fund model RTF	Nigeria	Questionnaire Survey and Relative Important Index (RI I)	From the result obtained; 75% of the companies are willing to fund roads, 15% remain undecided with only 10% saying no to it. The option of toll was also sought.	Limited empirical analysis	Stresses the need for improvement in road funding
10.	Odewale (2020)	Local Government and Road Infrastructure Delivery	Nigeria	Literature Review	The paper discovered that local government roads constitute the highest trunks of roads, and which got increasing day-by-day due to its proximity to the populace, and yet, the most negligible trunk of road in Nigeria.	Limited to conceptual review	Reinforces the need for local government road infrastructure delivery.
11.	Okoro and Obiora (2020)	Maintenance culture and sustainable development in Africa	Nigeria	Literature Review	The study expound that idea of maintenance culture, in the context of this discourse, borders on management and resource control and correlates with the factor of continuity in administrative policies and programmes. Save undermining Africa's socio-political progress, the lack of maintenance culture is causally linked to other factors militating against sustainable development in Africa.	Too conceptual	Exposits the essence of maintenance culture and sustainable development
12.	Balogun (2020)	A road bridge maintenance management framework: a case of Nigeria road network	Nigeria	Descriptive and Inferential statics	Findings revealed that the framework would aid the Nigerian Government and relevant agencies with making effective budgetary plans and with the planning of maintenance work.	Limited to bridge infrastructure	Reinforces cultural shift plus monetary savings and benefits of implementing the framework
13.	Onokala and Olajide (2020)	Problems and challenges facing the Nigerian transportation system which affect their contribution to the economic development of the country in the 21st century	Nigeria	In-depth literature search, oral interviews and field observations	The major result of the predominant use of road transportation over all the other modes are environmental problems of road transportation and high frequency of road traffic accidents on Nigerian roads.	Too conceptual	Stresses the problem of inefficiencies at the ports
14.	Usoro (2020)	Implementing Change in a Public Organisation: An Action Research	Nigeria	ATLAS.ti	It emerged that the GIS was more than a stand-alone product as was earlier assumed. It was found to be part of a much wider system where everything was connected to something	Limited to the adoption of the GIS in FERMA	Emphasize the criticality of leadership in technology enabled



		Inquiry of Information Technology Implementation and Adoption			else, and one part could not be removed without consequences to the other.		change
15.	Apeh (2020)	The Sustainability of Concessioning Itobe-Ajaokuta Expressway to the Private Sector	Nigeria	Secondary Data and Descriptive statistics	The study found that a total of 78,690 vehicles use the road daily. The vehicles were categorized into six (6) different groups, and tolls to be paid allocated to each of them. From the research carried out, a total of One hundred and thirty four million, four hundred and eighty thousand, six hundred naira (#134, 480, 600), could be realized from toll charges annually.	Insufficient empirical analysis	Stresses the sustainability of Concessioning Itobe-Ajaokuta Expressway to the Private Sector
16.	Ogbu and Eze (2019)	Federal vs. State Roads: Assessing the Influence of Intergovernmental Relations Models on Road Maintenance in Nigeria	Nigeria	Convenient Sampling Technique, Likert scale questionnaire, Cronbach Alpha, frequency, percentages and multiple linear regression analysis	The findings revealed that the partnership model and functional dualism model of intergovernmental relations significantly influence road maintenance in Nigeria.	Too conceptual	Emphasize the need for a better connection between federal and state roads
17.	Ikpeazu & Aaron (2019)	Bridging the Gap in the Funding Regime for Road Infrastructure in Nigeria	Nigeria	Literature Review	Result revealed that timely maintenance is much less expensive than delayed maintenance. If roads can receive maintenance at the appropriate time, then the overall cost of maintaining the roads is less than if roads deteriorate to the point that requires reconstruction rather than less expensive treatments such as surface dressings.	Absence of empirical analysis	Expose the inadequacies of the road infrastructure funding in Nigeria
18.	Ogbu and Adindu (2022)	Direct risk factors and cost performance of road projects in developing countries Contractors' perspective	Nigeria	The multivariate structural equation modelling technique was used to analyse purposively obtained data from indigenous	It was observed that a significant positive relationship exists between the aggregate project risk, i.e. project risk index of cost (PRIC) and cost performance of the projects. Significant positive relationships were also found to exist between identified cost risk centres and PRIC and between risk factors and cost risk centers. The risk center site	-	Indicates that future studies of risks in road project should aim to obtain project risk indices of costs for the projects.



				contractors that recently completed road projects in Nigeria.	environment and location contributes the most to PRIC.		
19.	Oroleye (2019)	Appraisal of road transport policy reform in Nigeria: a case of infrastructural deficit	Nigeria	interview administration, purposive sampling technique, in-depth interview and descriptive statistics such as percentages, tables and frequency distribution and graph	The results revealed that the road transport system reform in Nigeria was structurally deficient as it did not address all social classes especially the physically challenged and the elderly among others	Restricted to FERMA	Exposit the need for road infrastructure reforms
20.	Hamza, <i>et al.</i> (2019)	Transport infrastructure development in Nigeria; a case study of Kebbi, Sokoto and Zamfara States	Nigeria	Qualitative research approach by reviewing related literatures.	This research discovered the following critical factors that could contribute to the development of transport infrastructure in Nigeria, such as good planning, coordination between federal and state governments on transport policies, availability of technical expertise, assets management and eradication of corruption in awarding contracts and project execution.	Absence of empirical analysis	Stresses the pivotal need of infrastructure development to enhance Nigeria' development
21.	Russ, <i>et al.</i> (2018)	Evaluating Transport Infrastructure Projects in Low Data Environments: An Application to Nigeria	Nigeria	Landscan population data, Simulation	Result finds that reducing transportation costs in Nigeria would lead to a significant increase in economic activity in certain areas. It could also significantly impact household wealth and lead to poverty reduction, though there is considerable spatial variation in the magnitude of these benefits that would need to be considered in determining investments in road infrastructure improvements.	Limited to secondary data	Demonstrates a pragmatic, though rigorous, approach for assessing transport infrastructure benefits.
22.	Emoh, <i>et al.</i> (2017)	Public-Private Funding and Road Infrastructural Development in Nigeria	Nigeria	Literature Review	Findings indicate that lot of work still needs to be done in the areas of training as stakeholders must be conversant with rudiments of PPP, and also orientation of Nigerians on PPP and indicate further that The success of PPP	Too conceptual	Examines road infrastructure development through Public-Private Partnerships in Nigeria



					be contingent largely on effective leadership.		
23.	Orugbo, <i>et al.</i> (2016)	Alignment model for trunk road network maintenance outsourcing	Scotland	Comprehensive literature review, SWOT analysis and a comprehensive literature review	The result of the SWOT analysis and comprehensive literature review establishes fresh insight into road maintenance outsourcing dynamics. The presented road maintenance outsourcing alignment model provides adequate pathways that could assist road authorities identify the most appropriate road maintenance outsourcing variant for road maintenance procurement.	Insufficient data analysis	Reinforced the need for trunk road network maintenance
24.	Effiom and Ubi (2016)	Deficit, decay and deprioritization of transport infrastructure in Nigeria: policy options for sustainability	Nigeria	Descriptive and Theoretical Methodological Approaches	This study demonstrates that road infrastructure is not only deteriorating but also suffers from a twin evil of deficit and deprioritisation in the public sector's preferential scale—a state of indifference of sorts. Long and short term policy choices have to be made to urgently address the issue. In the short term, infrastructure concessions,	Limited to descriptive statistics	Exposit the deplorable condition of the roads in Nigeria and Sub-Saharan Africa
25.	Obunwo (2016)	A framework for enhancing project quality and customer satisfaction in government road construction projects in Rivers State, Nigeria.	Nigeria	Literature Review, Quantitative Survey and Stepwise Multiple Regression Analysis	The results showed that a strong, positive and significant relationship existed between the attributes of project quality and customer satisfaction with project quality explaining 54.8% of the variance in contractor re-patronage and 61.8% of the variance in contractor referral. Performance was however found to have the greatest effect on contractor re-patronage ($R^2=.550$, adjusted $R^2=.548$) while aesthetics had the highest effect on contractor referral ($R^2=.572$, adjusted $R^2=.571$).	Restricted to River State	Advocates for an adoption of the framework
26.	Nkom (2016)	Harnessing Community-Based Initiatives for Rural Road Maintenance in Nigeria	Nigeria	Literature Review	The results of this experiment have shown that road maintenance cooperatives, properly formed and appropriately supported, can provide a viable community-based strategy of maintaining rural roads.	Absence of empirical analysis	Posited that government's institutional machinery for rural road maintenance in Nigeria is not working



27.	Purokayo (2016)	Economic implications of transport infrastructure on the Nigerian economy: a study of road transport choice and cost of doing business	Nigeria	Questionnaire Survey, Multinomial logit and ordinary least square (OLS)	The results of multinomial logit (marginal effects) show that worsening conditions in the terrain affects transport choice, preference of individuals and cost of doing business and has implications of price of transportation, agricultural productivity, and cost of transactions.	Limited to qualitative analysis	Recommends the need for higher prioritization for roads in the budget space
28.	Nwannebu and Onuka (2015)	Transforming road infrastructure in Nigeria – re-visiting the public private partnership option	Nigeria	Literature Review	Result indicates that the government should develop a template that defines the rules of engagement for public-private partnership in the road transport system following international best practices.	Absence of empirical analysis	Reinforce the need for public-private partnership that can unlock the enormous potentials of road infrastructure network
29.	Siyan, <i>et al.</i> (2015)	The Impact of Road Transportation Infrastructure on Economic Growth in Nigeria	Nigeria	Primary, secondary data and Ordinary Least Squares method	The result shows that the transport sector positive impact on the economic growth in Nigeria. Based on the findings, it was suggested that the government should come up with sustainable and implementable road development and maintenance policies that will ensure good access and flow in Nigeria.	Insufficient empirical analysis	Emphasize level of good and accessible road transportation

Discussion of Findings

From extant project management literature in relevant areas of this study, Karagiani (2022), posits that contractors experience amount to 84.5 percent influence on implementation of PBC contracts on Class A Roads in Kenya, contractors financial capacity 90.2 percent, contractors technical capacity 79.2 percent and contractors leadership capacity amount to 90.2 percent in his study of contractor's capacity and implementation of performance based road maintenance contract projects on class A road in Kenya: A case of Class A2 road by Kenya National Highway Authority. Schmidt, *et al.* (2022), shows that the following factors are general user requirements: relevance of information, recognition of spatial and temporal requests, acceptability, comprehensibility, and technical demands. Shewatek (2022), exposed that on the basis of the data collected and the manual of United States transportation, drainage problems, road walkway problems, patch deterioration, polished aggregate, ravelling, fatigue cracking, rutting, non-wheel path, wheel path, potholes, transverse cracking, and shoving are significant pavement distresses and problems in Dire Dawa City (DDC), are accepted with more than 50% of respondents. Giamberardino, *et al.* (2022), reveals a low level of compliance with environmental criteria in its sample



(around 19%), a value below what is found in the European context. Given current challenges in developing sustainable roadworks, the proposed model underscores the need to clearly define environmental criteria in bidding terms to foster both sustainable development and the continuous improvement of roadworks. Percuin and Oboroceanu (2022) assessed road infrastructure management system in the Republic of Moldova: the correlation between allocated financial resources and road quality investments in transport networks ensure the increase of invested capital compared to that achieved in other fields of activity, based on direct and indirect effects, resulting from cost savings by attracting the necessary resources for the creation of modern road infrastructures. The progressive management of road is based on performance, both programming and the implementation of their maintenance and operational activities, determined in accordance with the defined performance indicators. However, Sergui, *et al.* (2023) believes that the use of mine by-products is an interesting alternative to new materials as aggregates with a treatment. The mining industry can progress in many areas to be eco-friendly (exploration, extraction, treatment, transport, and closing) and to ensure the sustainable development of exploited regions.

In Nigeria, Omowumi, *et al.* (2022), opined that routes are not adequately accompanied with drainage ways; some parts have drainage while others do not have or are being blocked. This in essence, leads to over retaining of runoff water from any source, directly on the surface of the route, thereby leading to its degradation. Combination of both poor drainage ways and heavy traffic movement on the route also leads to the wear down of the road network. Ezeagu and Ezema (2022), examined deterioration and failure rates of maintained roads in Nigeria and observed that beyond 12months, Benin-Asaba and Warri-Benin roads experienced 2% and 5% failure rates while Asaba-Illah recorded 30% failure rate within a 12month period. These failures were attributed to heavy traffic with heavy duty wheel. Richard (2022), noted that the top-5 major challenges to the development of rural road infrastructure in the study area as noted by our respondents are: non-release of funds to contractors; use of rural road projects as political tools and abandoning the roads; poor planning for rural road development; misappropriation and embezzlement of public funds meant for road construction; and lack of funds for maintenance of roads. Agara, *et al.* (2022), averred that the factors that necessitating the preference in the use of reinforced concrete pavement to asphalt pavement in road construction in Ebonyi state tool model includes reinforced concrete pavement appear to increase effectiveness but reduce instability, available coarse aggregate and available reinforced concrete rigid construction technology in Ebonyi state. Oluwafunmilola, *et al.* (2022), determined the critical failure factors and prospective solutions of construction project in Nigeria: case of Bida–Minna road project and the average scores of these factors ranges between 0.609 and 0.686. The least factors were regarded as minor and were referred to as lack of resources and external forces. These factors were averagely rated very-low (0.577and 0.593) by all participants and lack of resources according to the



respondents was regarded as insignificant factor causing delay but was linked to the chief delay factors, which can be traced back to insufficient funds to mobilise resources, as such, work progress were hampered on site.

Conclusion and Recommendations

This study critically reviewed the extant literature on the challenges of Federal Highway maintenance and concludes that there is a dire need for a renewed road maintenance framework (model) that is simple and easy to interpret which would aid the work of the government with respect to road maintenance projects. The proposed road maintenance model that would be developed at the end of the full research is expected to also expose the need for efficiency in FERMA with respect to their surveillance of the status of the Federal Highways. In the light of the above, this study therefore recommends an increasing need and imperatives for the creation of a political will by the government to ensure that the road maintenance framework is followed to ensure a seamless road maintenance works especially with respect to durability, timeliness, cost optimality, and quality standards in line with international best practices. As an ongoing supervised postgraduate research, it is hoped that the conclusion made and policy recommendations so far advanced from this study, would expectedly reflect research outcomes that aligns with the top factors influencing a sustainable maintenance of the Federal Highways in Nigeria.

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CHAPTER 19

PRINCIPAL'S ADMINISTRATIVE SKILL: PRECONDITIONS FOR SECONDARY SCHOOL EFFECTIVENESS IN OYO STATE NIGERIA

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Abstract

The continuous decline in the quality of secondary education has been of great concern to educationists and other stakeholders. This trend has its implication on the outputs of the system which are the students. The act of indiscipline among the teachers and the students could be traced to poor principal's administrative skills. The principal as the head and planner in the school determines how coordinated the activities in the school will be. This paper focuses on the principal's administrative skills as preconditions for secondary school effectiveness. The paper explains the meaning of administrative skills which include organizing, communicating, team work, time management, financial management, monitoring and evaluating, which are referred to as the qualities required for effective managerial function. It reveals principal as an administrator which must be able to harness all the available resources in school and ensure they are mobilized for the achievement of school goals and objectives. It focuses on school effectiveness and effect of principals' administrative skills which include organized school activities, cordial relationship among the staff, disciplined teachers and well behaved students, proper record keeping in school, cordial relationship between the school and the community, effective teaching in school, availability of learning materials and statutory record document, proper communication flow in school and improved learning outcome.

It concluded that the principal as the administrative head of secondary school must be active and efficient, if there will be achievement of school goals and



objectives. He/She must possess the skills of organising, communicating, team work, time management, financial management monitoring and evaluating.

Keywords: *Principal, Administrative skills, Secondary school effectiveness*

Introduction

Education plays a very vital role in the life of a man because it develops in a child the capacity for personal development as well as useful living within the society. According to Birabil and Ogeh (2020), education still remains the engine room for the growth and development of any nation. Secondary education is the second level of formal education, which absorbed the primary school leavers. It determines the choice of a career of every recipient (student) because at this level a student is introduced to different fields of study from which a choice is made. However, the effectiveness of this level of education has been the concern of the educationists and other stakeholders because the effectiveness of the system determines the quality of the outputs which are the students.

Secondary school effectiveness can be achieved through the proper coordination of both human and non-human resources in the school which is the major function of a principal. The human resources are both teaching and non-teaching staff in the school while non-human resources are the monetary and non-monetary resources in the school.

Therefore, for effectiveness and achievement of secondary education goals and objectives, principal administrative skills are very crucial. Ayodele, Buari and Oguntuase (2016) argued that the use of a set of administrative skills by principal is informed by the fact that principals are to bring all round development in to the school in order to improve students' academic performance.

Meaning of Administrative Skills

Administrative skills are the qualities required for effective managerial functions. They are the skills utilized by the leader of an organization to ensure proper coordination for the attainment of the organizational goals and objectives. Administrative skills include organizing, communicating, team work, time management, monitoring, evaluating among others. How an administrator applies these skills determine the running of an organisation and how well the objectives are attained.

Administrative skills can be likened to managerial skills possessed by a leader. Fullan (2005), defined managerial skills as the competencies required for effective



and efficient planning, staffing, organizing, coordinating, controlling and decision making. Also, Car (2005), Elmore (2005), Lezotte and Mckee (2006) stated that managerial skill include the ability to create a healthy school, culture for continual improvement in quality education, team work with others, communicate good policies and procedure to staff, modify practice and school structure to accommodate new policy expectation, provide curriculum leadership opportunities,, ensure good principal-staff relationship and guide specific initiative to improve students achievement. This implies that which an organization will be smoothly run and achieve its stated objectives, administrative skill must be possessed by the leader because these skills through the leader ginger the workers' efficiency, motivate their actions and enhance their performances.

Kamoche (2013) argued that the school principal should be able to set clear vision for the school, as well as communicate the vision to the students, support its achievement by giving instructional leadership, provision of resources and being visible in every part of institution. This implies that when there is proper planning and organising by the principal, he/she will be able to forecast the future and bring about organised school activities and peaceful atmosphere in the school. Also, communicating skill of the principal promotes proper flow of communication from the head to the subordinate as every member of staff will be well informed about the happenings in the school. If a principal properly applied team work skill, it will promote cordial relationship among the members of staff as well as cordial relationship between the school and the community as there will be clarification of roles and responsibilities as well as delegation of authority to appropriate members of staff.

Also a principal that is skilled in coordinating and controlling ensures discipline in the members of staff as well as the students, this discipline brings about teachers' punctuality and regularity in class while monitoring and evaluating skills of principal bring about the overall result of school effectiveness which is improved learning outcome. Ayodele, *et al.*, (2016) were of the opinion that there are lots of strategies that could be employed by principals in order to have a grip of the whole school and consequently move the school forward academically. These range from monitoring, of teachers' activities, use of committee system in schools, performance appraisal, participatory decision making, delegation of duties and regular staff meeting.

Principal as an Administrator

A principal is the head of a secondary school that is expected to coordinate all the affairs and activities in the school. He is the coordinator of both human and non-human resources, he is in charge of running day-to-day activities of a school and as a



school leader, his coordination determines the success of a school and determines the extent to which school objectives are attained.

The principal as the school head must be able to harness all the available resources in school and ensure they are mobilized for the achievement of school goals and objectives. He must be able to monitor the teachers to carry out their daily responsibilities effectively with discipline as well as monitor the students to be properly coordinated, disciplined and yield to instruction in the teaching learning process. Fagbamiye (2004) stated that the principal is essentially an organiser and implementer of plans, policies and programmes meant for specific education objectives.

The principal as the administrative head should be able to set up plans for daily routines, develop policies and programmes for smooth running of the school and ensure proper implementation of the policies and programmes for the attainment of school goals and objectives. Azubike (2009) reiterated that the school principal is at the helm of implementation of education policies in school. The principal must monitor the teachers in school to ensure they are effective in their performance ranging from their punctuality, record keeping, preparation of their lesson plan, punctuality and regularity in class, classroom management, coverage of syllabus with the students among others as these contribute to school effectiveness and achievement of school objectives.

Babayemi (2006) highlighted the indicators of an effectively administered secondary school which include: disciplined staff and students, students and teachers staying in school for classes during school hours, drastically reduced examination malpractice, keeping all school records, high performance in junior and senior secondary school certificate examinations, exemplary leadership by the principal, clean school environment and parent rush for admission of their children into the school. The principal as an administrator must ensure the school has enough teaching and learning resources like chalk, instructional aids, textbooks and note books for teachers among others and ensure good and healthy relationship between the school and the community. Also, he must maintain cordial relationship with the members of staff and see to their welfare so as to promote their effectiveness which will definitely result into improvement of the students' learning outcome. Mohammed, Etho and Edu (2020) explained that a good principal is balanced within all his roles and work hard to ensure that he is doing what he feels is best for all constituent involved. Also, Nwkwo, Cimezee and Ezeanolue (2021) asserted that the principal ensures that school facilities remain safe for students and faculty and plan regular maintenance of school ground and equipment.

The principal must be able to carry the teachers along in the school activities; S/he should involve them in decision making, delegate authority, see to their welfare and ensure peaceful atmosphere among the members of staff. Ayodele, *et al.*, (2016) stated the strategies that could be used by the principal to have a grip of the whole



school and move the school forward academically; these include monitoring of teachers' activities, use of committee system in schools, performance appraisal, participatory decision making, delegation of duties and regular staff meeting. Therefore the activities of a principal as an administrator which involve his coordination of school activities, his relationship with the members of staff, coordination of non-monetary resources and maintenance of relationship with the school environment matters in achievement of secondary school effectiveness and goal attainment. Kumar and Baumert, (2011) stated that principal as a teacher and leader of the school should be dynamic and believe in change and have capacity to prepare future leaders and develop the skills that may be needed to succeed in the future. This can only be achieved through secondary school effectiveness.

Secondary School Effectiveness

School effectiveness refers to conduction of all the school programmes in such a way that facilitates the achievement of set goals and objectives. It is determined by the activities of the management, members of staff, students as well as the relationship of the school with the community. It is the ability of a school to accomplish the educational objectives. It can be viewed from the aspect of students' academic achievement or the relationship of the school with the environment. Singha and Sikdar (2018) were of the opinion that school effectiveness is not only the achievement of the students in their subject, it depends on other variables including the academic achievement, responsiveness of the school to the community, school environment and the activities of the members of staff. This implies that if the school will be effective, there must be proper coordination and monitoring of the staff as well as the students and cordial relationship of the school with the community.

Joseph (2017), in *eduresearch* 101, stated 8 key factors of school effectiveness which are:

1. Strong effective principal leadership
2. Sustained focus on instruction and learning
3. Safe and positive school climate and culture
4. High expectation for all students and staff
5. Effective use of students achievement data
6. Teaching practice
7. Productive parent involvement
8. Building staff skills

Based on the above listed factors the key to secondary school effectiveness is strong effective principal's leadership, if the principal fails to be effective in his



administration the activities of the teachers will be affected, some of them might fail in performing some of their functions like effective teaching, record keeping students' monitoring among others, while some might be irregular in school or not punctual in class. Therefore, the principal must be up and doing and alive to his responsibility for school effectiveness to be achieved. To actualize the factors of school effectiveness enumerated above, possession of administrative skills by the principal is very central.

Effects of Principal's Administrative Skills on Secondary School Effectiveness

Principal plays significant role in determining school activities. S/he determines the work atmosphere and the attitude of members of staff as well as the students in the school. The principal is a great determinant of school effectiveness because the coordination of both human and material resources in school determines the extent of the achievement of the school goals and objectives.

According to Ogundele, Sambo and Bwoi (2015), there are three (3) administrative skills that are pertinent to effective school management, these are: leadership skills, personnel management skills, and financial management skills. The application of these skills by the principal determines the effectiveness of the school. Leadership skills by the principal involves developing policies and programme for the students and ensure proper monitoring of all the members of staff in carrying out the programmes as well as supervision of teaching and learning in school for better learning outcome. A personnel management skill involves proper coordination of human resources through proper channeling of information, definition of roles and responsibilities and delegation of authority for school effectiveness. While financial management skills involve preparation of school budge, keeping of proper and accurate financial management records. The ability of a principal to apply the administrative skills adequately will go a long way in promoting school effectiveness.

Ogundele, *et al.*, (2015), postulated that, the principal is a standard setter, one who leads in the development of an aspiration and expectation on the part of both teachers and pupils to do good work. This implies that the principal sets the teachers in motion through his developed programmes, laid down procedures and through supervision of teachers' activities as well as inculcating discipline and readiness to work in the students.

The following are the likely outcome of good principals' administrative skills on secondary school effectiveness:

Organised school activities: Extracurricular activities refer to any kind of activities that are outside the scope of lessons predetermined in the curriculum, such as sports,



music, drama or debates, intended for various reasons including reduction of boredom, general health improvement and socialization, (Usman, Uduak, Raheem and Aliu, 2022.) It provides an opportunity for increased physical activities of the students with consequent short- and long-term health benefits. School science clubs are also means of getting outside the classroom and interacting with the natural environment, it equally raises the interest of the younger generation (the students) to love and embrace science and technology and this is done by getting them belong to and actively participate in college clubs especially science-related clubs like the Junior Engineers, Technicians and Scientists (JETS) club which are also part of school organised activities, (Nwankwo and Okoye, 2015). Clubs and societies (when they are viable in schools) ensure the arousing and re-awakening the interest of students in the study of the basic core subjects such as Mathematics, practical-oriented science and vocational subjects. If the principal as a school administrator possesses organising skills, it will help in organising different activities outside the curriculum for the students and this can be facilitated by proper communication in the school system which assists the principal in carrying the members of staff along for proper achievement of the programme

Peaceful Atmosphere in School: For any nation to be transformed, developed and progressed such a nation must be peaceful, this is also applicable to any school environment. School being a place of learning and impartation of knowledge needs to be peaceful in order to ensure that effective learning takes place. It is the duty of the principal as the administrative head to ensure that there is peace in the school environment (Ogundele, M. O., Musa, J. M. and Jimba, D. N.). He can introduce various school-based programs generally in the attempt to challenge and change these norms that cause disunity and reduce the level of various forms of aggression among peers. The application of planning and use of team work skills by the principal can go a long way in achieving peaceful atmosphere in school because all the workers will be carried along in all the school programmes and events, therefore they will feel belonged and cooperate with the school administrator without any grudge or contention.

Cordial Relationship among the Staff: The principal occupies a relevant position in the school structure. Being the leader of a multitude of professionals, certified teachers, and the manager of a cadre of classified personnel, the principal should establish cordial relationships with his or her staff, and equally ensure cordial relationship between the staff in the school and also between the staff and the students (Nwangwa and Barrah, 2021). The relationship between principals and their staff (teachers) has brought about great achievement to the benefit of the student and the society. If the principal as the school administrator does not have a good administrative skill to ensure good relationship with the staff, education might not be



properly conveyed because quality relation produces quality result. Principal-teacher relationships vary greatly among schools and even among teachers in the same school. Those relationships to a very great extent affect students' achievement in schools. In addition, the manner in which staff members worked together as a group significantly influences students' outcomes in schools.

Disciplined Students and well-behaved students: Discipline could be defined as the training that enables an individual to develop an orderly conduct and self-control as well as self-direction. Discipline is the systematic instruction given to a person or a student. It is probably the most difficult and unpleasant part of teaching profession, the teacher is faced with the challenges of educating, socializing, empowering and certifying students, with the help of good teaching, (Umaru, Ambo and Tabitha, 2017). School discipline is important because it sets a congenial atmosphere needed for teaching and learning.

Principals with good administrative skills will ensure that the students are disciplined and well behaved. Rules are set in schools and students are made to abide by these rules, and these rules may, for example, define the expected standards of clothing, timekeeping, social behaviour and work ethics. Principals' administrative skill will ensure that discipline is impacted on the students, it will also impact the learning process by creating a stress-free environment for apportioning time to various activities, improves planning through observing and maintaining a set daily routine, moulds students' character and enhances their motivation, enables the setting of good examples and positively contributes to better grades, (Aliya and Mohd, 2018).

Proper flow of communication from the head to the subordinate: Communication is a two-way process of passing ideas, feelings and messages from one person to the other in order to achieve the set goals in the organization. Communication is very essential in every organisation and the secondary school set up is no exception. The inter-relatedness of the school activities makes communication a matter of top priority and first-line item which serves as vital tool in the process of linking people to achieve a common purpose, by developing thoughtful ideas, sharing information and attaining mutual understanding of the subject matter conveyed between the top management (principal, vice principals) and other members of staff (teachers) in the task of inculcating knowledge, skills and values that will make students achieve educational goals, (Ayeni and Akinola, 2020). In the school system, there is need for proper flow of communication from top to bottom in order to ensure productivity. This can simply be achieved in school by proper application of communicating skill by the principal.



Proper Record Keeping in School

Nwosu (2013) defined school records as an item or information put into a temporary or permanent use by either the school, the students or for the general public. Record keeping is very essential in a school system be it primary, secondary or tertiary. It is very essential because it promotes the effectiveness of the system, it serve as reference in determining both past and present performance of the students as well as the members of staff by giving detailed facts and information about them and it helps the management in proper planning towards promoting school effectiveness. Some records are to be kept by the school management or administrator while some are to be kept by the teachers.

Anyaga (2016) listed some of the statutory records kept in secondary school as:

- (i) admission register
- (ii) attendance register
- (iii) log book
- (iv) punishment book
- (v) visitors book
- (vi) syllabus
- (vii) the scheme of work
- (viii) diary of work
- (ix) lesson notes
- (x) students' academic records
- (xi) staff movement book,
- (xii) staff attendance
- (xiii) testimonials, and
- (xiv) inventory of physical facilities.

This proper record keeping in school can only be achieved through proper monitoring and supervision of the principal as an administrator in school. If the principal is too lenient and lack proper administrative skills, some teachers might refuse to write their lesson plan, mark the students' register on daily basis while others might leave the school at will without considering what the effects might be.



Cordial Relationship between the School and the Community

This refers to the rapport between the school and the environment where the school is situated which must be peaceful and harmonious. Ibiam (2015) defined a school as a social system with semi permeable boundary that allows interactions and exchange of resources with its external environment. This relationship can only be created by the principal, if the principal have good relation with the members of staff, it will extend to the environment where the school is located. Therefore this is one of the likely effects of principals' good administrative skills because his sense of humor, friendliness and kindness to the community will definitely contribute to the effectiveness of the school. Gilta (2009) postulated that cordial relationship between the school and the community is a pre-requisite for achieving a meaningful educational objective in our community and the nation at large.

Punctuality and Regularity of Teachers to Class

This refers to how often and how early a teacher attends to his or her class, a teacher might be punctual and not regular in class as well as being regular and not punctual.

A teacher that gets to class ten minutes to the end of the class is not punctual while a teacher that gets to class early but not always present is not regular. This two can only be achieve in a school through effective monitoring and supervision of the principal as the school administrator, an adage says punctuality is the sole of the business; some teachers might willingly be late to class if there is no proper monitoring. Therefore punctuality and regularity of teachers to class is one of the effects of good principal's administrative skills.

Availability of Learning Materials, Statutory Record Documents like Chalk, Diary, and Register

Learning materials and statutory records can only be available in school if the principal is very efficient and possess the administrative skills such as organising, communicating, financial management, and monitoring among others. Secondary schools without chalk, markers and statutory records like diary scheme of work, and attendance registers among others are likely to be affected negatively, therefore all these are very essential to be available in school and they can be made available through proper management of the school principal as an administrator. This can be achieved by a school administrator through proper monitoring of everything that is going on in the school including the teachers' and learners' activities, this will help in discovering the shortage of material and lapses in record keeping by the teachers



Improved Learning Outcome of the Students

This is the overall achievement that can take place in a school, when there is proper organisation of school activities, proper flow of communication from the top management and other members of staff, when time is well managed as well as monitoring and evaluation of the whole school programme, it will definitely bring about improved learning outcome of the students. Bjorkman and Olofsson (2009) stated that in order to improve students' performance, school principals are required to be effective managers.

Conclusion

The principal as the administrative head of a secondary school must be active and efficient if there will be achievement of school goals and objectives. He/She must be a visionary that is able to carry all the members of staff along in the fulfillment of the visions. He/She must be able to set goals, develop policies and programmes and set procedure for the attainment of school objectives.

For effectiveness to be attained in secondary school, a principal must be skillful and be alive to his responsibilities, must be able to organize the school programme, maintain proper channels for effective school communication, encourage teamwork among the members of staff, ensure proper time management and financial transparency as well as proper monitoring and evaluation of school programme for effectiveness.

Recommendations

- Based on the literature reviewed, the following recommendations are made for the achievement of school effectiveness:
- The government should from time to time organise seminars, conferences and work shop for the principal to update their administrative skills.
- The principal should try to apply different administrative skills like planning, organising, communicating, team work, time management, monitoring, evaluating, among others that will help in achieving school effectiveness.
- The principal should always allow team work spirit by carrying the members of stall along in decision making and involving them in the school activities by carrying them along in every plan and programme.



- The principal should always clarify and state objectives for the teachers so as to encourage them in working towards the set objectives.
- The principal should ensure that there is proper communication with the members of staff, clarification of roles, responsibilities and delegation of authority.
- The principal should be financially transparent and always make the financial state of the school known so that enough fund can be disbursed to the school for effectiveness.
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CHAPTER 20

TEACHERS' RELATED VARIABLES AS PREDICTORS OF SENIOR SECONDARY SCHOOL STUDENTS' ACADEMIC ACHIEVEMENT IN YORÙBÁ GRAMMAR

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Abstract

This study examined teachers' variables that predict senior secondary school students' academic achievement in Yorùbá grammar in education district v, Lagos state. It investigated teachers' subject mastery, teachers' job satisfaction and teachers' teaching experience as they affect senior secondary school students' academic achievement in Yorùbá Grammar in Education, District V, Lagos. The study adopted the descriptive survey research design. The context of the research comprised 40 randomly selected public senior secondary schools in Education, District V. Participants were drawn from these schools through simple random sampling technique. A total of 40 Yorùbá language teachers and 400 students who offer Yorùbá were randomly selected for the study. Three instruments (TSMOS, TJSQ, YGAT) were used to collect data for the study having found to be reliable (with 0.72, 0.74 & 0.714) using Cronbach Alpha & Split-half correlation coefficient. Four null hypotheses were formulated and tested at 0.05 level of significance. Collected data were analysed by using descriptive statistic for the demographic information of respondents while inferential statistics (PPMC and MANOVA) determined the relationship and interaction effect of Yorùbá language teachers-related variables on students' academic achievement in Yorùbá Grammar. Three hypotheses tested were rejected while one was accepted. The study revealed that there is a significant relationship between each of the independent variables; subject mastery ($r=-.158$; $N=40$; $p < 0.05$) job satisfaction ($r=-$



.142; $N=40$; $p<0.05$) and teaching experience ($r=.092$; $N=40$; $p<0.05$) and students' academic achievement in Yorùbá grammar. This study concluded that teacher should understand that experience is vital and contributes meaningfully to student academic achievement in Yorùbá grammar. The study recommended that government should be fully ready to support and engage teachers meaningfully in order to encourage them to stay on the job. They must ensure that all promises made to teachers in terms of increasing their wages, regular promotion are fulfilled. Countless empty promises by government will continue to send teachers out of the noble profession and even render those doing it less satisfied.

Keywords: Academic achievement, Teachers-related variables, Yorùbá Grammar

Introduction

Education is observed to be an essential tool for skills and knowledge acquisition towards human capital development. There are three major levels of education which include primary, secondary and tertiary education with various teaching subjects including Yorùbá language. Yorùbá language is one of the three national languages in Nigeria with a status of being an indigenous language in Nigeria. Historically, Adéyínká (2005); Adétòkun (2018), Makinde and Adetokun (2022) accounted that Yorùbá language is one of the languages made compulsory by the National Policy on Education in Nigeria (NPE 2013). It is the mother-tongue of the people who now occupy what is known as Èkìtì, Kogí, Kwàrà, Ogùn, Òndó, Òşun, Òyó, and Lagos States. They go further to state that Yorùbá people are also found spread in different parts of the world, such as neighbouring West African countries of the Republic of Benin, Togo, Côte D'Ivoire and Sierra-Leone; South American countries of Brazil, Cuba, Venezuela, Trinidad and Tobago.

In a similar notion, the Yorùbá language is said to belong to the West Benue-Congo of the Niger-Congo phylum of African languages. Apart from Nigeria with about 50 million Yorùbá speakers, Yorùbá is still spoken in Togo, Republic of Benin, Ghana, Sudan, Sierra-Leone and Côte D'Ivoire. Outside Africa, a great number of speakers of the language are in Brazil, Cuba, including Trinidad and Tobago. Yorùbá is regarded as one of the major languages of Nigeria (Fábùnmi and Sàlávù, 2005).

In education, the Yorùbá language plays many important roles ranging from being a subject in the curriculum and being language of instruction in specific instance in education. These notions are explicitly sectionalised in different policy provisions available in the National Policy on Education (2013). Being a subject in the curriculum particularly at the secondary school level, different aspects of the language are being taught. These aspects include and are not limited to composition writing, reading comprehension, grammar, literature, culture, phonetic and phonology etc. The one of interest in this study is the Yorùbá grammar. Laswel (2015) defined grammar as the structural foundation of our ability to express ourselves. The more we are aware



of how it works, the more we can monitor the meaning and effectiveness of the way we and others use language. It was further described as a systematic study and description of a language. Laswel (2015) revealed that Yorùbá grammar is a set of rules and examples that deal with the study of the principles and processes by which sentences are constructed in Yorùbá. Nordquist's (2019) concluded that grammar makes it possible for us to talk about language in which the Yorùbá is inclusive.

Laswel (2015) revealed that in English language, there are eight parts of speech namely; nouns, pronouns, verbs, adjectives, adverbs, conjunctions, prepositions and interjections. In Yorùbá language, there are also eight parts of speech namely; ọ̀rọ̀-orúkọ (nouns), ọ̀rọ̀-arópò orúkọ (pronouns), ọ̀rọ̀-arópò afarajorúkọ (pronominals), ọ̀rọ̀-ìṣe (verbs), ọ̀rọ̀-àpónlẹ̀ (adverbs), ọ̀rọ̀-àpẹ̀júwé (adjectives), ọ̀rọ̀-àsopò (conjunctions) and ọ̀rọ̀-atókun (preposition). From the above comparison, one would realise that the two languages have seven parts of speech in common. The difference in the languages is that English has interjection while Yorùbá has pronominal.

Notable researchers have worked assiduously to ensure positive academic achievement in the study of Yorùbá across all levels of education. Mákindé, Oláníyan-Shóbòwálé and Adétòkun (2021), Abatan (2004), pointed out that examples of such researches are the Ife Six-Year Primary Education Project by Babátúndé Fáfúnwà, the study revealed that children taught using Yorùbá language as a medium of instruction performed better than those that were taught in the English language, which was done to improve the process of teaching and learning of Yorùbá language; The Rivers Reader Project directed towards improving academic achievement of students in indigenous language orthography and the USAID production of teaching and learning of materials in Yorùbá language in 2020.

Despite these efforts, low achievement of students at the Senior Secondary School level in Yorùbá has become a recurring decimal as evident in the results of West African Senior School Certificate Examination (WASSCE), West African Examination Council (WAEC), National Examination Council (NECO) (Onwuka, 2012). An insight into the possible causes of this perennial poor performance can be seen in WAEC chief examiners' annual reports for 2018 and 2019. There, it reported that student's poor performance in the subject is as a result of defective knowledge of grammar. It was further stated that in answering comprehension passages, many candidates exhibited inability to express themselves correctly in their own words. Expressions not taken verbatim from the passage contained either a tense error or grammatical error. Likewise, the West African Examination Council (WAEC) further reported that students lacked in-depth knowledge of the phonological and grammatical aspects of the subject. Also, that most students could not describe some grammatical words appropriately. The report further showed that most of the students could not identify different types of phrases. The reports accounted that candidate were tasked to explain aspects in Yorùbá grammar and use the aspectual markers in



sentences. Many students performed woefully as they misunderstood aspects for occurrence and could not come up with sentences containing each aspectual marker.

Nevertheless, researchers have long been interested in exploring variables contributing effectively for the quality and achievement of learners. These factors according to Mákindé and Adétòkun (2022) are student factors, family factor, teacher factor and peer factor. In addition, Mákindé, Olaníyan-Shóbòwálé, Adétòkun and Hunpegan (2021) equally identified home background, socio-historical, linguistic and pedagogical, attitudinal and economic as factors. But with little or no attention placed on teacher factors. However, this study investigated teacher's related factors as predictors of senior secondary school student's academic achievement in Yorùbá grammar because the future of any nation is in the hand of its teacher; for the qualities they possess today will inevitably reflect in the citizen of tomorrow. If this statement is true, knowledge about teachers' variables is important, particularly in teaching and learning of language.

This study, therefore, investigated teacher factors (subject mastery, job satisfaction and experience) as predictors of senior secondary school students' academic performance in Yorùbá grammar in Education District V, of Lagos State.

Mart (2013) explains that teacher's primary goal is to cultivate students' curiosity for efficiency in learning. He opines that one of the most significant requirements to teach effectively is good knowledge of subject matter the teacher is teaching. Ferguson and Womack (1993) write: "effective communication of content knowledge is a hallmark of good teachers" which means that for teaching and learning to be successful, a teacher must display good content knowledge in the course of his/her lesson. Deborah Loewenberg Ball, Mark Hoover Thames, and Geoffrey Phelps (2008) states that content knowledge is the key to positive students' learning achievements because it functions in the process of teaching and learning than classroom management, time allocation or planning. Fákéyẹ (2012), Kimberly 2009 and Mullens (1993) states that teachers must be knowledgeable in their area of specialisation. In truth, if a teacher is not enlightened in his/her subject, then any hope of effectiveness goes right out the window. Hence, effective teaching could be measured by the level of a teachers' subject matter competence which is regarded as a prime predictor of students' achievements. One of the NTI (2009) publications show that teachers' who lack knowledge and confidence may naturally attempt to avoid or minimise their difficulties through a variety of strategies which include; avoidance of topic, heavy reliance on text and over emphasis on practical activities which over time, may result to negative learning achievements. Amúşan (2014) further states that teachers' lack of knowledge in science has been documented and frequently identified as a barrier to the implementation of curriculum reform and to students' progress.



Zembylas and Papanastasiou (2006) view teacher job satisfaction as a function of the perceived relation between what one wants from teaching and what one perceives teaching is offering to a teacher. Hongying (2008) adds, job satisfaction refers to the overall attitude of their working condition and profession. It is a glaring fact in Nigeria that most teachers, especially newly employed contract teachers are hindrance to students' academic achievement considering studies conducted by Aronsson and Goeransson (1999), that contract workers have less job satisfaction due to less control over their employment status. Chamundeswari (2013) supports the findings that contract teachers are concerned with insecure employment condition. In addition, job satisfaction affects teacher turnover and retention. The likelihood of leaving the profession decreases when employees have high levels of job satisfaction (Crossman and Harris, 2006).

Job satisfaction according to Dorozynska (2016) is classified into work environment factor that is the nature of work, pay, the treatment at work and relations with other while the second classification is individual factor which has to do with age, gender, educational background, work experience and subject area. In Dorozynka's (2016) submission, he claimed that it is important to value teacher job satisfaction as it influences teacher turnover. Job satisfaction is key to teacher's psychological and emotional well-being, teachers' motivation and career commitment and quality of teaching, as well as to students' success. Teacher job satisfaction plays a vital role in students' academic achievement in Yorùbá grammar. It was recently reported by Dorozynska (2016) that around 40,000 teachers in Sweden have abandoned the profession to work in other sector like public administration, health care and child welfare, while 6 out of 10 teachers are considering leaving the profession due to job dissatisfaction. Likewise, the Nigeria Union of Teacher via This day Newspaper (2017) advocated for recruitment of more teachers in order to breach the gap created by teachers who had retired or left the job for one reason or the other so as to improve the process of teaching and learning in the country.

Teacher teaching experience has a significant effect on pupils' achievement in primary schools and at upper secondary level. Experienced teachers have a richer background of experience to draw from and can contribute insight and ideas to the course of teaching and learning, are open to correction and are less dictatorial in classroom. Teachers' teaching experience and student achievement was that students taught by more experienced teachers achieve at a higher level, because their teachers have mastered the content and acquired classroom management skills to deal with different types of classroom problems (Gibbons, 2018). Experienced teachers perceive teaching as more satisfying and enjoyable (Klassen and Chiu, 2010).

Furthermore, more experienced teachers are considered to be more able to concentrate on the most appropriate way to teach particular topics to students who differ in their abilities, and prior knowledge. Teachers' attendance of in - service training is one of the indicators of experience. Teachers' motives to attend in-service



training can be manifold for example; increase in salary, career planning, keeping up with developments, filling in lacunae, removing insecurity and meeting colleagues. In the Science Education Project in South Africa (SEP), the objectives were mainly formulated by the developers after having consulted various experts who had experience with Education in Africa. The teachers in this program had been and did not have any experience with practical work. Only in a later stage of their in-service training course they had a better idea of the possible content and methods, did formulating objectives of their own lessons become part of the program (Alonge, 2017).

Therefore, the more the teachers know about students, the better the teachers can connect with them and the more likely they will be able to benefit from the teachers' experience in reconstructing their world. The knowledge that teachers need about students in order to connect with them is gained through interaction. For many reasons, measuring the real impact of experience on a teacher's effectiveness is complex, more so than measuring any other teacher attribute. Consequently, many well-constructed research attempts to interpret the relationship between experience and effectiveness have produced varying results that reveal no particular pattern. There is tendency for teacher effectiveness to improve rapidly over the first three years of teaching and to reach its highest point between the third and fifth year but found no substantial improvement after year five. This is one of the reasons fresh graduates are not recommended to handle some sensitive subjects and classes. Teachers in their first and second year of teaching tend to perform significantly poorly in the classroom because, much experience has not been gained during this time. Teachers require needed experience over the years to carry out the teaching method more effectively (Afolabi, 2011). In contrast, a small number of studies suggest that teacher experience effects may be evident for a longer period of time.

Study like that of Nworgu (2016) stated that experience had a significant positive effect on elementary student achievement among teachers during their first seven years of teaching. Ferguson (2015) reveals that at the high school level, students taught by teachers with more than nine years of experience had significantly higher test scores than students whose teachers had five to nine years of experience. Rivers & Sanders (2016) suggest that teacher' effectiveness increases dramatically each year during the first ten years of teaching; in the extreme case. Clotfelter et al., (2017) found evidence of growing teacher effectiveness out to 20 or more years in their analyses of North Carolina teacher data; although more than half of the gains in teacher effectiveness occurred during the first few years of teaching.

Stronge, *et al.* (2017) assert a positive relationship between teachers' verbal ability and composite student achievement, verbal ability has been considered an indicator of teacher quality. The basic logic is that teachers rely on talk to teach (explaining, questioning, and providing directions). What verbal ability means and how to measure it, it turns out, are not straightforward.



Statement of the Problem

In Nigeria today, particularly with specific attention to Lagos State, the achievement of some Yorùbá teachers in public senior secondary school pose a serious challenge on the academic performance of students in Yorùbá subject. In spite of the importance of Yorùbá grammar instruction in the classroom, several factors have impeded (home background, socio-historical, linguistic and pedagogical, attitudinal and economic) the effectiveness of language teachers and students' achievement in Yorùbá grammar in the Lagos State, Nigeria. Grammar remains an essential aspect of the Yorùbá language curriculum because the knowledge of grammatical rules determines students' academic achievement in the subject. However, perennial poor performance in the Yorùbá language has been traced to the poor knowledge of Yorùbá grammar and other teachers-related variables (Oṣókòyà, 2021; Adétòkun, 2014; Mákindé and Adétòkun, 2022; Akínsólá, 2018) in the classroom. Interventions to solve the problem of poor academic achievement in the Yorùbá language have prompted researches on the relationship between teacher-related factors and academic success in Yorùbá language. Although these studies reported that the variable can positively influence students' academic achievement in these subject areas, the relationship between teacher-related factors such as subject mastery, teachers' job satisfaction, and teachers' experience and achievement in Yorùbá grammar has not enjoyed much research attention in Nigeria.

Purpose of the Study

The purpose of this research work is to investigate the extent to which Yorùbá language teachers' subject mastery, teachers' job satisfaction and teachers' teaching experience serve as predictors to determine students' academic achievements in Yorùbá grammar. Specific objectives of the study are to:

1. find out the relationship that exist between Yorùbá language teachers' subject mastery and students' achievements in Yorùbá grammar in education district V, Lagos State, Nigeria.
2. find out if teacher's job satisfaction affects students' achievement in Yorùbá grammar in education district V, Lagos State, Nigeria.
3. investigate to what extent Yorùbá language teachers' experience determines students' achievement in Yorùbá grammar in education district V, Lagos State, Nigeria.



4. establish the combined effect of Yorùbá language teachers' subject mastery, Yorùbá language teachers' job satisfaction, and Yorùbá language teachers' experience on students' achievement in Yorùbá grammar in education district V, Lagos State, Nigeria.

Research Hypotheses

For the purpose of this study, the following hypotheses were and tested formulated:

- H₀₁:** There is no significant relationship between Yorùbá language teachers' subject mastery and students' achievement in Yorùbá grammar in education district V, Lagos State, Nigeria.
- H₀₂:** There is no significant relationship between Yorùbá language teacher job satisfaction and students' achievement in Yorùbá grammar in education district V, Lagos State, Nigeria.
- H₀₃:** There is no significant relationship between Yorùbá language teachers' teaching experience and students' achievement in Yorùbá grammar in education district V, Lagos State, Nigeria.
- H₀₄:** There is no significant interaction effects of Yorùbá language teachers' subject mastery, teaching experience and job satisfaction on students' achievement in Yorùbá grammar in education district V, Lagos State, Nigeria.

Significance of the Study

The findings of this study will be of significant to the teachers, schools and government. It is expected to educate teachers on how the achievement of students and success in Yorùbá language education is predicated on their quality, as it is generally agreed that no education can rise above the level and quality of its teachers. Teachers are the ones that translate educational policies into practice. The role of the teacher is very crucial, because without the teacher the whole educational plans will be a total failure. Therefore, this study will be of benefit to the teaching profession as it would awaken the consciousness of Yorùbá language teachers of the need to be furnished with Yorùbá language subject mastery, Yorùbá language teachers' job satisfaction, and teaching experience in order to adequately perform their duties as educators.

This study will as well help the schools to be able to identify best practices to improve their students' grammar. They will also be able to determine how teachers can be engaged in meaningful innovations and activities that would enhance their subject mastery, job satisfaction, and Yorùbá language teachers' teaching experience in their areas of specialisation. Through this study, government especially the Ministry



of Education will also be able to improve the standard of education and provide basic facilities that will enhance student's grammar which will in turn bring about quality performance in their academic achievement in Yorùbá grammar.

Methodology

The study adopted a descriptive design of survey type. Simple random sampling technique was used to select 400 students from 40 senior secondary schools in Education District V. Also, 40 teachers were drawn from those schools using simple random sampling technique. The instruments used for data collection were Teachers' Subject Mastery Observation Schedule (TSMOS), Teachers' Job Satisfaction Questionnaire (TJSQ) & Yorùbá Grammar Achievement Test (YGAT). The reliability index of these instruments showed (0.72, 0.74 & 0.714) using Cronbach Alpha & Split-half correlation coefficient. Four research hypotheses were tested at 0.05 level of significance. Descriptive analysis of frequencies and percentages were used to analyse the demographic information, while Pearson's Product-Moment Correlation Coefficient Analysis and Multiple Regression Analysis were used to find the relationship and effects of the independent variables and the dependent variable respectively.

Results

H₀₁: There is no significant relationship between Yorùbá language teachers' subject mastery and students' achievement in Yorùbá grammar

Table 1: Pearson's Product-Moment Correlation Analysis of relationship between Yorùbá language teachers' subject mastery and students' achievement in Yorùbá grammar

		Teachers Subject Mastery	Student's Achievement
Subject Mastering	Pearson Correlation	1	.158
	Sig. (2-tailed)	40	331
	N		40
Student's Achievement	Pearson Correlation	-.158	1
	Sig. (2-tailed)	.331	
	N	40	100

* Correlation is significant at $p < 0.05$ level (2-tailed) **Source:** Field Survey, 2023.



The above table reveals that there is a negative negligible and insignificant relationship between Yorùbá language teachers' subject mastery and students' achievement in Yorùbá grammar ($r = -.158$; $N=40$; $p < 0.05$, 2-tailed). This means that the null hypothesis which states that there is no significant relationship between Yorùbá language teachers' subject mastery and students' achievement in Yorùbá grammar is rejected since $p < 0.05$, at 0.05 level of significance. Therefore, there is significant relationship between Yorùbá language teachers' subject mastery and students' achievement in Yorùbá grammar.

H₀₂: There is no significant relationship between Yorùbá language teachers' job satisfaction and students' achievement in Yorùbá grammar

Table 2: Pearson's Product-Moment Correlation Analysis of relationship between Yorùbá language teacher's job satisfaction and students' achievement in Yorùbá grammar

		Teachers Job Satisfaction	Student's Achievement
Job Satisfaction	Pearson Correlation	1	-.142
	Sig. (2-tailed)		.382
	N	40	40
Student's Achievement	Pearson Correlation	-.142	1
	Sig. (2-tailed)	.382	
	N	40	100

* Correlation is significant at $p < 0.05$ level (2-tailed) **Source:** Field Survey, 2023.

The above table reveals that there is a negative negligible and insignificant relationship between Yorùbá language teachers' job satisfaction and students' achievement in Yorùbá grammar ($r = -.142$; $N=40$; $p < 0.05$, 2-tailed). This means that the null hypothesis which states that there is no significant relationship between Yorùbá language teachers' job satisfaction and students' achievement in Yorùbá grammar is rejected since $p < 0.05$, at 0.05 level of significance. Therefore, there is significant relationship between Yorùbá language teachers' job satisfaction and students' achievement in Yorùbá grammar.



H03: There is no significant relationship between Yorùbá language teachers' teaching experience and students' achievement in Yorùbá grammar

Table 3: Pearson's Product-Moment Correlation Analysis of relationship between Yorùbá language teachers' teaching experience and students' achievement in Yorùbá grammar

Variables		Teaching Experience	Student's Achievement
Teaching Experience	Pearson Correlation	1	.092
	Sig. (2-tailed)		.572
	N	40	40
Student's Achievement	Pearson Correlation	.092	1
	Sig. (2-tailed)	.572	
	N	40	100

* Correlation is significant at $p < 0.05$ level (2-tailed) **Source:** Field Survey, 2023.

The above table reveals that there is a negative negligible and insignificant relationship between Yorùbá language teachers' teaching experience and students' achievement in Yorùbá grammar ($r = .092$; $N=40$; $p < 0.05$, 2-tailed). This means that the null hypothesis which states that there is no significant relationship between Yorùbá language teachers' teaching experience and students' achievement in Yorùbá grammar is rejected since $p < 0.05$, at 0.05 level of significance. Therefore, there is significant relationship between Yorùbá language teachers' teaching experience and students' achievement in Yorùbá grammar.

H04: There is no significant interaction effects of Yorùbá language teachers' subject mastery, job satisfaction, and teaching experience on students' achievement in Yorùbá grammar



Table 4: MANOVA table showing the interaction effects among teachers' subject mastery, job satisfaction, and teaching experience on students' achievement in Yorùbá grammar

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	η^2
Corrected model	2071.904 ^c	6	345.317	10.484	.000	.362
Intercept	1513.760	1	1513.760	45.959	.000	.293
subject mastery * experience* job satisfaction	3.881	1	3.881	118	.732	.001
Error	3656.062	35	32.937			
Total	126432.000	40				
Corrected model	929.978	39				

c. R Squared = .362 (Adjusted R Squared = .327)

The above table reveals that there is no statistically significant interaction effect of Yorùbá language teachers' subject mastery, teaching experience and job satisfaction on students' achievement in Yoruba grammar [$F(1,35) = 1.12; p > 0.05$]. The partial eta square which is 0.00 also shows no interaction effect. This result depicts that there is no interaction effect of Yorùbá language teachers' subject mastery, teaching experience and job satisfaction on students' achievement in Yorùbá grammar. Therefore, the null hypothesis which states there is no interaction effect of Yorùbá language teachers' subject mastery, teaching experience and job satisfaction on students' achievement in Yorùbá grammar is not rejected.

Discussion of Findings

From the result gathered by the researcher in the study, it was obvious that there was positive significant relationship ($r = -.158; N=40; p < 0.05$) between Yorùbá language teachers' subject mastery and students' achievement in Yoruba grammar. The findings above in part, support Adeyinka and Aduroja's (2013) submission that teachers have an important role to play in students' academic achievement and they play crucial role in educational attainment. It is also in line with Fakeye's (2012) opinion that teachers should possess some characteristics which are keys to sealing the gaps in students' achievement.



Furthermore, Dorozynka's (2016) submission is in connection with the result of the Ho2, that it is there was positive significant relationship ($r = -.142$; $N=40$; $p<0.05$) between Yorùbá language teachers' job satisfaction and students' achievement in Yorùbá grammar. This means that it is important to value teacher job satisfaction as it influences teacher turnover. It is justified in the study that job satisfaction is key to teacher's psychological and emotional well-being, teachers' motivation and career commitment and quality of teaching, as well as to students' success. The findings simply put that teacher job satisfaction plays a vital role in students' academic achievement.

Also, findings in this study revealed that teacher experience has a significant relationship ($r = .092$; $N=40$; $p< 0.05$, 2-tailed) on students' academic achievement in Yorùbá grammar. The study findings showed that experienced teachers have a richer background of experience to draw from and can contribute insight and ideas to the course of teaching and learning, are open to correction and are less dictatorial in classroom. Also, Gibbons (2018) claims is in the same directions with the result findings. He stated that teachers' experience and student achievement was that students taught by more experienced teachers achieve at a higher level, because their teachers have mastered the content and acquired classroom management skills to deal with different types of classroom problems.

Conclusion

Teacher subject mastery, teachers' job satisfaction and teaching experience were found significantly related to students' achievement in Yorùbá grammar. This implies that teachers effective teaching could be measured by the level of a teacher's subject mastery competence which is regarded as a prime predictor of students' learning outcomes. And the overall attitude of teachers working condition and profession is key to students' academic achievement in Yorùbá. Teacher should also understand that experience is vital and contributes meaningfully to student academic achievement in Yorùbá grammar. Most important thing is that teacher must ensure that positive learning outcomes are achieved particularly where not found to be negative.

Recommendations

The following recommendations are made for the study:

Teacher

Yorùbá grammar should be distinguished and taught by those who have advance knowledge in it. Reason being that, Yorùbá grammar could add to success or lead to failure of students either in external or internal examinations. Also, teachers must be



exposed to workshop, seminars, training and so on, to improve their teaching skills and classroom interaction, this will also equip them with up-to-date or the latest facts in their subject. Yorùbá teachers must regularly attend conferences particularly the ones organised by Yorùbá related associations (Egbé Akómọ̀lédè àti Àsà Yorùbá, Nàìjíríà (Association of Yorùbá Language and Culture, Nigeria); Egbé Onímò Èdè Yorùbá (Yorùbá Studies Association of Nigeria) so that issues related to teaching and learning of the Yorùbá language are discussed. This will afford such teacher with the modern ways of teaching and learning Yorùbá.

Pre-service teachers must be charged to choose Yorùbá grammar as their area of specialisation. They must be trained to see the positivity of choosing Yorùbá grammar instead of Yorùbá literature.

Yorùbá language teachers should improve on their teaching competency of Yorùbá grammar and that student as well, should develop positive attitudes and self – concept towards Yorùbá grammar so as to be able to perform well in Yorùbá as a whole in Nigeria Secondary Schools.

Government

Government must be fully ready to support and engage teachers meaningfully in order to encourage them to stay on the job. They must ensure that all promises made to teachers in terms of increasing their wages, regular promotion are fulfilled. Countless empty promises by government will continue to send teachers out of their noble professions and even render those doing it less satisfied. Also, Government must put the right pole into the right hole. Experience is key in teaching profession. Government must step up the games by invalidating the idea of learning on the job. Attention must be placed on experience when recruiting teachers. No matter how small or little their experience might be, it must be factored in to consideration. Enough simplify Yorùbá grammar textbooks must be supported or sponsored by government and organisations in order to have them in multitude as that of Yorùbá literature text. Writers must be encouraged to write grammar texts for all levels of education.

Technology

The world is rapidly being driven by technology. As a result, there are a lot of thing language teachers can learn or gain from it in order to enrich their knowledge. Hence, it is expedient that Yorùbá teachers leverage on the use of technology so that they can remain relevant in the teaching profession and master of their subject.



Suggestions for Further Research

This study could be replicated using larger sampling. Also, for more understanding and to have more ideas on this research topic, the under listed topics are suggested for further study:

1. Teachers' and school factors as predictors of senior secondary school students' academic achievement in Yorùbá Grammar.
2. Impact of teachers' related variables on senior secondary school students' academic achievement in Yorùbá Grammar.

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CHAPTER 21

PSYCHO-EMOTIONAL FACTORS AS CORRELATES OF ACADEMIC ADJUSTMENT AMONG HIGH ABILITY LEARNERS IN IBADAN METROPOLIS

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Abstract

The ability of every learner to adjust academically is a tool for academic achievement. In educating high-ability learners, educators and stakeholders of their education do not take into cognizance, their ability to adjust to their academic and school works. The misconception that high-ability learners are self-sufficient, therefore do not need extra efforts in their academic life poses them to face many challenges in school which can lead to academic underachievement. From year to year, there are changes in their teachers, classrooms, methodologies which can make them bored or lose interest in academic tasks and depressed. This study, therefore, determines how psycho-emotional factors correlate academic adjustment among high-ability learners in Ibadan metropolis.

The study was anchored to the Social-Cognitive Theory, Self-Determination Theory and Tinto's College Departure Theory while a survey research design of the correctional type was adopted. Simple random sampling technique was used to select the three (3) schools and 30 students were purposively selected using academic records and teachers' nomination. Five (5) research questions were used. Data were collected using validated instruments, Academic Adjustment Scale ($r=0.90$), Academic Intrinsic Motivation Questionnaire ($r=0.70$), Self-Efficacy Questionnaire for Youths ($r=0.70$) and Self-Regulation Questionnaire ($r = .94, p < .0001$). The data was analysed using descriptive statistics of frequency counts and Pearson Product Moment Correlation (PPMC).

The study examined the psycho-emotional factors as correlates of academic adjustment among high-ability learners in Ibadan metropolis. The results showed that psycho-emotional factors accounted for 42.1% variance in the



academic adjustment of high-ability learners, academic self-efficacy had a significant influence on the academic adjustment of high-ability learners ($\beta = .357, t = 4.193, p < 0.000$) while both academic self-regulation ($\beta = -.018, p > 0.05$) and academic intrinsic motivation ($\beta = -.082, p > 0.05$) had no significant influence on academic adjustment of high-ability learners in Ibadan metropolis.

The study recommended that policy makers, curriculum planners and other related stakeholders should endeavour to plan well-organized curriculum that helps the high-ability learners adjust academically. Novel activities like games and field-trips should be introduced and incorporated into the curriculum to boost the interest and improve concentration of high-ability learners.

Keywords: *Academic adjustment, High-ability learners, Self-regulation, Self-efficacy, Academic intrinsic motivation factors*

Introduction

The study of gifted and talented children is gaining attention in the world of education. However, studies in this group focuses more attention on their cognitive development ignoring aspects of their psychological, emotional and social developmental needs (Rorlinda, 2016). Generally, high ability learners are often thought to have no problem in whatever they do. This is because the group shows high academic achievement and potentials in various fields especially in academics, creativity, leadership, visual arts performance when compared to normal children of their age (Mc Eachen, 2001; Fisher and Kennedy, 2016). The school also does not consider this category of learners to be given special psychological guidance. This is due to the assumption that the interpersonal abilities possessed by this group of learners are able to overcome the difficulties they might be experiencing. However, research by psychologist have shown that high ability learners who are known as individuals with high cognitive abilities, creative and task commitment , were also found to have frequent experiences related to social and emotional problems. (Versteynen, 2013).

Academic adjustment plays a vital role in the educational development of high-ability students, and it is like a pillar on which their entire life is based. It is not only related to their cognitive excellence, progress and achievement, but also their attitudes towards school, anxieties, loneliness, social support and academic motivation. Academic adjustments are similar to physiological adjustments. When needs arise, especially in a new or changed learning environment, they impel interpersonal activity meant to satisfy their academic needs. In this way, high-ability learners increase their familiarity and comfort with their academic environments, and they come to expect that their academic needs would be met in the future through their academic adjustment. Failure to adjust to academic demands by the high-ability learner can lead to mental health issues and school refusal or school dropout and may



require the service of school counseling. Since most high-ability learners spend most of their formative years in a regular school settings, these group of learners requires assistance to transition from the regular school curriculum to the various instructional strategies that applies to their cognitive excellence, total dependence on teacher and family to complete independence of self.

Academic adjustment in a high-ability learner is influenced by a combination of the learners personal characteristics, self-efficacy, self-regulatory habits, intrinsic and extrinsic motivation, attitude to studies, their experiences, and the interconnections between home, preschool and school. How well a high-ability learner makes the adjustment to learning can have implications for their ongoing social, emotional/behavioral and academic progress.

High-ability learners who are well academically adjusted have a sense of confidence and zeal for excellence – they feel comfortable, secure and relaxed rather than anxious, fearful or upset. They listen to and follow instructions, interact well with others, share and take turns, cope with normal day-to-day conflicts and are able to manage their feelings and emotions appropriately. They are interested in learning and are motivated to take part in school activities.

Psycho-emotional wellbeing of high ability learner contributes greatly in their ability to adjust academically, their competency and utilizing their abilities to its full potentials. Academic intrinsic motivation, Academic self-efficacy and self-regulations are among the numerous factors that aid the attainment of academic adjustment among high ability learners.

Dale and Peggy (2007), in a study about self-regulation and academic learning argues that students self-regulatory behaviors can be enhanced through systematic interventions that are designed to teach skills and raise students' self-efficacy for learning. Self-regulation (or self-regulated learning) refers to self-generated thoughts, feelings and actions that are planned and systematically adapted as needed to affect one's learning and motivation. Self-regulation comprises such processes as setting goals for learning ,attending to and concentrating on instruction, using effective strategies to organize, code and rehearse information to be remembered ,establishing a productive work environment, using resources effectively, monitoring performance, managing time effectively, seeking assistance when needed, holding positive beliefs about ones capabilities, the value of learning, the factors influencing learning and the anticipated outcomes of actions, and experiencing pride and satisfaction with one's efforts.

Self-regulation is not an all-or-none phenomenon; rather, it refers to the degree that students are metacognitively, motivationally and behaviorally active in their learning. High-ability learners may self-regulate different dimensions of learning, including their motives for learning, the methods they employ, the performance outcomes they strive for, and the social and environmental resources they use, how



frequently they use them and how well they employ them. The hallmark of self-regulation are choice and control: students cannot self-regulate unless they have options available for learning and can control essential dimensions of learning. (Dale and Peggy, 2007). In Nigeria educational settings, high-ability students have little opportunity for self-regulation when the teacher dictates what student's do, when they do, where to do it and how to accomplish it. This will pose a great disadvantage to the high-ability learner's pursuit of academic adjustment and excellence.

The most apparent aspect of the differences between the student's in classes is attributed to their ability levels to follow explanation of the lesson, interest to acquire educational experiences and focus on information sequence. Some students find it easy to focus and acquire the information provided, others lack the ability to do so, and some of them are easily distracted and this limits their continuous acceptance of the provided educational experience (Yadak, 2017).

Self-efficacy is an important dimension in the high-ability learners' personality because of its impact on his behavior and actions. Self-efficacy plays a vital role in directing and determining the high ability learner's behavior, he acts based on his thoughts about himself, this means an interchangeable process between the way and how he perceives himself; this process is referred to as the academic adjustment . Learners Perceiving their academic self-efficacy proved to have high abilities in; academic adjustment, challenge, performing the extra effort tasks, adjustment to the university activities, agreement with faculty members, less vulnerability to other disorders and self-organized, Yadak (2017).

Experts in gifted education describe high ability learners as being more motivated, curious and task committed than children of average ability (Clark, 1979; Feldhussen and Kolf, 1986). Yet, students of above average academic ability may be especially vulnerable to losing their intrinsic motivation (Goldberg, 1994). Wilson (1957) asserts that when teachers attempt to encourage learning with positive and negative contingencies, they inadvertently focus gifted children on superficial rather than on their deeper and inherently unique motives leading them to become content merely to accept these strongly emphasized superficial satisfaction rather than being responsive to their to their own deep and driving purposes which alas are so often disregarded by teachers.

When students have high self-efficacy and regulation, they are said to be intrinsically motivated. High- ability learners with learning goals engage in mental processes and behaviors that promote learning. High-ability learners will succeed at challenging learning situations if they are not anxious about their performance and regulate their learning activities.



Statement of the Problem

Academic adjustment of the high ability learners to academic challenges and experience requires that the social, emotional, psychological and cognitive wellbeing of the learner is put into active consideration. The educational needs of the high-ability learner is often neglected in the regular Nigerian classrooms where their everyday academic needs are being attended to. This negligence cannot be over-emphasized as it is undeniable that high ability students experience some troubles of adjustments into the regular school setting which has no differentiated curriculum or instructional strategies for teaching this group of learners. As a result of their high cognitive and intellectual competence, the high-ability learner is expected to fit in naturally and cope with unpleasant teaching and learning situations which fall short of their high abilities and potentials.

High ability students faces numerous obstacles because the educational programs in the Nigerian setting does not include the needs of the high ability students rather it was designed for regular students leaving this groups of learners to struggle for their stance in an academic environment because it is not challenging and easily relatable to the high ability students due to their high cognitive competence and potentials.

High ability students often face adjustment problems academically resulting from not receiving suitable educational services that matches up with their cognitive, intellectual and potential abilities leaving these groups of learners at jeopardy.

Negative self-regulation, self-efficacy and lack of academic intrinsic motivation have negatively impacted on the academic adjustment of the high ability students resulting in conditions like anxiety, lack of task competence, tension, loneliness, among other factors. This is largely attributed to high expectations from the high ability students and the quality of emotional, psychological, and social support these learners receive as compared to other regular students in the class.

Academic adjustment of high ability learners to school activities remains one of the permanent challenges of educating high ability students. Understanding the impact of self-regulating activities, self-efficacy and intrinsic motivation in tackling academic problems as a key to improving and developing a positive academic adjustment abilities would tremendously have positive effects on the academic achievement of these set of learners.



Research Questions

The study sought to answer the following research questions:

1. What is the relationship between self-regulation and academic adjustment of high ability learners?
2. What is the relationship between academic intrinsic motivation and academic adjustment of high ability learners?
3. What is the relationship of self-efficacy and academic adjustment of high ability learners?
4. What is the composite contribution of self-regulation, self-efficacy and intrinsic motivation to academic adjustment of high ability learners?
5. What is the relative contribution of psycho-emotional factors to the academic adjustment of high ability learners?

Significance of the Study

The study investigated the psycho-emotional factors as correlates of academic adjustment among high ability learners in Ibadan metropolis. Findings in this study would be useful in the following respects:

1. The core benefits of this study would be to the high-ability learners as their academic successes are extremely crucial for academic prestige, economic benefits, technological advancements and national development.
2. With the understanding of psycho-emotional factors as correlates of the high ability learner academic adjustment will help these set of learners and their teachers in adopting the best teaching and learning model to achieve their educational goals and also make them experience emotional and social satisfaction from their academic placement.
3. Findings from this study would be of help to the high-ability students, their parents, educators, psychologist, school counselors and education stakeholders involved in the wholesome development of the high ability learners.
4. Understanding the psycho-emotional factors as regards the academic adjustment of these learners would play complementary roles and assist education stakeholders in taking informed decisions about their academic placements and learning methodologies as talents of children are malleable and needs to be cultivated.
5. It would also help the high ability learner have concrete knowledge on how their psycho-emotional wellbeing can affect the expectations of their academic adjustments.



Methodology

The study adopted the survey research design of the correctional type. The focus was to determine the correlation between the psycho-emotional factors and academic adjustments among high ability learners. The participants consisted of senior secondary school two and three that were high ability learners from the selected schools in Ibadan. The sampling technique that was used for this study was the simple random sampling technique in selecting the participants. Teacher recommendations were used to select the high ability learners. Cumulative assessment model was used to select the participant that scored 70% and above, as high ability learners. Five students from each class level were selected from the selected schools making a total of thirty participants in all. Ten (10) students were drawn from each school in such a way that the relative proportion of the students made up the resultants sample.

Four instruments, namely; Academic Adjustment Scale (AAS), Academic Intrinsic Motivation Questionnaire (AIM-Q), Self-Efficacy Questionnaires for Youths (SEQ-Y), and Self-Regulation Questionnaire (SRQ) were used to collect data for this study. The questionnaire was divided into three sections: Section A consisted of the background information of the respondents, while Section B contains items to elicit information on academic adjustment of the high ability learner. Section C contains items on psycho-emotional factors used in this study. The items in the questionnaire were rated as follows: Agree = (A), Strongly Agree = (SA), Disagree = (D) and Strongly Disagree = (SD).

Permissions were obtained from the principals of the sampled schools after which the researcher with a research assistant administered the questionnaires on the participants. Informed consent of the participants was also sought before the administration of the questionnaire. Data collected was collated and analyzed using descriptive statistics while Pearson Product Moment Correlation analysis was used to answer the research questions.

Results and Discussion of Findings

Demography of the Respondents

This section contains the result of the data collected from the field. In this chapter, analyses of data. The data were gathered from 30 respondents and were therefore presented in tables.



Demographical distribution of respondents

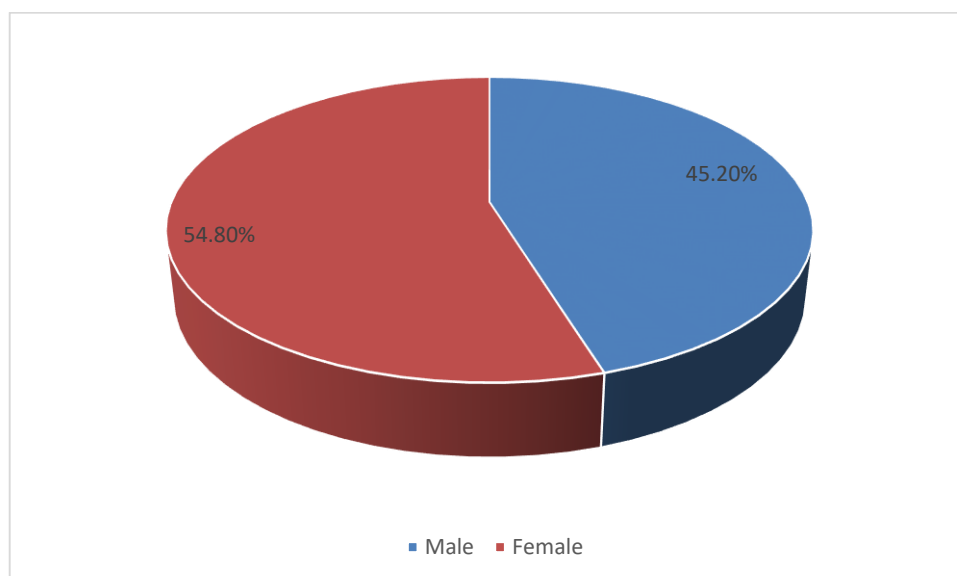


Figure 1: Distribution of respondents by Sex

Figure 1 shows that the majority of the respondents (54.8%) were female, while 45.2% were male.

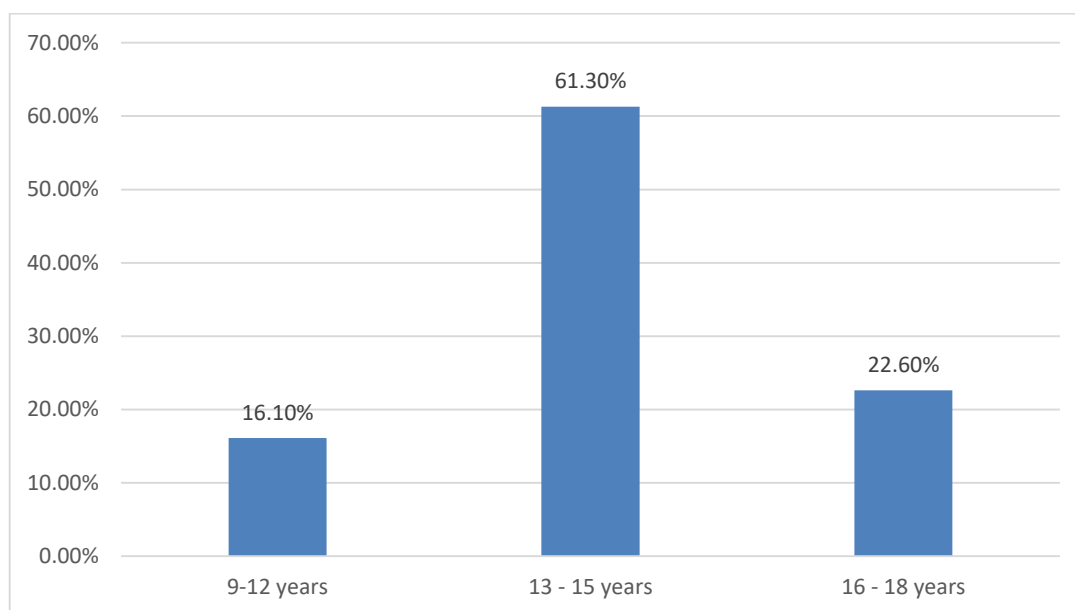


Figure 2: Distribution of respondents by Age

The above figure indicated that most of the respondents (61.3%) belonged to the age groups of 13 to 15 years, 22.6% were of the age group 16 to 18 while 16.1% were between ages 9 and 12.

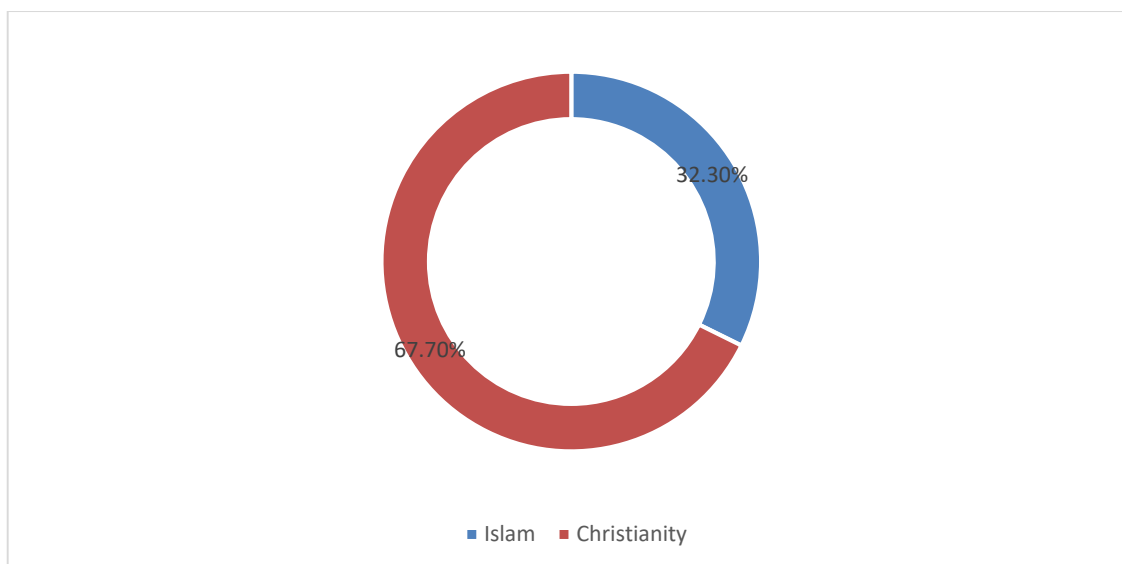


Figure 3: Distribution of respondents by Religion

Figure 3 above showed that the majority of the respondents (67.7%) were Christians while 32.30% were Muslims.

Research Questions

Research Question 1: What will be the relationship between academic self-regulation and the academic adjustment of high ability learners?

Table 1: PPMC summary showing the relationship between academic self-regulation and academic adjustment of high ability learners

Variable	N	Mean	Std.Dev	Df	r	Sig	P
Academic Adjustment	31	16.6207	3.35076	29	.372*	.039	P< .05
Self-regulation	31	30.1724	5.09293				

Table 1 shows that there is a significant relationship between self-regulation and academic adjustment of high ability learners; $r(29) = .372$, $P < .05$. The coefficient of determination ($r^2 = 0.138$) implies that self-regulation would account for a 13.8% variance in the level of academic adjustment among high ability learners. The r-value of .372 indicated that self-regulation had a moderate effect on academic adjustment.



Research Question 2: What will be the relationship between academic self-efficacy and the academic adjustment of high ability learners?

Table 2: PPMC summary showing the relationship between academic self-efficacy and academic adjustment of high ability learners

Variable	N	Mean	Std.Dev	Df	r	Sig	P
Academic Adjustment	31	16.6207	3.35076	29	.681**	.000	P< .05
Self-efficacy	31	33.1333	6.88832				

Table 2 shows that there is a significant relationship between self-efficacy and academic adjustment of high ability learners; $r(29) = .681$, $P < .05$. The coefficient of determination ($r^2 = 0.464$) implies that self-efficacy would account for a 46.4% variance in the level of academic adjustment among high ability learners. The r-value of .681 indicated that the size of effect of self-efficacy on academic adjustment is high.

Research Question 3: There is no significant relationship between academic intrinsic motivation and academic adjustment of high ability learners.

Table 3: PPMC summary showing the relationship between academic intrinsic motivation and academic adjustment of high ability learners

Variable	N	Mean	Std.Dev	Df	r	Sig	P
Academic adjustment	31	16.6207	3.35076	29	.090	.632	P< .05
Academic intrinsic motivation	31	27.7500	5.01082				

Table 3 above shows that there is no significant relationship between academic intrinsic motivation and academic adjustment; $r(29) = .090$, $p > .05$.

Research Question 4: What is the composite effect of the psycho-emotional factors on the academic adjustment of high ability learners?



Table 4: Regression summary showing the composite effect of the psycho-emotional factors on the academic adjustment of high ability learners

R = .692 ^a		Adjusted R ² = .421				
R Square = .479		Std. Error of the Estimate = 2.54926				
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	161.361	3	53.787	8.277	.000 ^b
	Residual	175.466	27	6.499		
	Total	336.828	30			

Table 4 reveals that all the psycho-emotional factors (Academic self-efficacy, academic self-regulation and academic intrinsic motivation); $F(3,27) = 8.277$, $p < 0.05$. The adjusted $R^2 = .421$ implies that when combined together, the psycho-emotional factors accounted for 42.1% variance in the academic adjustment of high ability learners. Factors accounting for the remaining variance in academic adjustment were not included in this study.

Research Question 5: What is the relative effects of the psycho-emotional factors on the academic adjustment of high ability learners?

Table 5: Regression summary showing the relative contribution of the psycho-emotional factors on the academic adjustment of high ability learners

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.593	3.344		2.270	.031
	Academic Self Efficacy	.357	.085	.734	4.193	.000
	Academic Self-regulation	-.018	.116	-.027	-.153	.880
	Academic Intrinsic Motivation	-.082	.099	-.122	-.823	.418

a. Dependent Variable: SMEAN(Academic Adjustment)



Table 5 shows the relative contribution of the psycho-emotional factors on the academic adjustment of high ability learners. It can be seen in the table that academic self-efficacy had a significant influence on the academic adjustment of high ability learners ($\beta = .357, t= 4.193, p < 0.000$) while both academic self-regulation ($\beta = -.018, p > 0.05$) and academic intrinsic motivation ($\beta = -.082, p > 0.05$) had no significant influence on academic adjustment. The findings thus imply that a unit change in academic self-efficacy would bring about 35.7% change in academic adjustment while a unit change in both academic self-regulation and academic intrinsic motivation would not have any significant influence on the academic adjustment of high ability learners.

Discussion of Findings

The findings of this study were discussed in line with the stated research questions and compared the results and observations of the previous studies conducted by other researchers.

The results from the findings show that there is a significant relationship between self-regulation and academic adjustment of the high ability learner. This implies that self-regulation would account for a variance in the level of academic adjustment among high ability learners. Thus, having a moderate effect on academic adjustment of the high ability learner. This finding supported the study of Cazan (2012) who found a moderate effect between self-regulation and academic adjustment of high ability learners. Furthermore, Pintrich (2004) submitted that self-regulatory activities are mediators between personal and contextual characteristics and actual achievements performance.

The results of the findings show that there is a significant relationship between academic self-efficacy and academic adjustment of high ability learners. The size effect of academic self-efficacy on the academic adjustment of high ability learner is high. This finding supports the submission of Liu (2009) that individual's beliefs (academic self-efficacy) about their capacities influence their academic performance. Jungert and Rosander (2010) affirmed that students with high-self efficacy overcome challenging tasks and academic obstacles and focus on opportunities. Fakeye (2010) equally found that academic self-efficacy has significant influence on academic performance. Adelodun and Asiru (2015), found that high academic self-efficacy is a predictive factor of excellent academic performance among high-achieving students, which must be worked upon among stakeholders in education.

The results of the findings show that there is no significant relationship between academic intrinsic motivation and academic achievement of high ability learners. The findings of this study of this study does not support previous study of Lysnch (2006) and Petersen *et al.* (2009) reported a positive link between intrinsic



motivation and adjustment. Baker and Siryk (1984) showed that achievement motivation was correlated with academic adjustment.

The result of the findings shows that all the psycho-emotional factors (academic self-regulation, academic intrinsic motivation and academic self-efficacy) when combined together accounts for increase in the academic adjustments of high ability learners. This finding corroborate with the findings of Chowdhury and Shahabuddin (2007) who revealed that students who had higher levels of intrinsic motivation also had higher levels of academic self-efficacy and performed better academically than those students with lower levels of academic self-efficacy and intrinsic motivation. Intrinsic motivation adds to academic self-efficacy by allowing students' belief that a particular course of action will produce desired results but if they doubt they won't be motivated to change their behavior (Bandura, 1997). Furthermore, the findings also supported the findings of McClelland (2000) and Duncan (2007) that highlight the relationship between self-regulation and academic achievement. Children and young people with more adaptive personal skills and learning resources are more likely to succeed academically.

Conclusion and Recommendation

The study examined the psycho-emotional factors as correlates of academic adjustment among high ability learners in Ibadan. The result shows that psycho-emotional factors such academic self-regulation, academic self-efficacy and academic intrinsic motivation significantly correlates with the academic adjustment of high ability learners with variance. Academic self-efficacy has a higher significance and correlates with academic adjustment than the other two variables used in this study. An increase in the joint contribution of all psycho-emotional factors will yield to an increase in the academic adjustment of high ability learners.

Schools and educational institutions are recommended to pay more attention to the high ability learner and motivate them appropriately for better results. Parents are also to seek both cognitive and affective solutions to their children's academic challenges in schools. Other stakeholders in education such as school's administrative personnel should ensure that psychological well-being of the high achieving students is adequately catered for.

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CHAPTER 22

LIBRARY BUILDING ERGONOMICS AND PERFORMANCE OF PERSONNEL IN NIGERIAN LIBRARIES

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Abstract

This study investigated the ergonomics of library building and optimum performance of library personnel performance with specific focus on Nigerian libraries. The content research design method, including the analysis of secondary sources of information such as journals, book chapters and technical reports was adopted for the study. The transactional stress and job performance theories were also used to anchor the study. Findings from the study revealed that library personnel in Nigeria were unable to perform optimally just as the state of ergonomics of library building was found to be poor. The poor state of ergonomics was found to have had hindered optimal performance of library personnel in Nigerian libraries. Consequently, the study concluded that a good state of library building ergonomics is a panacea for optimal library personnel performance in libraries. The study recommended that library authorities should ensure the provision of a perfectly fit state of ergonomics in libraries to guarantee optimum performance by library personnel.

Keywords: *Ergonomics, Library building, Library personnel, Job performance, Nigeria*

Introduction

Personnel job performance is important to an organisation and the personnel as individuals in the organisation, because it has a direct bearing on the achievements of the vision and goals of the organisation. In the same vein, the job performance of library personnel is key to the overall performance of the library in terms of service delivery which goes a long way to determine the quality of teaching and learning in schools. In every institution and organisation globally and particularly in Nigeria, the problem of mobilising the employee to perform at maximum capacity remains a recurrent problem to managers (Agba, Mboto, and Agba, 2013). This issue is more



challenging with the library personnel when one considers the schedule of their duties which include making information resources and services available for users. Libraries in Nigeria unlike its counterpart in many parts of the world are underdeveloped and there is an urgent need to research on how the standard can be improved (David-West and Bassey, 2017). Library personnel performance can be described in terms of process and outcomes. In addition, the concept only describes behaviour that is goal-oriented and aims at establishing how well an employee carries out a task to achieve a desired goal or objective within an environment. A proposition worth considering is that if the library environment is improved, there would be improvement in the performance of library personnel with regards to library service delivery. This is where the issue of Library Ergonomics comes into play. A study by Suwati, Minarsih and Gagah (2016) has shown that the main goal of work for personnel is not only to get the salary, but to reach self-satisfaction. Therefore, the ability and capability of library personnel to perform their functions competently are essential for the overall effectiveness of the library. This then implies that if library personnel's attitude to performing duties and responsibilities is negative, it may result in unsatisfactory service delivery.

The poor performance of library personnel often times are not only due to poor motivation or funding but on the conduciveness of the library/working environment and poor ergonomics factor. Every organisation needs employees that are very high in the performance of their responsibilities. This will ensure that the organisational goals are met; products, and services that they specialise in are delivered and also attain a reasonable advantage. The library personnel's job is stationary most of the time and involves repetitive tasks. Observations revealed that oftentimes workers are given little choice and are forced to adapt to poorly designed work conditions, which can lead to serious injury to the hands, wrists, joints, back or other parts of the body. Adeyemi (2009) believed that the daily routine and exertion especially in the librarianship usually impact adversely on the librarian's job performance and the users. Failure to provide or educate people about the proper ergonomic equipment, space, and work schedule in libraries can result in injuries to wrists, arms, shoulders, backs and eyes. Such injuries do occur as a result of work repetitiveness, working too long at a task without a break, and not knowing the proper way to sit at a workstation. For example, sitting and keeping the head and torso upright when reading in the library requires static work while keeping or maintaining this position for a given time requires the application of a force. The work environment may affect the job performance of library personnel; which has been described as the surrounding conditions in which an employee operates (Gautam, 2015).

Taiwo (2010) opined that the kind of working environment in which employees carried out their functions determines how such organisation prospers. In a conducive work environment, personnel may tend to be more useful. Also, conducive environment ensures employees' well-being and this will facilitate them to



perform their tasks with all enthusiasm which invariably leads to high output. Association between work environment and job performance has been observed by scholars to be very crucial (Accel-team, 2014). A healthy workplace atmosphere reduces absenteeism and this, in a way, may be an important factor in predicting how library personnel perform their job.

The library environment is important in determining how satisfied library personnel will be in discharging their duties effectively. If the libraries are provided with the necessary equipment and facilities, it might influence high job performance by library personnel and this might arouse the users' interest in using the library. Likewise, if the personnel are friendly, provide the necessary services and user education; the libraries will have a positive impact on the users and the personnel performance will continue to improve. It is essential, therefore, to examine the association that exists between ergonomics of work environment and library personnel's job performance.

Ergonomics of libraries consist of all those physical-sensory elements such as lighting, colour, sound, space, furniture and so on. Libraries must be well illuminated, to provide a conducive environment for both users and for library personnel there should be specifications for illumination of reading areas, staff work areas, and shelves. Working or reading under insufficient light for a considerable time could cause eyestrain which may ultimately lead to eye disorders. According to Chandra (2009), Temperature and relative humidity are other crucial factors in library ergonomics as it affects the comfort of personnel, users, and the lifespan of library collections. Heat accelerates deterioration and humidity helps promote harmful chemical reactions on library resources such as books. Heat and humidity encourage mould growth and insect activity. Low humidity can also be a problem, and cause library materials to become brittle, thereby affecting the availability and accessibility of these materials in the library. All these elements/factors are what to look for in a place specially designed for students to adequately learn, especially when creating a space for a library and they must be reviewed against the international standard in respect of the library to appraise it ergonomically.

Chandra (2009) stated that library workstations are arranged in an environment, where multiple individuals work in the same room with or without dividers to separate them. There are several sources of noise in this kind of environment. The noise produced by ventilation and air conditioning equipment, movement sounds such as footsteps and conversations of co-users all contribute to the sound level (ambient noise) in the library. The predominant effect of too much noise in a library environment is a distraction and disturbance of intellectual activities. Even when the library interior is quiet, there may be sounds from outside that create a problem. So, all these must be checked and corrected in library situations to enhance the effective performance of library personnel.



Studies have shown that, in Ghana the level of satisfaction with the library-study experience by library personnel were comfort and durability, while coming to Nigeria situation, it was discovered through study that the level of satisfaction with the library-study experience by library personnel were not comfortable and durable such as lumbar support from the chair used for reading in Nigeria needed support the lower back and a relaxed posture when reading and resulting in neck, arm, shoulder and back pain. Going by the findings of Makinde and Sangowusi (2001), Alabi (2007), and Falade (2007) poor ergonomics is a major problem of library personnel. That is why it becomes imperative that it is investigated and the extent of its relationship with library personnel performance is determined individually and even jointly with other factors. The physical arrangement of the library is pertinent for effective performance of library personnel. Library furniture is one of the most important pieces of equipment in the library which should be the priority for equipment expenditures and there should be no compromise with comfort and durability.

The chairs and tables in the library should be arranged in such a way that encourages movement and must fit correctly the user for lumbar support, and seat back. Thus, a proper sitting position in the workplace is necessary to avoid injuries and pain. Moreover, lumbar support from the chair is needed to support the lower back and a relaxed posture when working with the computer to make the body comfortable. Also, work surfaces that are too high or too low can lead to awkward postures such as extending the arms to reach the surface, elbows held away from the body, and elevated shoulders, resulting in neck, arm, shoulder, and back pain. Repeated or continuous contact with hard surfaces called contact stress, can create pressure that can inhibit nerve function and blood flow. Contact stress can be caused if the legs are pressed against a hard surface on a chair or elbows rest on a hard desk surface. Karanek (2005) and Clark (2006) suggested the most important features of a chair are that it must have lumbar support with adjustable height, tilt ability, and tilt lock. Library personnel usually sit for hours of intensive work and their comfort will determine their level of satisfaction with the library-study experience as cited in (Johnson, 2018). The impact of good ergonomics on library personnel performance could not be overemphasized. Therefore, a good knowledge of ergonomics of library building will assist the management to plan well and also helps to manage library ergonomics very well.

The 21st century libraries in Nigeria have been experiencing a declined level of use as a result of poor services rendered by library personnel. Previous studies and preliminary investigations have shown a decline in the performance of library personnel as there are complaints from users about poor service delivery which has been traceable to poor ergonomics of library building. Poor office ergonomics has been traced to have a link with the emotions of workers since a poor working environment can have a negative influence on the emotional intelligence of library



personnel. It is being observed that furniture such as chairs and tables have very high importance in the setting up of libraries. The type, size, and arrangement of such cabinet works vary from one library to another and it also depends on the library type. A library containing an appropriate type of furniture and well arranged to suit the library personnel will affect performance positively. Moreover, a library that is situated in a conducive environment void of noise, in a well-ventilated area, with adequate lighting and strategically and centrally cited for easy access by library personnel and users will surely improve library personnel performance and its rate of patronage. This write-up, therefore embarked upon the exposition of issues of library ergonomics as it relates to library personnel performance.

Literature Review

Ergonomics and performance of library personnel

The library environment should be in a safe, efficiently comfortable as well as friendly, and ergonomically fit area, conditions to enhance the performance of the worker and it concerned with the fit between the user, the equipment, and their environment. In a study carried out by Olaniran (2018) on ergonomics and location of the library as predictors of school library utilisation by senior secondary school students in Ona-Ara local government area of Oyo state. A multi-stage procedure was adopted to carry out the study. The population of the study covered 33 secondary schools in Ona-Ara local government. The study revealed that the majority of the respondents indicated that the reading area is arranged for easy movement 88(59.4%), the reading area is well lighted 88(59.4%) and the armrest of the chairs in the library is adequate 105(71.0%). On the other hand, the majority of the respondents affirmed that there is no power back-up in case of power failure in the libraries 114(70.0%) and that the chairs and tables are not well constructed to suit individual personnel 95(64.9%). It was deduced from the above that the ergonomics of the library surveyed is not good enough. The study also reviewed that majority of the respondents indicated that in their school libraries, the type of chairs, tables and shelves were wooden typed. This indicated a lack of ergonomically good furniture in the libraries in senior secondary schools in the Ona-Ara local government area of Oyo state.

In another study carried out by Akerele (2015) on emotional intelligence, school management attitude, and ergonomics as correlates of school library media centre service delivery in federal government colleges in Nigeria. The study revealed the level of ergonomics in school library media centres of the federal government colleges, the study measured ergonomics with 15 items using a four Likert-type scale by adapting previous scales designed by environmental health and safety (2010). Items such as awkward positioning, exerting force, repetitive task performance, noise, odour, and poor illumination were employed to design this scale. The study indicated that out of the 15 items listed, only 4 yielded high mean scores of between 3.08 and



3.41. Others yielded a low mean score of between 1.11 and 2.33. The weighted average of 1.89 attested to the fact that physical and environmental ergonomics are poor in the investigated libraries. Findings also indicated further that chairs and tables were substandard ($\bar{x}=1.15$), books were covered with dust ($\bar{x}=1.18$), SLMCs were closer to noise ($\bar{x}=2.33$), they were not well ventilated ($\bar{x}=1.23$) and users experienced pains while reading in the SLMC ($\bar{x}=3.08$). All these and other indices indicated that physical and environmental ergonomics were poor in the school library media centres.

From another perspective, Chinyere (2014) researched to investigate the influence of workstation and work posture ergonomics on job satisfaction of librarians in the federal and state university libraries in Southern Nigeria. The study adopted the survey research design. The total enumeration technique was used to include the 500 librarians from the 37 Federal and State Universities libraries in Southern Nigeria. The findings revealed that there was a positive relationship between ergonomics (suitability of workstation and equipment and work posture designs) and job satisfaction. The study revealed the agreement of the respondents regarding work posture as follows: having enough space for my legs and feet had a mean score of 2.94 with 59.7% followed by work involving a lot of working in the same physical position with a mean score of 2.93 showing 62.8% of the respondents concurring to the statement. Further, lower back support is very adequate has a mean score of 2.89 as demonstrated by 55.1% of respondents. Finally, the height of my work station is satisfactory concerning my posture received a mean score of 2.76 as perceived by 55.1% of the respondents. The study revealed that 62.8% of the respondents agreed that their work requires working in the same physical position which could lead to the development of some physical/musculoskeletal disorder among the workers due to prolonged sitting (working in the same position). Zander, King and Ezenwa (2004) also found in their study that prolonged standing or sitting transfers a load of the upper body to the lower body which in turn results in lower back pain. Similarly, Fraser (2009) attested that there is no denying the fact that the regular variation between sitting, standing and walking is vital as regards work posture. Fortyfive (45%) of the respondents also affirmed that their work requires repetitive movements and this is a major determinant of musculoskeletal and vascular health. This is also in line with the observation of Akhahowa (2007) who noted that poor work processes; environment and unsuitable working conditions could cause or aggravate conditions referred to as Carpal Tunnel Syndrome, Tenosynovitis, Repetitive Strain Injury (RSI), or Repetitive Motion Injury.

Ismaila (2010) conducted a study on ergonomic awareness in Nigeria as a developing country that recently has an ergonomics society. Ismaila (2010) believes that it is essential to ascertain the level of ergonomics awareness in the country based on the benefits accruable from ergonomics as a subject on one hand and ergonomics society of Nigeria on the other. His study concluded that there is a very low level of ergonomics awareness. This to Ismaila may be because the generality of Nigerians



(irrespective of their background or education qualification) was not conservant with the benefits derivable from ergonomics, not only to the workplace but to human daily activities. Ismaila's result was not different from the outcome of the study of most researchers in Nigeria on the issue. For example, Oladeinde, Ekejindu, Omoregie, and Aguh (2015) in their study of the awareness and knowledge of ergonomics among medical laboratory scientists in Nigeria concluded that, awareness of ergonomics and knowledge of gains of its right application was poor among the study participants. Their study further revealed that the level of awareness was not significantly affected by affiliation, area of specialisation, post-qualification experience, and education qualification of their study participants. Thus, Oladeinde (2015); Momodu, Edosomwan (2014) advocated for regular ergonomic education and awareness of ergonomics practice to be consciously taken to the door step of employers and employees by the Ergonomic Society of Nigeria.

Tepper (2011) observed that library ergonomics has been largely ignored because previous studies on libraries have been based on library staff, whereas studies addressing library users and ergonomics have been limited in scope. In this study on ergonomics intervention in a library, he found that body area that mostly experience discomfort are the back and the neck. This in the long run affects the performance of the library personnel since users could not perform optimally in discomfort. The gaps expected to be filled in this study were: it did not investigate the impact of an environmental factors of ergonomics such as odour, noise, and poor illumination on job performance and also, the joint impact of ergonomics.

Popoola and Henry (2006) quoting Marshall (1996) suggested that ergonomics programmes to tackle work-related problems should focus on education and the physical layout of the work area and likewise organisational behavioural changes. According to them, the computerisation of libraries in Nigeria often excludes health and safety factors due to ignorance on the part of library management. According to them, lack of proper consideration for ergonomics aspects when purchasing computer equipment and furniture for library automation, often gives rise to the wrong posture, causing unnecessary injuries to users. Popoola and Henry (2006) found that five major health hazards militated against the job performance of library personnel are due to poor ergonomics. Such hazards include backache (94.4%) neck pain (88.7%) poor vision (77.8%), headache (66.7%) and boredom/fatigue (50.0%). They suggested that ergonomics should be budgeted for at the planning stage and also equipment and furniture should be carefully selected with flexibility. They concluded that library authorities should embark on ergonomics programmes that will provide for the health, safety, comfort, and environmental needs of the library users and staff. Also, ergonomics programmes of the library must be well funded.



Theoretical Underpinning

Transactional Stress Theory of Ergonomics

Stanton (2010) stated that Matthew (2001) propounded a transactional stress theory of ergonomics. He used an approach that focused on the interaction between workers, tools, and their environment. He argued that the dynamics of this interaction are the keys to understanding the difference in individual experiences of stress. Through his past research, Matthew and colleagues have identified five dimensions of workers' stress. These are dislike of duties, aggression, fatigue proneness, hazard monitoring, and thrilling seeking. In research carried out on drivers, it was revealed that the theory scale correlated with driving offenses, violations, and driving culture. Further evidence supported the notion that the stress state is dependent upon appraisal of the task and the coping strategies they bring to bear on it. The workers' personality and working situation also influence the stress. Matthew used his theory of stress to propose transactional design intervention principles. The principles call for an understanding of how technology and the working condition affects the meaning that workers attach to tasks. The implication of this theory to libraries is that where libraries works under a condition that is not ergonomics sensitive, stress is generated and this could lead to aggression, fatigue, pain, and health hazards which in the long run affect job performance.

Job Performance Theory

This present study focuses on the job performance of personnel and hence, the hypothetical framework on which it was anchored is the theory of John Campbell (1990). This theory centred on an eight-factor theory of performance that attempts to capture a different aspects of job performance across all jobs. Campbell (1990) looking at it from a psychological perspective describes job performance as a multidimensional construct consisting of more than one kind of behaviour. He again discussed some key features which clarify what job performance entails. In the first instance, Campbell differentiates performance from outcomes. Outcomes were conceptualised to be the result of an individual's performance. To further clarify what performance means, Campbell (1998) affirmed that performance does not have to be directly observable actions of an individual. But rather it can consist of an individual's mental productions in terms of answers to some posers and decisions taken in respect of some actions. Performance is viewed as either mental or behavioural and must be under an individual's control.

Campbell (1990) again stated that the structure of job performance can be modelled using job-specific task proficiency, non-job-specific task proficiency, written and oral communication, demonstrating effort, upholding personal discipline, facilitating peer and team performance, supervision/leadership, and



management/administration. All these factors represent the highest-order factors that can help describe performance in every job in the occupational domain, although some factors may not be relevant for all jobs. Core task proficiency, demonstrating effort, and maintaining personal discipline are important components of performance in every job. Campbell (1990) theory is applied to this study because the library personnel have their specific and non-specific tasks which they must carry out to move the library forward. These include oral communications or actions and they must be diligent in carrying out their duties. Good management/administration is needed in developing the libraries. Organisation commitment, psychological work environment and job satisfaction are needed for the personnel working therein to be up and doing which invariably prompt them to have the interest of their organisation at heart. Psychological resilience is needed in maintaining their discipline and moving forward. Nearly all the factors considered by Campbell (1990) are germane to this study and can lead to the improvement of job performance

Research Methodology

The content analysis research design was adopted for this write-up. This involves analysis of secondary sources of information such as articles in Journals and book chapters among others. This design was adopted because of its suitability in providing a way to approach this study. Kirumbi (2018) defines research design as a set of methods and procedures used in collecting and analysing measures of the variables specified in the research problem.

Discussion

A critical analysis of the literature and studies investigated in this study was able to establish the fact that most library personnel cannot perform to their optimal capacity as a result of the factors relating to conducive working environment. This is in line with report from the study Okpe (2012) who emphasised that academic librarians are usually able to perform to their optimum capacity of being involved in the day-to-day management of the academic institutions' learning resources along with teaching, giving instructions to users and carrying out daily administrative duties to ensure an encouraging learning and teaching environment.

2003). Some responsibilities of library personnel are to meet and serve the library's user community; to think analytically, to develop new or revised systems, procedures, and work flow; to exercise initiative and independent judgment; to have knowledge of computers, the internet, and commercially available library software; to prepare comprehensive reports, and present ideas clearly and concisely in written and oral form. Library personnel need knowledge of the philosophy and techniques



of library management; the ability to organize job duties and work independently; demonstrated knowledge of library materials and resources; creativity to develop and implement library programs and services; to communicate both orally and in writing and employ management techniques effectively in directing, planning, organising, staffing, coordinating, budgeting, and evaluating the library's operation (American Library Association, 2006). Optimal performance of these job schedules by the library personnel requires a properly fit state of ergonomics of the library working environment. In support of this, Ogedengbe (2015), stated that there are ergonomic design standards which have been established for any educational environment (library) in terms of conduciveness of the environment, suitability, and adequacy of facilities provided within the library. In terms of sound level, relative humidity, and temperature of the environment, the standard level of sound allowed for example in a library is 40 decibels (Aaberg, 2014), while its relative humidity shall be set at a level of 35% and 50%. There are several ways through which ergonomics can contribute to the suitability of library use which includes among others, the preservation of health, creation of a good and comfortable environment and adjusting the process of library service delivery according to users' needs.

This study has been able to bring out the importance and relevance of good library ergonomics to ensure that library personnel are able to perform at their optimal level of performance. This indicates that the better the state of ergonomics in a library, the better the job performance of the library personnel and vice versa. In support of this, Fritsher-Porter (2003) stated that an ergonomically friendly office environment can probably be increasing efficiency, productivity, and performance in the organization (Fritsher-Porter, 2003). Popoola *et al.*, (2006) further reiterated that five major health hazards militating against service delivery in the library due to poor ergonomics include backache, neck pains, poor vision, headache and boredom as well as fatigue. Optimal job performance by library personnel is influenced by factors such as library layout and design, furniture positioning, noise and light.

Summary and Conclusion

This write-up has been able to establish that there is core relationship between performance of library personnel and the ergonomics of library building such that the optimal performance of library personnel was found to be a major function of ergonomics of library building. This present investigation has been able to establish that most library buildings in developing countries have poor state of ergonomics which is seriously ninder the performance of the library personnel. Thus, it can be concluded that the better the ergonomics of library buildings, the better the job performance of the personnel.



Recommendations

The following recommendations are made based on the findings of the study:

The study revealed that the ergonomics of library buildings in most libraries in Nigeria are poor, therefore, library management should endeavor to improve more on the ergonomics factors in terms of the conduciveness and physical arrangement of the library to improve library personnel job performance. Thus, library authorities should support the ergonomics of the library and provide conducive physical layout that will enhance the effective job performance of library personnel.

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CHAPTER 23

MODELLING THE SCIENCE TEACHER IDENTITY THROUGH THE ENHANCED-MICROTEACHING AMONG PRE-SERVICE SCIENCE TEACHERS IN PUBLIC COLLEGES OF EDUCATION IN SOUTHWESTERN NIGERIA

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Abstract

The level of expectation and responsibility demands of a science teacher in today's society calls for a remodel of science teaching systems with respect to who teaches science and how it is taught. Consequently, science teachers need a deliberate social and identity transformation if they are to achieve the aim of science education in the world today. This view, calls for a rethink in teacher training programs to prepare pre-service science teachers for identities compatible with the new realities. The need to address this issue has given impetus to this experimental study on modelling the science teacher identity through Enhanced-microteaching among pre-service science teachers in public Colleges of Education in Southwestern Nigeria. The study adopted an embedded mixed method of one group pretest-posttest quasi experimental and survey research design. The study involved 133 pre-service teachers from intact classes of part II pre-service science teachers who were purposively selected from the three government owned colleges of education in south-western Nigeria. Pre-service teachers were exposed to a specially Enhanced-Microteaching Procedure ($r = 0.73$). A Science Teacher Identity Rating Scale ($r = 0.81$) complemented with in depth interviews were used to collect data for answering the three research questions raised to guide the study. Treatment lasted 11 weeks. Quantitative data were analyzed using descriptive statistics, Pearson product moment correlation, multiple regression analysis at 0.05 level of significance, while qualitative data



were content-analysed. Findings revealed that science teachers' identity among the pre-service science teachers in public Colleges of Education in Southwestern Nigeria was very poor. The study also revealed that modelling science teacher identity through Enhanced microteaching improved teacher identity ratings and transformed science teacher identity among the pre-service science teachers as confirmed by interviews with teachers. Therefore, adopting more vibrant strategies like enhanced micro teaching in teacher training will better prepare confident teachers who can cope with dynamic classroom situations.

Keywords: Science teacher identity development, Science teacher preparation, Modelling

Introduction

Science teaching is an important aspect of science education, and it should be by helping the learners to develop interest and gain more confidence in science and scientific investigations. Moreover, it is worthy of note that what students learn is largely influenced by how they are taught and so, science should not be taught in abstract or presented in an isolated way, but rather through activities that relates it with daily experiences. Particularly, achieving effective science teaching in the classroom, Degi and Zangmu (2017) suggests that every science teacher should plan to meet the objectives of the curriculum, show the mastery of the subject matter with the support of different instructional strategies and materials to promote pedagogically complete lessons.

Furthermore, we are in an age when learners especially in basic science must have understanding of the dynamic contexts and contents of various scientific advancements in the world. This is not different from Ige and Ogunseemi (2016) who posited that we are in a dynamic world where basic science classroom requires that every science teacher must be certain and confident of their job. However, the job of teaching is not without its challenges according to Ukaigwe and Adieme (2018), and it corroborates researchers such as Bhargava and Parthy (2014), Frick, Carl and Beets (2010) who have shown that teachers are faced with challenges of uncertainties in every classroom.

Moreover, Lawal (2012) have listed the challenges of teaching profession in Nigeria to include but not limited to poor remuneration, poor conditions of service, and unfriendly school environment which he claimed to be a great challenge to teacher identity. It is also in line with Van Lankveld, Schoonenboom, Volman, Croiset and Beishuizen (2017) who highlighted the components of teacher identity to include but not limited to a sense of appreciation, connectedness, competence, commitment and forth sight in the job. In addition to this, teachers' emotional attachment, commitment,



responsibility and professional satisfaction are indicators of teacher identity which can be a good remedy for teachers' challenges in every classroom (Kayapinar 2018).

However, every science teacher who shows job satisfaction, organizational commitment, self-efficacy, and motivation among others indicates a well-developed resilience for the job which according to Li (2016) is one of the requirements to measure up with the challenges of teaching science in the contemporary society. Additionally, the previous submission corroborates Khoza (2022) who established that developing science teacher identity early and particularly by pre-service science teachers is important because this can influence their perceptions about science teaching and learning. Consequently, teacher training institutions should begin to train the basic science teachers to develop the science teacher identity for effective teaching practices because of their dynamic roles in science classroom.

The previous demand is in line with the submission of Avraamidou (2018) who revealed that science teacher identity is an ongoing process which involves interpretation and re-interpretation of practices. Moreover, it is according to Mensah and Jackson (2018) who suggested that developing the science teacher identity of the pre-service science teachers must be a combined effort in teacher education programs either through microteaching experiences or all-inclusive approaches to teaching science. This is not different from Chen and Mensah (2018) who argued that science teacher identity is often greatly affected by the training experiences of the pre-service science teachers in teacher education program. It is not also divergent from Keiler (2018) who concluded that mastery in classroom teaching can be aided by identity formation in teacher education program.

Therefore, teacher education program in Nigeria according to Ukaiwe and Adieme (2018) demands for a review in order to meet up with the challenges of global development in education. This review is in line with the initiative of the Federal Republic of Nigeria (FRN, 2014) to expose pre-service teachers to innovations that can structure teacher education programs to meet the needs of the society. Although, traditionally, pre-service teachers are prepared through microteaching which is an empowerment technique for teachers and a critical component of the teacher education program in Nigeria and world over. It is an opportunity for pre-service teachers to practice teaching in a small class size and in a short time for a microscopic view of teaching actions in a teach, and re-teach cycle (Kumari and Naik, 2016).

Recently, base line data on the status of microteaching in Colleges of Education in Nigeria has shown variations in the basic microteaching procedure compared with the National Commission for Colleges of Education (NCCE) approved format (NCCE, 2012). It ranges from over population of microteaching groups where at times an entire class of twenty, or even twenty-five are used as microteaching group. In addition, the probabilities of pre-service teachers to try-out teaching in a mock classroom without having to worry about low grades and failure seems to be impossible.



The inadequacies in microteaching may be as a result of internal or external factors such as; time, and personnel to handle simultaneous sessions result in passive supervisees because of the large number of lessons that each pre-service teacher will take turns to teach. It also means that each pre-service teacher will have no opportunity for thorough supervision. Microteaching laboratory is gradually losing the value of effective feedback through the aid of video tape recorder which is supposed to be the actual picture of the pre-service teacher's teaching, and also the evaluative feedback from the supervisor and peers due to improbability of re-teaching the same topic in similar condition.

The problems of inadequacies in microteaching had been confirmed by Al-Humaidi and Abu-Ramah (2015) who noted a sudden display of indifferent behavior, and lack of interest in microteaching activities by pre-service teachers. The problems identified feasibly necessitates various strategies and innovations to enhance the microteaching processes in teacher education program. This is similar to Thabane (2019) who also used a reflective practice of professional sharing in a lesson study group as an initiative to enhance microteaching among pre-service teachers in the Department of Educational and Professional Studies, Central University of Technology, Free State, South Africa.

Pow and Lai (2021) in an attempt to ensure pre-service teachers' effective feedback from peers conducted a study in Hong Kong Baptist University to enhance the quality of pre-service teachers' reflective teaching practice through building a virtual learning environment. This kind of practice according to Paul, Doughty, Thompson and Hartley, (2019) is an important strategy in learning how to become science teachers because it strengthens interaction and feedback to enhance the teaching skills of the pre-service teachers. It is also consistent with Ige and Kareem (2011) who claim that reflective practice is particularly important in science classroom activities where learners are encouraged to take charge of their learning.

Reflective practice is a teacher training strategy that has changed the mode of learning how to teach especially in the fast changing world. It is a paradigm shift to teacher education programs where pre-service teachers are allowed to interpret experiences through group discussions (Farrel, 2018). However, in situations where group discussions are purposely set up to improve teaching and learning, reflective practice particularly in such group discussion will enable practitioners to make sense of that situation and as well understand how it has affected them, in order to improve (Enochson, 2018). Therefore, through the reflective discussions this study seeks to assist the pre-service science teachers to be autonomous in practice by effective monitoring of the teaching processes with a view to close the gaps between systems of practice.



Statement of the Problem

The science teacher is important towards the attainment of science teaching and learning in schools. Particularly, the teaching and learning of basic science requires that every science teacher should build capacity to face challenges of uncertainties in classroom situations. This includes but not limited to effective lesson planning and actions that can stimulate learners' attention and interest in science, and as well relate science concepts to real world activities. However, it is clear that there are much to be done in Nigeria to assist science teachers to develop mastery of the subject matter and as well adapt their teaching methods to accommodate different learning styles and abilities that can provoke scientific breakthroughs in our clime. This is evident in poor funding of scientific research, lack of appropriate teaching materials, poor attitudes of the society to science and scientific investigations. Furthermore, lack of structures and science teaching environment that connects basic science to the real world are factors which is definitely working against the several indicators of science teacher identity in Nigeria. Therefore, it is against these gaps that this study investigates modeling the science teacher identity through the enhanced microteaching among pre-service science teachers in public Colleges of Education in Southwestern, Nigeria.

Research Questions

The following research questions were raised to guide the study:

1. What is the status of science teacher identity among pre-service science teachers in public Colleges of Education in Southwestern Nigeria?
2. What relationship exists between the enhanced-microteaching actions and science teacher identity among pre-service science teachers in public Colleges of Education in Southwestern Nigeria?
3. What are strategies to enhance the science teacher identity among pre-service science teachers in public Colleges of Education in Southwestern Nigeria?

Methodology

The study adopted an embedded mixed method of one group pretest-posttest quasi experimental and survey research design. The study involved 133 (A; 43, B; 53, and C; 37) pre-service teachers from intact classes of part II pre-service science teachers who were purposively selected from the three government owned colleges of education in south-western, Nigeria. Pre-service teachers were exposed to a specially Enhanced-Microteaching Procedure which was validated using scott Pi's inter-rater reliability index and the value 0.73 was obtained which shows substantial agreement



among raters, and to make the instrument reliable for use. A Science Teacher Identity Rating Scale which consists of sections (A and B) while A are the demographic information of participants and B which was divided into two parts contains 20 items to elicit information about pre-service science teacher identity. The instrument was modified on a 4 point Likert scale of 1 to 4: Strongly Agree = 4, Agree = 3, Disagree = 2, and Strongly Disagree = 1. Therefore, every participant can score as low as 1, and as high as 4 in each case. The pilot test run to ascertain the reliability of the instrument established Cronbach alpha value of 0.81 which made it reliable for the study. It was complemented with in depth interviews were used to collect data for answering the two research questions raised to guide the study. Treatment lasted 11 weeks. Quantitative data were analysed using descriptive statistics, Pearson product moment correlation, Multiple regression analysis at 0.05 level of significance, while qualitative data were content-analysed.

Table 1: Mean and standard deviation analyses of the status of science teacher identity among pre-service science teachers in public Colleges of Education in Southwestern Nigeria

S/N	Items	College A (n=43)		Remarks	College B (n=53)		Remarks	College C (n=37)		Remarks
		\bar{x}	S.D		\bar{x}	S.D		\bar{x}	S.D	
1	I am not sure of my identity as a science teacher	0.24	0.05	Very Poor	1.35	0.37	Poor	0.11	1.23	Very poor
2	Trained teacher uses time effectively in the lesson.	1.18	1.41	Poor	0.18	0.19	Very poor	1.12	1.84	Poor
3	I feel I am a teacher every time I am called to teach	0.17	0.89	Very Poor	1.26	0.67	Poor	0.34	0.67	Very poor
4	Teaching is a difficult profession	1.22	1.76	Poor	0.63	1.48	Very poor	1.48	1.13	Poor
5	I feel comfortable and confident whenever I am asked to teach.	1.16	0.78	Poor	2.15	0.89	Average	1.19	1.27	Poor
6	It takes a good teacher to control his/her emotions during lessons.	2.27	0.52	Average	0.33	1.16	Very Poor	1.63	0.95	Poor



7	I feel confident that I can be a teacher	0.23	0.27	Very poor	1.32	2.11	Poor	0.44	0.27	Very poor
8	I actually do not want to be a science teacher	0.37	1.26	Very poor	0.19	0.52	Very poor	0.16	1.35	Very poor
9	I can use appropriate teaching strategies to teach any lesson	1.32	0.76	Poor	1.27	0.74	Poor	0.14	0.23	Very poor
10	Science teachers must be dynamic in teaching	1.23	0.89	Poor	0.83	1.56	Very poor	2.25	1.03	Average
	Grand Mean	0.91	0.86		0.96	0.97		0.89	0.80	

Research Question One: What is the status of science teacher identity among pre-service science teachers in public Colleges of Education in Southwestern Nigeria?

Scale: 0.00 – 0.99: Very Poor, 1.00 – 1.99: Poor, 2.00 – 2.99: Average, 3.00 – 3.99: High, 4.00 – 5.00: Very High

Table 1 shows that all the items from the respondents have a Grand mean scores below the criterion mean of 2.50 which indicated a low status of science teacher identity among pre-service science teachers in public Colleges of Education in Southwestern Nigeria.

Research Question Two: What relationship exists between the enhanced microteaching actions and science teacher identity among pre-service science teachers in public Colleges of Education in Southwestern Nigeria?

Table 2: Correlation Matrix showing the relationship between the enhanced-microteaching actions and science teacher identity among pre-service science teachers in public Colleges of Education in south western Nigeria

Variables	Teacher identity	Lesson plan	Lesson note	Preparation skill	Presentation skill	Classroom management	Closure
Teacher identity	1						
Lesson plan	0.388*	1					
	0.000						



Lesson note	0.372* 0.000	0.425* 0.000	1				
Preparation skill	0.309* 0.000	0.397* 0.000	0.283* 0.001	1			
Presentation skill	0.226* 0.009	0.007 0.935	-0.108 0.215	0.353* 0.000	1		
Classroom management	0.248* 0.586	-0.101 0.250	-0.130 0.135	0.012 0.891	0.482* 0.000	1	
Closure	0.210* 0.905	0.078 0.374	0.028 0.748	0.041 0.640	0.272* 0.002	0.513* 0.000	1
Mean	54.45	9.08	8.33	8.62	9.90	9.69	9.67
STD.D	11.14	1.98	2.19	2.16	1.70	1.55	2.15

* denotes significant at $p < 0.05$

Table 2 shows that there was positive significant relationship between lesson plan (0.39; $p > 0.05$), lesson note ($r = 0.37$; $p > 0.05$), preparation skill (0.31; $p > 0.05$), presentation skill (0.27; $p > 0.05$), classroom management ($r = 0.25$; $p > 0.05$), closure ($r = 0.21$; $p > 0.05$) and science teacher identity among the pre-service science teachers in public Colleges of Education in south western, Nigeria. This implies that all the enhanced microteaching actions such as lesson plan, lesson note, preparation skill, presentation skill, classroom management and closure were positively related to science teacher identity.

Research Question Three: What are strategies to enhance the science teacher identity among pre-service science teachers in public Colleges of Education in Southwestern Nigeria?

Table 3: Mean and standard deviation analyses of the strategies to enhance science teacher identity among pre-service science teachers in public Colleges of Education in south western Nigeria

S/N	Items	College A (n=43)		Remarks	College B (n=53)		Remarks	College C (n=37)		Remarks
		\bar{x}	S.D		\bar{x}	S.D		\bar{x}	S.D	
1	Reflective practice by feedback mechanism in microteaching	2.24	0.03	SA	2.09	1.64	SA	2.10	1.03	SA



2	Face-to-face reflective discussion	2.65	1.21	SA	3.17	0.83	SA	3.35	1.91	SA
3	Face-to-screen reflective discussion	2.78	0.99	SA	2.58	1.34	SA	2.68	0.73	SA
4	Asynchronous feedback	2.18	1.99	SA	2.64	2.15	SA	2.79	1.05	SA
5	Synchronous feedback	3.23	0.84	SA	3.89	1.78	SA	2.63	1.34	SA
6	training and re-training on the use of Technology to enhance teaching	2.56	0.42	SA	2.28	2.89	SA	3.88	0.87	SA
7	Provision of adequate teaching materials	2.34	0.17	SA	2.73	1.34	SA	2.74	0.17	SA
8	Provision of structure and enabling environment for science teaching and learning	3.56	1.24	SA	2.86	0.97	SA	3.36	1.55	SA
9	Adequate fund of scientific research	2.28	0.66	SA	3.56	1.42	SA	2.54	1.86	SA
10	Scientific plan strategy to relate science to real world activities	2.45	0.88	SA	2.05	2.27	SA	2.01	1.08	SA
	Grand Mean	2.63	0.84		2.79	1.66		2.81	1.16	

Scale: 0.00 – 0.99: Very Poor, 1.00 – 1.99: Poor, 2.00 – 2.99: Average, 3.00 – 3.99: High, 4.00 – 5.00: Very High

Table 3 shows that all the items from the respondents have a Grand mean scores above the criterion mean of 2.50 which indicated that all the items established the various strategies that could be used to enhance the training modes to promote science teacher identity among pre-service science teachers in public Colleges of Education in Southwestern Nigeria.



Discussion of Findings

The study reveals that that science teachers' identity among the pre-service science teachers in public Colleges of Education, Southwestern, Nigeria was very poor. This result validates Lawal (2012) who shows that poor remuneration, poor conditions of service, and unfriendly school environment constitutes a great challenge to teacher identity in Nigeria. It is obvious in the result that there are issues with science teacher identity as confirmed in the participants' responses to indicators. This is in contract with Van Lankveld, Schoonenboom, Volman, Croiset and Beishuizen (2017) who submits that absence of sense of appreciation, connectedness, competency, commitment and forth sight in the job of teaching can be equal to very poor teacher identity.

The study also reveals that modelling science teacher identity through Enhanced microteaching improved teacher identity ratings and transformed science teacher identity among the pre-service science teachers in public Colleges of Education, Southwestern Nigeria. The result is definite on Thabane (2019) who used a reflective practice of professional sharing in a lesson study group as an initiative to enhance microteaching among pre-service teachers in Central University of Technology, Free State, South Africa. It is also in agreement with Pow and Lai (2021) enhanced the quality of pre-service teachers' feedback through building a virtual learning environment in Hong Kong Baptist University. It also established Paul, Doughty, Thompson and Hartley (2019) who sees this kind of practice as an important strategy in learning how to become science teachers because it strengthens interaction and feedback to enhance teaching actions among the pre-service teachers.

Furthermore, the result can be confirmed by interviews with the pre-service science teachers and for instance;

Participant from College A (microteaching group 1):

I think I am more than ready and confident to be a teacher.

Participant from College A (microteaching group 3):

as we discussed after our microteaching today I was made to understand that my student will always make different meaning from whatever I say.

Participant from College B (microteaching group 2):

It is soo interesting to discuss the outcome of our teaching on WhatsApp because it gives me opportunity to express myself more and to take my time to attend to other things.

Participant from College B (microteaching group 5):

What interests me most are videos of our teaching which was posted during our discussions and you need to see grammatical blunders of people and errors being



made while teaching but anyway we are still learning to teach and we can be better next time.

Participant from College C (microteaching group 1):

Now I know that if I continue like this, I will be able to handle any type of students and even anywhere.

Participant from College C (microteaching group 4):

Teaching is made simple by all that we have done today and I believe that everyone of us must have learnt what it takes to be a good teacher especially in the kind of society we are in today.

The study also revealed the following as vibrant and more innovative strategies to enhance the science teacher identity among pre-service science teachers in public Colleges of Education in Southwestern Nigeria: Reflective practice by feedback mechanism in microteaching, Face-to-face reflective discussion, Face-to-screen reflective discussion, Asynchronous feedback, Synchronous feedback, training and re-training on the use of Technology to enhance teaching, Provision of adequate teaching materials, Provision of structure and enabling environment for science teaching and learning, Adequate fund of scientific research and Scientific plan strategy to relate science to real world activities.

Conclusion

Based on the findings, the study concluded that there are challenges to science teacher identity formation among pre-service science teachers in public Colleges of Education in south western, Nigeria. This is due to issues with several indicators of teacher identity formation such as; indecision, empathy, determination and modelling. Therefore, adopting or adapting more vibrant strategies like enhanced micro teaching in teacher training will better prepare confident teachers who can cope with dynamic classroom situations.

Recommendations

1. The government should be more committed to welfare of teachers by increment in salaries, provision of equipment and resources for effective teaching in public schools.
2. The government should empower teacher training institutions by provision of state of the art equipment for training and re-training of teachers in line with current development in teaching and learning worldwide.



3. Teacher training institutions should adopt or adapt more vibrant strategies to enhance teacher identity among pre-service and in-service teachers.

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CHAPTER 24

RELATIONSHIP BETWEEN POST-TRAUMATIC STRESS DISORDER AND SOCIAL ADJUSTMENT AMONG ADOLESCENT STUDENTS IN PUBLIC SECONDARY SCHOOLS IN DELTA STATE

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Abstract

This study examined the relationship between post-traumatic stress disorder (PTSD) and social adjustment among adolescent students in public secondary schools in Delta State. Three research questions and three corresponding null hypotheses were formulated to guide the study. The study adopted a correlational research design. The estimated population of the study were 28,634 adolescent students in public secondary schools, Delta State. Multi stage sampling procedure and simple random sampling technique was used to sample 300 male and female SSS 2 adolescents. Data was collected using post-traumatic stress disorder questionnaire (PTSDQ) by Prins, Bovin, Kimerling, Kaloupex, Marx, Kaiser and Schnurr (2015). The Generalized Anxiety Disorder Questionnaire called the (GADQ-7) by Spitzer, Williams, Kroenke, (2006), Depression Patient Health Questionnaire, and Social Adjustment Scale developed by Weissman (1999), Cronbach alpha was used to determine the internal consistency of the instruments, Post-traumatic stress disorder has $r = .71$, Generalized Anxiety Disorder has $r = .62$, Depression Disorder has $r = .80$ while Social Adjustment has $r = .89$ after pilot testing. The data collected was analysed using descriptive (mean and standard deviation) and inferential statistics at 0.05 alpha level of significance. The finding shows that the following relationship exists between anxiety and social adjustment of secondary school adolescent students ($r = .459$, $p = .000$). Depression and



social adjustment of secondary school adolescent students ($r = .500, p = .000$), PTSD and social adjustment among adolescents ($r = .570, p = .000$). It was recommended among others, that traumatic adolescents should be empowered to improved their social skills and competence to prevent social adjustment problems which can lead to anxiety and depression. Government and school owners should provide counselling centers in every school for counselling adolescents with psychological problems.

Keywords: *Post-traumatic Stress Disorder, Anxiety, Depression, Social adjustment, Adolescents*

Introduction

Experiencing trauma during childhood and adolescence can lead to subsequent impairments in social adjustment (Patel, Staudenmeyer, Wickham, Firmender, Fields and Miller, 2017). Exposure to trauma and stressful situations has become very common in the lives of many adolescents in Nigeria and around the world. According to the World Bank (2018), over 180 civilians have lost their lives in suicide bomb attacks in North East Nigeria since late 2016. Furthermore, Amnesty International has reported that clashes between farmers and herders have claimed at least 268 lives in 2018 alone leaving a lot more people with various degrees of life changing in North Central Nigeria (Amnesty International, 2019). Among these various traumatic exposures is the one related to road traffic accidents, Casual observation of happenings in Nigeria has shown that beside the recent killings and destruction of properties by the insurgents in the North East and by militants in the Niger Delta region, farmer/herder crisis in the North Central, road traffic accident is the most common cause of unintended injuries and fatalities to individuals and families in Nigeria (Luka, 2017). Terrible events that have occurred in the life of the adolescent, affect his social adjustment with the people around him/her; some adolescents respond to situations such as, anxiety, having nightmares, re-experiencing the event when awake, avoiding people, places or things that remind them of the disasters. These are symptoms of post- traumatic stress disorder. It is important to identify and examine the social adjustment of adolescents who are at the risk of developing symptoms of post-traumatic stress disorder (PTSD) following the tragedy that leads to such events. As a result of PTSD, adolescents experience mitigated social interaction and relationships with others which can further contribute to depressive symptoms. Results from a study by Şimsek, Öztürk and Nahya (2020) showed that individuals with post-traumatic disorder changed their emotions, cognitive and behaviors after the events, their self-esteem may be negatively affected, they may have negative feelings about their future, and they need mental support to develop coping skills. The researchers concluded that after the stressful and traumatic situations, adolescents may



have severe mental problems such as anger, anxiety and depressive symptoms, introversion, helplessness, and decreased self-esteem.

(PTSD) is an anxiety disorder which occurs following an event or situation in which the individual perceives that his life or another's is in danger. It is a debilitating, long-standing, and pervasive disorder, with risk of morbidity, chronic physical and psychiatric disturbances and impairment to interpersonal and occupational functioning following exposure to trauma. This disorder is unique among the classification of disorders because all of the criteria (risk of morbidity, chronic physical and psychiatric disturbances, and impairment in interpersonal and psychological functioning) must be present before making the diagnoses, where by no symptom overlap may occur between two cases despite the fact that they both meet the requirement for diagnoses (Foa and Meadow, 1997). Difficulties with social adjustment may remain unimproved in traumatized adolescents (Ahmadi, Forooshani, *et al.*, 2019). When social adjustment problems are not improved, it can result in major risks for mental health problems such as increased vulnerability to depression and anxiety (Bosc *et al.*, 1997; Montgomery and Fold, 2008). The issues that are related to social adjustment can especially be expected among adolescent populations because adolescence is a critical stage of development in terms of the rapid changes, and adjusting with new social roles, norms, and expectations (Berk, 2007). Adolescents who experience trauma can affect their cognitive abilities that are necessary for adjustment in social settings. Hence, when these abilities are not improved, some issues with social adjustment may continue to persist. Individuals with trauma history tend to recall their past memories in a general way and without specific details (Sutherland and Bryant, 2007). It can have effects which include flashbacks, difficulty in sleeping, anxiety and depression.

Social adjustment is an effort made by a person to adapt effectively with the standards, values and needs of the society in order to be acceptable. It has been shown that adolescents who are traumatized during childhood and adolescence show low level of social competence and acceptance and tend to be isolated, rejected and generally have worse relationships with others. According to Santrock (1995) social adjustment involves changes in the individual relation with other people, it affirmed that social adjustment remains a highly functional or serviceable word in psychology because it concerns with many ways in which an individual manages his/her social affair so, the behavior has the function of reflecting demands made upon a person by the environment. Some research has shown that post-traumatic stress disorder has a negative influence of social adjustment on adolescents.

Anxiety is a mental health disorder, it is a feeling of fear, worry, and uneasiness. It varies from mild to severe and can be reaction to stress and new situations for most people. Adolescents may be at higher risk for anxiety disorder if they experience a certain stressful or traumatic events in their early childhood. They may have repeated thoughts or flashback of traumatic experience, inability to calm,



trouble sleeping, etc. All these symptoms of anxiety disorder, if not well managed, can harm the adolescents, family, relationship, academic performance and social functioning, this can also lead the adolescents to serious mental health problems.

Depression is a mood disorder that causes a persistent feeling of sadness and loss of interest in all most all normal activities such as sex, hobbies. it affects how one think, feel and behave, people with depressive symptoms usually have hopelessness, irritability, frustration, sleep disturbances, tiredness, low thinking, feeling of worthlessness, suicidal thoughts, for many adolescents with these symptoms, usually refuse to go to school, they feel unhappy without knowing why, poor performance in school, and absenteeism in school. If this disorder is not attended to, it may result to behavioural, emotional and health problem that could harm every aspect of the adolescent's life. The risk of developing depression is increasing around the world particularly among adolescent students. It seems that there is a relation between PTSD and social adjustment that has been overlooked. However, in past studies there has not been an appropriate comparison between PTSD and social adjustment. Therefore, the aim of this study was to identify the association between post-traumatic stress disorder and its subcomponents such as anxiety and depression on social adjustment of adolescents.

Purpose of the Study

The aim of this study is to analyse the relationship between post-traumatic stress disorder on social adjustment among adolescents in public secondary schools in Delta State.

Research Questions

The following research questions guided the study:

1. What is the influence of anxiety as a sub-component of post-traumatic stress disorder and social adjustment in adolescents?
2. What is the influence of depression as a sub-component of post-traumatic stress disorder and social adjustment in adolescents?
3. What is the influence of post-traumatic stress disorder on social adjustment in adolescents?



Hypotheses

1. Anxiety as sub-component of post-traumatic stress disorder has no significant influence on social adjustment in adolescents.
2. Depression as sub-component of post-traumatic stress disorder has no significant influence on social adjustment in adolescents.
3. Post-traumatic stress disorder has no significant influence on social adjustment in adolescents.

Methods

This study employed a correlational research design. The target population of this study comprises of all public secondary schools in the 25 local government areas of Delta State. And the estimated number of male and female SSS2 students in the 25 local government areas was 28, 634. 300 adolescent SS2 students were selected from the three Senatorial District in Delta State. 100 male and female students were selected from one L.G.A each from the three Senatorial District, which includes Ukwuani in Delta North Senatorial District, Ughelli North in Delta Central Senatorial District and Isoko North in Delta South Senatorial District, Delta State, which gave a total number of Three Hundred (300) students with symptoms of trauma in six (6) secondary schools. This was done through multi-stage sampling procedure and purposive sampling techniques.

Data collection in this study was through the use of a questionnaire Tagged Post traumatic stress disorder, Anxiety, Depression and social adjustment scale. The research instruments are made up of four (4) sections, Section A: post-traumatic stress disorder questionnaire (PTSDQ) by Prins, Bovin, Kimerling, Kaloupek, Marx, Kaiser and Schnurr (2015). The PTSDQ is a self-report screening test consisting of 5 questions that assess post-traumatic stress symptoms. e.g. I always have night mares about the event (s) or thought about the event(s) when I do not want to.

Section B: The Generalized Anxiety Disorder Questionnaire called the (GADQ-7) by Spitzer, Williams and Kroenke, (2006) is a self-report questionnaire consisting of 7 screening items that can help find out if a student might have an anxiety disorder that needs treatment from mild to severe anxiety. e.g. I always feel nervous or anxious, I worry too much about different things.

Section C: Depression scale Patient Health Questionnaire, is self-administered, it is used to monitor the severity of depression and response to treatment. It consists of 11 items, such as, I have no interest in doing things, I usually feel hopeless, and I see myself as a failure.



Section D: Social Adjustment Scale developed by Weissman (1999), is a self-report scale which consist of 16 items and is scored on a 4-point scale from 1 (Strongly Agree) to (Strongly Disagree).

The instruments for the study were subjected to face and content validity by experts in Guidance and Counselling Department, Delta State University, Abraka. For relevance and appropriateness to the study. The instruments were administered to 50 students who will not participate in the main study but have similar characteristics in Ughelli South Local Government Area of Delta State and the data was subjected to facto analysis.

Reliability of the Instruments was established using Cronbach Alpha to estimate the internal consistency of the instruments to know whether the instruments had good psychometric properties of reliability.

Post-traumatic stress disorder has the internal consistency of .71, Generalized Anxiety Disorder has .62, Depression Disorder has .80 while Social Adjustment has .89 respectively. These reliabilities showed that the instruments are reliable to collect data for the research. The data collected were analyzed using descriptive and regression statistics. Mean, standard deviation and Pearson Product Moment Correlation PPMC (r) was used to answer the research questions raised while the regression statistics of was used to test all the three hypotheses.

Results

Research Question One: What is the influence of anxiety as a sub-component of post-traumatic stress disorder and social adjustment in adolescents?

Table 1: Correlation analysis between anxiety and social adjustment in adolescents

Variables	Mean Square	SD	r	r square
Anxiety	52.7500	7.2877	.459	.211
Social Adjustment	40.4567	5.52478		

Table 1 shows the summary results of the Pearson Product Moment Correlation between anxiety and social adjustment ($M=52.7500$; $SD=7.2877$) and SA ($M=40.4567$; $SD=5.52478$). r - value =.459. This implies that there is a relationship between anxiety and social adjustment. The r -square value of .211 revealed that 21.1% variance in social adjustment account for anxiety and the amount of contribution was 21.1%. This means that anxiety contributed 21.1% to social adjustment among adolescents in public secondary schools, Delta State.



Research Question Two: What is the influence of depression as a sub-component of post-traumatic stress disorder and social adjustment in adolescents?

Table 2: Correlation analysis between depression and social adjustment in adolescents

Variables	Mean Square	SD	r	r square
Depression	50.5400	5.68061	.500	.247
Social Adjustment	40.4567	5.52478		

Table 2 showed that the r- value of .500 has a positive relationship between depression and social adjustment. The r-square value of .247 revealed that 24.7% variance in social adjustment account for depression and the amount of contribution was 24.7%. This implied that depression contributed 24.7% to social adjustment among adolescents in public secondary schools, Delta State.

Research Question Three: What is the influence of post-traumatic stress disorder and social adjustment in adolescents?

Table 3: Correlation analysis of PTSD and social adjustment in adolescents

Variables	Mean Square	SD	r	r square
PTSD	52.7500	7.2877	.570	.325
Social Adjustment	40.4567	5.52478		

Table 3 shows that the r- value of .570 has a positive relationship between PTSD and social adjustment. The r-square value of .325 revealed that 32.5% variance in social adjustment account for PTSD and the amount of contribution was 32.5%. This implied that PTSD contributed 32.5% to social adjustment among adolescents in public secondary schools, Delta State.

Hypothesis 1: Anxiety as a sub-component of post-traumatic stress disorder has no significant influence on social adjustment in adolescents.

Table 4: Regression Analysis of the correlation between anxiety and social adjustment among adolescent's in public secondary schools

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1925.893	1	1925.893	79.705	.000



	Residual	7200.543	298	24.163		
	Total	9126.437	299			

Coefficients

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
	Constant	22.087	2.077		10.633	.000
	Anxiety	.348	.039	.459	8.928	.000

The results in Table 4 reveal the regression output of the relationship between anxiety and social adjustment among adolescents in public schools. The computed F-value of $df = (1,299)$, 79.705 , $P \leq .05$ level of significance. Therefore, the null hypothesis was rejected. The finding is that, there is a significant relationship between anxiety and social adjustment among adolescents in public secondary schools. This implies that anxiety has a significant influence on individual responses to social adjustment. The unstandardised coefficient (B) for predicting social adjustment among adolescents was .348. The standardised coefficient (β) was .459, $t = 8.928$; hence anxiety was significant at an alpha level of 0.05 level of significance.

Hypothesis 2: Depression as a sub-component of post-traumatic stress disorder has no significant influence on social adjustment in adolescents.

Table 5: Regression Analysis of the correlation between depression and social adjustment among adolescent's in public secondary schools

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	2279.758	1	2279.758	99.226	.000
	Residual	6846.679	298	22.975		
	Total	9126.437	299			



Coefficients

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	15.890	2.482		6.403	.000
Depression	.486	.049	.500	9.961	.000

The results in Table 5 reveals the regression output of the relationship between depression and social adjustment among adolescents in public schools. The computed F-value of $df = (1,299)$, 99.226, $P \leq .05$ level of significance. Therefore, the null hypothesis was rejected. The finding is that, there is a significant relationship between depression and social adjustment among adolescents in public secondary schools. The unstandardised coefficient (B) for predicting social adjustment among adolescents was .486. The standardised coefficient (β) was .500, $t = 9.961$; hence depression was significant at an alpha level of 0.05 level of significance.

Hypothesis Three: Post-traumatic stress disorder has no significant influence on social adjustment among adolescents.

Table 6: Regression Analysis of PTSD and social adjustment among adolescent's in public secondary schools

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	2962.751	2	1481.375	71.381	.000
	Residual	6163.686	297	20.753		
	Total	9126.437	299			

Coefficients

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	10.096	2.566		3.935	.000



PTSD	.362	.051	.372	7.068	.000
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The results in Table 6 reveal the regression output of the relationship between PTSD and social adjustment among adolescents in public schools. The computed F-value of $df = (2,299)$, 71.381, $P \leq .05$ level of significance. Therefore, the null hypothesis was rejected. The finding is that, there is a significant relationship between PTSD and social adjustment among adolescents in public secondary schools. The unstandardised coefficient (B) for predicting social adjustment among adolescents was .362. The standardised coefficient (β) was .372. And t value = 7.068; hence PTSD was significant at an alpha level of 0.05 level of significance.

Discussion

This study examined the relationship between PTSD and social adjustment among adolescents. As expected, a significant association was found among the components of PTSD and social adjustment of adolescent students. Adolescents who reported more experiences of trauma during childhood displayed lower social adjustment. These results agree with finding of Yawa and Balarabe (2021) which observed a positive relationship between post-traumatic stress disorder and social adjustment among students of college of education Gidanwaya Kaduna State, Nigeria. Our research also agrees with that of Brooks (2008) who found that veterans with combat-related post-traumatic stress disorder were more likely to have a history of students' physical, social and emotional abuse than those without post-traumatic stress disorder among adolescents.

Conclusion

It is concluded from this present study that there is a relationship between PTSD and social adjustment of adolescents in Public secondary schools in Delta State. Therefore, it is important to take in to consideration, the psychological distress of adolescent's caused by childhood traumatic event (s) in order to understand the social problems or behaviour of those involved.

Recommendations

1. Based on the results of this study, traumatized adolescents should be empowered to improve on their social competence skills to prevent social adjustment problems.



2. The federal government and ministry of education should as a matter of urgency introduce compulsory guidance services in all levels of the nation institutions of learning from primary to tertiary levels.
3. A positive classroom environment should be provided by the teacher, to enable adolescents experience the satisfaction that comes from engaging in positive relations with peers and feeling socially competent. In doing so, students will improve their social adjustment.

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CHAPTER 25

EMOTIONAL INTELLIGENCE AND EDUCATION IN NIGERIA

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Abstract

Emotional intelligence is described as the ability to comprehend or perceive any strong feeling. This concept in educational theory and practice is interpreted as teaching individuals how to perceive, comprehend and manage their strong feelings. Failure to manage one's emotions properly will yield unwanted consequences. The Nigerian society being beset with age-long social issues such as moral decadence, inter-tribal wars, violent emotional outbursts and many more motivated the decision to undertake this study. Education is an agency embraced in a society such as Nigeria to proffer solutions to problems. For many decades, it has done this to a successful extent as evident in the progress the country has made in certain sectors, but in comparison with developed societies around the world and in consideration of the resources available at the Nigerian society's disposal, there is still a long way to go. The concept of emotional intelligence was critically analysed with its implications on the Nigerian educational system explored employing the philosophical research method. The paper finds that learners are to be groomed to be emotionally intelligent through acculturation and subjects that will teach them all they need to know. The teacher has a key role to play, while the students are also encouraged to seek help in understanding their emotions and managing them. The media is considered an important factor which needs to be censored because it is an essential agent that influences the children/learners.

Keywords: *Emotional intelligence, Education theory, Educational practice, Nigerian education*



Introduction

Since the amalgamation in 1914 and its conferment of an independent-state status in 1960, the Nigerian state has been beleaguered with inability to find long-lasting solutions to inter-tribal and religious crises etched in her socio-cultural compositions. Education has been looked at as a viable agency to ameliorate the situation but the investments made in the institution have not been commensurate with the hopes pinned on it. Poor funding, poor implementation, paucity of quality teachers and a suitable environment for learning among many others have hampered the chances of the agency producing citizens who can help the country achieve its dream of building a true united society. As the battle of assuaging the increasing number of out-of-school children across the country rages on, a subtle yet potent menace is surfacing – a dearth of emotionally mature population among school-going children and the country at large. This is evident in the upsurge in disruptive, criminal activities perpetrated by children of school age.

For a state like Nigeria who aims to actualise a united society, the reality of the amalgamation of ethnic groups with distinct culture, language and esoteric goals calls for the ability of each member of the larger society to be able to manage their emotions in the face of conflicts and disagreements which could threaten the sustenance and survival of the community as a whole. But the contrary is the case presently as there is still inter-tribal conflicts, religious tensions, depression, violence among groups etc. What obtains on the larger stage is recognisable in the events of an average student in the Nigerian secondary school and it is quite troubling that solutions to challenges aforementioned have not been found. This has become gravely worrisome.

Primary school pupils and secondary school learners as young as six years old are already members of secret cult, culprits of examination malpractice, internet fraud and violence. The youths still face challenges such as drug abuse, rape, prostitution, cultism, terrorism, among many others. A considerable number of vices in the society are being perpetrated by these children of school age. In the place of inter-school sports competitions, there are inter-school fights and tensions; the victims of suicide have in recent times included teenagers who could not cope with the rigours of academics and many more. The competence to deal with challenging situations with maturity and satisfaction consequently defusing conflict and inter-relationship tensions -emotional intelligence- has now become expedient if the country is still determined to win its war against disunity, threats of separation by different ethnic groups and many more.

Addressing the issues highlighted in this study have been attempted by such scholars like Martin Buber who posited the redefinition of the teacher-student relationship; the existentialism philosophical approach to education as Jean-Paul Sartre; Paulo Freire's Conscientisation theory was centred on an education concerned



with developing 'humanised' learners who will act to liberate themselves and the society from injustice and lead a social transformation; there is also the Behaviourist school of thought as championed by Ivan Pavlov, John W. Watson and B.F. Skinner which aims to reward learners' positive actions so as to gear them to influence their environment positively. These and many more attempts have been insufficiently effective at best to the practice of education in Nigeria.

This study attempted to provide answers to the questions such as what is emotional intelligence? What is the importance of emotional intelligence to education? and what are the implications of emotional intelligence for educational practice? This study explored the concept of emotional intelligence and investigated how achievable it is in the present system of education in Nigeria. It further speculated on its implications and highlighted recommendations on its proper integration into the school curriculum. The scope of this study will be limited to the basic and secondary school curriculum as it engages in theoretical discussion of emotional intelligence in educational practice at this level.

An Analysis of the Concept of Emotional Intelligence

The concept of 'emotional intelligence' contains two words. Emotion according to Oxford Advanced Learner's Dictionaryⁱ is defined as 'any strong feeling'. It lists such strong feelings as anger, anxiety, fear, hate, hatred, joy, love among many others. Loose definitions of emotion only have 'derived from one's circumstances, mood or relationships with others' to add to the Oxford's adoption. Etymologically, the word 'emotion' was adapted from 'emouvoir'ⁱⁱ, a French word which means to 'stir up'. The word 'emotion' later became an umbrella word for such words as passions, sentiments and affectionsⁱⁱⁱ.

While it defines 'intelligence' as the ability to comprehend; to understand and profit from experience. While intelligence in Merriam Webster Dictionary^{iv} is defined as the ability to apply knowledge to manipulate one's environment or to think abstractly as measured by objective criteria. The word 'intelligence' has its etymology roots in Latin. It comes from the words 'intelligentia' or 'intellectus', which are nouns stemming from the verb 'intelligere'^v which means to comprehend or perceive.

From the foregoing, emotional intelligence would be interpretatively described as 'the ability to comprehend or perceive any strong feeling'. This concept in educational theory and practice is interpreted as 'teaching individuals how to perceive, comprehend and manage their strong feelings'. Failure to manage one's emotions properly will yield unwanted consequences. Certain subjects are designed to give learners these competencies in the emotional intelligence aspects such as Literature-in-English, Physical Health Education, Social Studies, Civic Education, Christian Religious Studies among many others.



The concept of emotion has shared a place in a long-standing debate with rationality. Thinkers, psychologists and educators have explored what nature of relationship exists between one being rational and emotional. While a section of views argue that emotions inhibit proper critical thinking, another section believes emotions are indeed necessary for one to be rational. Plato as quoted by Zhu^{vi} opines that reason should control emotions and that when the latter overrides the former, there is bound to be disorderliness. Similarly, Aristotle suggests that reason should rule the soul – a place where he believes emotions originates from. That one’s emotional tendencies should be managed by one’s ability to reason. One would believe the careful study of Aristotle’s *Nicomachean Ethics* and *Rhetoric* that his position on emotion, which he called ‘*Pathos*’ should be treated as susceptible to rational influence and voluntary action, although he believes they are not directly subject to choice. He believes emotions, along with the appetites, motivate action. And man’s ability to reason can be crucially affected by our emotional dispositions. His position is that truly excellent person will not only reason well about what to do in particular situations, but will feel the appropriate emotions in those situations. The Stoics’, in the works of Cicero and Seneca, idea of emotions was different from Aristotle’s. They were intolerant of emotions as they recommended their elimination and in certain situations accommodation. Aquinas on the hand subscribes to Aristotle’s position by suggesting that emotions which are controlled are good and only those not controlled by reason should be done away with.^{vii} What is established in the foregoing is the admittance for emotions to be kept in check. There is a call for checking, control, management and adjustment of emotions. The debate of which supersedes the other is not readily relevant to the thrust of this study as what has been considered so far indicates that critical thinking helps to refine emotions and emotions can in turn help to evaluate and validate one’s reasoning.

The call for the management, control and checking of the emotions is what many have conceptualised as ‘emotional intelligence’. In Layman’s rendition, it simply means the ability to be intelligent in the handling of emotions. Tracing the roots of this concept to psychology, Thorndike in defining social intelligence – a term which shares strong ties with the subject of this study says ‘it is the ability to understand and manage men and women, boys and girls to act wisely in human relations’.^{viii} Thorndike’s view might have flashed the headlights of our interests on the emotions of people other than ourselves but further opinions balance the scope. Mayer and Salovey^{ix} adds that it is a form of social intelligence that involves the ability to monitor one’s own feelings and emotions as well as those of others; to discriminate among them and to use this information to guide one’s thinking and actions. Mayer and Salovey’s definition is of interest as it draws a line around the debate between emotions and reason. Their position is that emotional intelligence enables one to think and act better. Also, as opposed to Thorndike’s definition which makes the emotions of other people the focus, Mayer and Salovey include in their scope the emotions of both ourselves and other people in our social enclaves. These



positions dictate that emotional intelligence involves one's awareness of one's feelings and those of others and the capacity to utilise it in one's thinking, behaviour and actions.

Mass Media and Emotional Intelligence

In the area of raising emotional intelligent children, the media is one of the biggest challenges Nigeria faces. The print, electronic and especially the social media have become a cesspool of information where children have unsupervised and uncensored access to information with great potential of causing havoc and damage to who they become. Sexual explorations are already prevalent among teenagers due to the inability to control their emotions and this is largely down to what they watch on the television, listen to on the radio, have uncensored access to on the internet and many more. Plato's idea of philosopher king and king philosopher is relevant here. If the philosopher should be the king for the society to function effectively, then the mass media which remains a powerful mechanism in the raising of a child should be given careful and intense censoring. The media educates many a child that if the country is determined to raise an individual that will be emotionally intelligent and ready to be a useful member of a social unit, the right ideas must be harnessed through the media. There is a great connection between what the nation can achieve, who the child becomes and his exposure to the mass media. The good ideas are there to be transmitted into these children but as ever the country has the challenge of transmission.

Importance of Emotional Intelligence Education

Learners have emotional as much as they have cognitive needs. They have a strong desire for communion with other beings. They also yearn for such values as justice, freedom and truth. They want to be shown these and want to know how to express these in appropriate situations. If a child is a social animal, it needs social relationships to function effectively and thrive. In every social setting, in interactions and day-to-day living, every child will need to learn the language of social relationships in every aspect of daily living and eventually the work place. There must be an emotional education for such children to be able to achieve emotional balance and wellbeing. An individual should be able to understand themselves; know what to do with their worries, fears and anxieties, and know how to start, maintain, run and optimise relationships.

An ideal education will pay good attention to the art of living properly. Such an education will have a structure which relentlessly teach children to be good, kind, generous and show compassion. Relationships with others demands work and



wisdom. Students need this information. They want to be happy and fulfilled. In their workplace, when they become adults, they will need how to balance work, love, family and their ambitions. Emotional education is their best bet. They will not learn how to run a relationship by intuition. How happy one is is dependent on the quality of their primary relationships.

We already live in a world where people have connected emotional rewards to the possession of material goods. It is not the material goods they really want but the elusive emotional rewards that come with it. For instance, teenagers would pressure their parents to acquire the latest gadget for them because their peers at school are using it. This is envy, the fear of missing out and the sense to want to belong. This is a never-ending process as there will always be others who have more than them. When some do not have parents to ask this or who can provide it for them, they result to violence. Cultism is most times a proof that a child is emotionally deficient in some respect.

Emotional Intelligence in Education

Contributions of philosophers and educational theorists on emotional intelligence in education are scanty when one scours the libraries and digital platforms. This is understandable as the concept is relatively new in the discourse on education. Nevertheless, this area of the study will deploy the speculative tool of philosophy to theorise what emotional intelligence will look like in education resting on the approach educational thinkers have employed in related ventures. This concept, as already established, is an ethical topic hence, the principles used in this aspect of philosophy will be very useful in exercise. As there is no way one would reflect on his moral, personal and aesthetic conduct without taking their emotional dispositions and experience into consideration.

The Learning Environment

Schools and societies already have what is called ‘emotional culture’ where policies and societal norms frown at actions caused by certain emotional outbursts such as anger, jealousy, envy and dissatisfaction while actions dictated by honesty, courage, resilience, and integrity are positively rewarded. Many schools hold ceremonies at the end of the academic session and reward students as ‘Best Behaved Student’ while in the consideration for class captain and school prefects, there is huge emphasis on the emotional maturity of the candidates vying for the posts. The teachers in school, elders, adults and counsellors play important roles in the emotional life of students as they advise, condemn, praise and guide them in their emotional expressions while the school enforce severe punishments for students who cross the line.



Nigeria states boldly in her national policy on education of her desire to live in unity and harmony as one indivisible, indissoluble, ...nation,^x to promote inter-African solidarity and world peace through understanding.^{xi} Her policy highlights in its set of beliefs that education is vital for the promotion of a united Nigeria,^{xii} and claims that in the country's goals of education is the development of the individual into a morally sound ... citizen;^{xiii} development of ...social abilities and competencies^{xiv} which will allow the individual contribute positively to the society. Still in this vein, it declares its appreciation of promoting the 'emotional development of all children',^{xv} 'moral ... principles in inter-personal and human relations.'^{xvi} All these indicate a country determined to rub shoulders with global educational systems in achieving a standard and quality education. The document further admitted that for the country to achieve these lofty goals, the responsibility has to be placed on its educational system which has to be 'qualitative, comprehensive, functional and relevant to the needs of the society'.^{xvii} The question is how does emotional intelligence operate in educational theory and practice? Dewey's educational philosophy of progressivism best answers this. The philosophy places a high premium on development of social skills, collaborative and cooperative learning projects, education for social responsibility, selection of subject content by looking forward to ask what skills will be needed in future society.

It encourages students to talk about their feelings and for the teachers to encourage and participate in active listening to these expressions. Teachers are also to offer advice, guidance, praise and admonishment to the learners who take this path. This is not just for expressing their feelings but for the qualities of emotional character evident in their behaviour. The programme encourages a 'good' emotional culture in the school in such a way that to some extent, each school must strive to develop its own culture within the context of its community and available resources. What this establishes is that the school and the teacher are expected to take an active stance in helping their learners become emotionally intelligent.

There is no denying that the quality of one's life is greatly influenced by one's emotions, yet there is an admittance that emotions are to be considered private, intimate aspects of an individual's identity hence invading a child's developing individuality and distinctive personality by attempting to mould their emotional lives may be seemed as intrusive and ethically unacceptable.^{xviii} Contrarily, a child's emotional tendencies evolve and mature through time, and it is undeniably true that the emotional climate of the classroom must be taken into account, especially in designing activities and instruction. The design must be done with the intention to energise and inspire students. Students are to be encouraged to explore their feelings especially when learning subjects in the arts and humanities such as literature, musical, and visual arts. Discussions centred on their emotional states in responses to specific events in subjects like history, government, civic education and related ones



can be initiated by the teacher. This is also possible in other departments but the approach and regulation heavily rest on an emotionally intelligent teacher.

The Role of the Teacher

The teachers are to advise the learners, help them understand and manage unhappy and socially awkward emotional states. The learners are to be taught that they can manage and control their emotional life. They are partially responsible and accountable for their emotions. They should be educated that emotions such as rage, aggression, jealousy or impatience are negative while others such as joy, sympathy, perseverance, patience and affection are positive. The outcomes of channelling these emotions in human interactions should be demonstrated to the learners to ensure effective understanding.

In this, the teachers' role becomes more like that of a counsellor, therapist, carer and an educator. He is the 'emotional parent' in the school. Teachers who have gone through education programmes in Nigeria have some degree of training in this area as guidance and counselling is a mandatory and crucial part of education programmes across the tertiary institutions. The teacher is to help articulate the child's emotional feelings. He guides the learner to 'work out' their inner tensions, disarm potentially dangerous emotions, offer counselling, individual support and guidance. During learning activities, he provides opportunities for the students to express themselves. He would be actively interested in helping the learner into social forms of action, public forms of knowledge and understanding, and the social, moral, and emotional climate of the school and of their immediate society. As much as children are to be seen as unique individuals, that their individuality is also a by-product of social constitution, interactions, and experience sharing should not be disputed.^{xix} In order to manage a 'society of learning' in which children improve their communication and expression skills, it is a major obligation of the teacher to encourage this experience-sharing and the development of shared background behaviours.

The Curriculum

Drastic changes to the curriculum in use are not needed as there are already provisions made available within the subjects taught across the basic and secondary schools to educate students on the various types of emotions there are and how to express them. Such subjects are Civic education, Christian Religious Studies, Islamic studies, Literature in English, English Language and Physical Health Education. Nevertheless, attempts can still be made to improve on what already obtains by providing supplementary materials which solely focuses on certain emotions absent in the



present array of subjects. For instance, the discussions on gender, sexual orientations and identity bordering on gays, lesbians and transgenders are taking centre stage. How the modern individual is to participate in such conversations can be paid attention to.

The Role of the Student

The student in this situation is encouraged to see his teachers as his parents, carer and a leader. He is encouraged to share his feelings on whatever he is going through with them. He should seek counsel and direction in ways to handle and manage conflicts among his peers and other agencies both within and outside the learning environment.

Conclusion

The author concludes that to raise an emotionally intelligent student in the 21st century efforts must be made in censoring the media as this is what mainly influence the children of the present times. Schools and the society at large must not be complacent in ensuring the children succumb to the demands of the emotional culture already present. The teacher and parents should make themselves available to listen to children and help them navigate their emotional journey and the student is encouraged to seek assistance from elderly ones in understanding, managing and controlling their emotions.

Recommendations

The paper recommends that teachers as well as parents are to encourage their students/wards to respond and succumb to the demands of their emotions and be attentive to their needs in order for the students/wards to seek needed assistance whenever it is necessary in order to manage their emotions.

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- End Notes -

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CHAPTER 26

FROM CONVENTIONAL TO BOTANICALS: A PARADIGM SHIFT IN PERFORMANCE-ENHANCEMENT DOPING AMONG SPECIAL NEEDS ATHLETES IN LAGOS STATE NIGERIA

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Abstract

Botanical doping refers to the use of natural plant-based supplements or extracts to enhance athletic performance. This idea has gained traction in recent years as more sportsmen switch from synthetic performance-enhancing substances to natural alternatives in an effort to avoid being caught doping. Prior research tended to place a greater emphasis on traditional doping techniques and performance-enhancing drugs than on botanical doping. This study, therefore, investigated the Paradigm Shift in Performance - Enhancement Doping among Special Needs Athletes in Lagos State Nigeria. The study was anchored to the theory of reasoned action, while a descriptive survey design of correlation type was used. A cross-sectional survey was done on 196 (108(55.1%) male and 88 (44.9%) female) special needs athletes. A purposive sampling technique was used to select all elite special needs athletes who had competed at the National sports festival level, Paralympics and other world meets. A simple sample technique was used to select twenty respondents per sport the athletes participated in. Quantitative data were subjected to descriptive statistics of frequency counts and percentages. The instrument scales were the Prevalence of Botanical Performance Enhancing Supplement scale (PreBOPESS) ($r=0.67$), and



Botanical Performance Enhancing Supplements Scale (BPES) scale ($r=0.70$).

The respondents' age was 20-39 years, 108 were males while 88 were females. The highest level of competition attended by the respondents was 73.5% (144), 14.8% (29), and 11.7% (23) at the national sports festival, all African games, and the Paralympic games respectively. The prevalence of doping among athletes was recorded at a significant level of 63.7%. The result also revealed that 76 (38.8%) of the respondents claimed average rates of usage of botanical performance-enhancing substances among special needs athletes in Lagos, Nigeria, while 74 (37.8%) of the respondents take botanical supplements in the form of local herbs (Agbo-ibile) to enhance performance.

This study highlights the need for additional investigation, intervention techniques, and approaches to inform special needs athletes in Lagos State about the possible negative health effects of abusing herbal supplements. The findings can also be applied to the formulation of regulations for the manufacture, sale, and consumption of botanical supplements in Nigeria.

Keywords: *Special needs athletes, Prevalence of botanical supplements, Performance-enhancement substances, Doping*

Introduction

The term paradigm shift refers to a significant transformation in one's perspective, concepts, and methods of doing something. A paradigm shift, which can be positive or negative, can occur in a variety of settings, including culture, traditional norms, human behaviour, scientific research, and business. Paradigms, according to Hayes (2022) are important because they define how we perceive reality and how we behave within it.

In recent times a paradigm shift is been noticed in the doping behaviour of elite athletes around the world. Doping is defined by World Antidoping Agency (WADA), as violating one or more of the ten anti-doping rules established in the World Anti-Doping Code (WADA, 2020). These rules include the use, attempted use, trafficking, or possession of prohibited substance(s) as well as evading or tampering with doping control procedures (Drug-Free Sport New Zealand, 2020; WADA, 2020). Despite its prohibition, doping has occurred in athletes younger than 10 years of age, among able and special needs athletes, and it is an issue at all levels of sport (Nicholls, Cope, *et al.*, 2017) due to its sophistication and complexity. As WADA continually increases the number of prohibited substances and methods in sports, athletes are also coming up with different doping substances and methods leading to a paradigm shift in the usage of performance-enhancing substances in sports. One of these new trending methods in doping is the use of botanical supplements to enhance performance in sports.



Sport has been described as a unique context underpinned by contrasting principles (Franke, 1978). The first of these sporting principles is the “spirit of sport” which the World Anti-Doping Agency (WADA) has described as embodying intrinsic sporting values including fair play, character, and respect (World Anti-Doping Agency, 2017). The spirit of sport implies that athletes and their support personnel participate with integrity, fairness, and respect for themselves and others (Melzer et al., 2010). Through this lens, sport is considered to enhance participants’ health, well-being, and ethical development (Kavussanu, *et al.*, 2002). Competition is the second principle of sport proposed by Franke (1978). This sporting principle is captured by epithets such as faster, higher, and stronger (The International Olympic Committee, 2020).

The principle of competition is acknowledged as a predominant discourse in the contemporary sport which underpins an apparent need to do what is required to win (Johnson, 2012; Mudrak, *et al.*, 2018). Researchers have agreed that this competitive discourse is a driving factor for problematic behaviours in sports which challenge its perceived moral and ethical nature (Boardley and Kavussanu, 2007; Shields and Bredemeier, 2007). Predominant among the problematic behaviours in sports is doping. More commonly, doping is considered the use of the banned substance(s) or method(s) to enhance sporting performance (Yager and O’Dea, 2014; Zucchetti, *et al.*, 2015). It has also been described as an anti-social and maladaptive behaviour that threatens the spirit of sport and opposes the concept of sportspersonship (Barkoukis, *et al.*, 2011; World Anti-Doping Agency (WADA), 2020). Moreover, doping challenges the notion of a “level playing field”.

One of the driving factors for problematic behaviors in sports which challenge its perceived moral and ethical nature as amplified by Boardley and Kavussanu, 2007; Knop, 1996; Shields and Bredemeier, 2007 is doping. Doping has been viewed as an intentional, outcome-oriented behaviour (Petróczi, 2013). From this perspective, doping is considered an example of cheating to gain an unfair advantage over competitors (Barkoukis, *et al.*, 2011; Hodge, *et al.*, 2013; Maravelias *et al.*, 2005). Doping has also been described as an anti-social and maladaptive behaviour that threatens the spirit of sport and opposes the concept of sportspersonship (Barkoukis, *et al.*, 2011; World Anti-Doping Agency, 2015). Moreover, doping challenges the notion of a “level playing field” (Elbe and Brand, 2016).

Despite its prohibition, doping has occurred in athletes younger than 10 years of age, among able and special needs athletes, and it is an issue at all levels of sport (Nicholls, *et al.*, 2017). In fact, anti-doping research in special needs elite sports is limited in general. So far, existing studies have predominantly chosen an athlete-centered focus to examine the issue of doping. The main finding from this evidence is that doping is an existing issue among special needs athletes (e.g. Thevis, *et al.*, 2009; Van de Vliet, 2012). Corroborating the presence of ‘visible’ doping in special needs elite sport, the World Anti-Doping Agency (WADA) detected 159 Anti-Doping



Rule Violations (ADRVs) between 2013 and 2018 (World Anti-Doping Agency, 2015, 2016, 2017, 2018, 2019; 2020a). Early research suggested that this might be caused by the growing profile of the Paralympic sports in recent years (Collier, 2008; Jefferies, *et al.*, 2012; Fagher, *et al.*, 2016). Beyond these early insights, very little is known about the reasons for doping in elite special needs sports.

Doping is a complicated issue that is suggested to occur due to a complex interaction of factors (Elbe and Barkoukis, 2017; Erickson, *et al.*, 2015). Evidence shows that athletes' exposure to these factors has resulted in doping to varying extents, across different competitive levels and sporting codes (Backhouse, *et al.*, 2015). Further, Nilsson and colleagues (2004) identified that factors which influence doping are not universal and instead differ by audience and sporting context. Researchers have therefore placed importance on identifying factors that influence doping in specific populations and environments (Kirby, *et al.*, 2011; Verroken, 2000). One of these new trending factors in doping is the use of botanicals among able and special needs athletes.

An example is the report of the chemical and pharmacokinetic evaluation of a doping case associated with the use of an Ephedra-labelled dietary supplement. In this case, the urine of a Dutch professional cyclist was found to be positive for norpseudoephedrine at doping control. An inquiry revealed that the cyclist had consumed a liquid herbal food supplement with Ephedra as one of its 15 declared ingredients. Chemical analysis revealed concentrations of 6.8-8.2 mg/ml of norpseudoephedrine and 0.02-0.03 mg/ml of ephedrine in several batches, which could have caused the positive doping test. Since the International Olympic Committee (IOC) list of doping substances comprises several substances which occur naturally in botanicals, doping agents like ephedrine and/or caffeine may be taken unwittingly in the form of herbal food supplements. In this case, the predominance of norpseudoephedrine over ephedrine was explained by spiking with norpseudoephedrine, showing that adulteration of herbal food supplements with undeclared agents also has to be taken into account. The report demonstrates a need for improved quality control of herbal food supplements (Ros, Pelders, De Smet, 1999).

Another study by Kuei Hui Chan¹, Ryh-Nan Pan, Mei-Chich Hsu, Ku-Fu Hsu (2008) warned that athletes should be careful when taking more than a single dose of Kakkon-to. Kakkon-to is one of the most common Traditional Chinese Medicine preparations for the attenuation of colds. Ephedrae Herba is one of the prescriptions of Kakkon-to and the major ingredients of Ephedrae Herba, ephedrine, are banned substances on the World Anti-Doping Agency (WADA) list. Their study investigated the elimination of urinary ephedrine after administering Kakkon-to and to determine the possibility of urinary positive ephedrine test results. Six healthy volunteers took one single dose of 2.5g Kakkon-to extract granules. The concentrations of urinary ephedrine were analyzed by high-performance liquid chromatography. The result



showed that ephedrine and norpseudoephedrine were excreted in the urine after taking one single dose of Kakkon-to. However, the highest amount of ephedrines in urine was ephedrine and the peak concentration was 4.35 ± 1.82 microg/mL (mean \pm standard deviation), which was lower than the WADA permitted value (10 microg/mL). The estimated elimination half-lives of ephedrine, norephedrine, pseudoephedrine, and norpseudoephedrine following administration of this preparation were: 5.2 ± 1.2 , 4.2 ± 1.3 , 4.2 ± 0.9 , and 6.5 ± 2.8 h, respectively. The study concluded that the urine would not violate the rule of doping after administering a single dose of Kakkon-to. Nevertheless, a further study on administering the preparation for 3 times per day for 3 days showed a positive ephedrine result.

A botanical is a plant or plant part valued for its medicinal or therapeutic properties, flavour, and/or scent. Herbs are a subset of botanicals. Products made from botanicals that are used to maintain or improve health are sometimes called herbal products, botanical products, or phytomedicines. In naming botanicals, botanists use a Latin name made up of the plant's genus and a term called the specific epithet. Together, this phrase represents the plant's species name. For example, the botanical black cohosh is known as *Actaea racemosa* L., where "L" stands for Linnaeus, who first described this plant.

Botanicals are sold in many forms as both fresh and dried plant materials either in the supermarket or open market (e.g. Leku Leja herbal markets in Yoruba parts of Nigeria). For example, a supermarket's produce aisle carries fresh ginger root, while dried ginger root may be found in the dietary supplement aisle in capsule or tablet form, in tea bags, or as a liquid preparation. A group of chemicals or a single chemical may also be isolated from a botanical and sold as a dietary supplement, usually in tablet or capsule form. For example, phytoestrogens from soy products are sold as dietary supplements (National Institutes of Health (NIH), Office of Dietary Supplements, 2020).

Some people, including athletes (abled or special needs), believe that products labelled "natural" are safe and good for them. This belief is not necessarily correct because the safety of a botanical depends on many things, such as its chemical make-up, how it works in the body, how it is prepared, and the amount used. The actions of botanicals range from mild to powerful. A botanical with mild action might have subtle effects. Chamomile and peppermint, for example, are usually consumed in teas to help with digestion and are generally considered safe for most people (NIH, 2020).

Some botanicals with mild action might need to be taken for weeks or months before their full effects are achieved. For example, valerian might help users sleep better after a few weeks of use, but just one dose is rarely effective. In contrast, a powerful botanical produces a fast result. Green tea (a natural source of caffeine) and Yohimbe, for example, can have strong and immediate stimulant effects. The dose and form of a botanical preparation also play important roles in its safety. Teas, tinctures,



and extracts have different strengths from one another. For example, the same amount of a botanical may be contained in a cup of tea, a few teaspoons of a tincture, or an even smaller amount of an extract. Also, different preparations have different amounts and concentrations of constituents extracted from whole botanicals. For example, peppermint tea is generally considered safe to drink, but peppermint oil is much more concentrated and can be toxic if used incorrectly.

To follow the ‘manufacturer’s’ suggested directions for using a botanical and not exceeding the recommended dose is most difficult owing to the fact that botanical usage is majorly unstandardized and unregulated in most countries of the world. This fact is majorly contributing to the prevalence of botanical supplement usage worldwide. This dangerous trend is now noticeable among athletes as evident in the examples given earlier. Unless conscious efforts are made to regulate and standardize botanical usage, particularly among athletes, many athletes in the years to come may be caught doping indirectly and unconsciously from botanical dietary supplement usage.

Standardization is a process that manufacturers may use for extracts to ensure that all of their batches are similar. The standardization process involves identifying and measuring specific chemicals (also known as markers) and adjusting them to assure consistent amounts in each batch. Ideally, the chemical markers chosen for standardization would also be the constituents that are responsible for a botanical’s effect on the body. If such chemical markers were used, each batch of the product would have the same health effects. However, the constituents responsible for the effects of most botanicals are not known. For example, the sennosides in the botanical senna are responsible for their laxative effect, but many constituents may be responsible for valerian’s relaxing effect (NIH, 2020). Nigeria law does not require dietary supplements to be “standardized.” In fact, there is no legal or regulatory definition of the term in Nigeria.

Despite increased international research in this field, there remains a dearth of evidence on factors that influence botanical doping in Nigeria. This research, therefore, is specifically designed to provide baseline knowledge about the prevalence attitude, and vulnerability to botanical doping among special needs athletes in Lagos State, Nigeria. Having this knowledge will go a long way in helping Sports administrators and other professionals in the field of sports to curb botanical doping before it is escalated in the country.

Special needs athlete is one who has impaired mental or physical functions that limit his or her participation in daily life activities. People with disabilities are classified according to the type of disability they have, namely, hearing and auditory disabilities, visual disabilities, mental disabilities, physical disabilities, and various types of chronic diseases (Jones and Howe, 2015). Sports opportunities for athletes with disabilities range from recreational to highly competitive to elite Paralympic sports. In Nigeria, the profile of special needs sports is also growing, and in recent



times special needs athletes have more medals for the country, more than their able counterparts. However, as the profile of the special needs sports is growing so also are doping issues. In a recent baseline interview carried out among para-athletes in Lagos State, Nigeria, by the researchers, it was discovered that some of these special needs athletes do engage in taking indigenous herbs to improve performance with the mindset that they are natural substances and are safe for consumption. It was this discovery that spur the researcher's curiosity to investigate Paradigm Shift in Performance-Enhancement Doping, from conventional to botanicals, among Special Needs Athletes in Lagos State Nigeria.

Lagos State (Ìpínlẹ̀ Èkó in Yoruba parlance), the location for this study, is a state in southwestern Nigeria. Of the 36 states, it is both the most populous and smallest in area. Bounded to the south by the Bight of Benin and to the west by the international border with the Benin Republic, Lagos State borders Ogun State to the east and north making it the only Nigerian state to border only one other state. The state was formed from the Western Region and the former Federal Capital Territory on 27 May 1967 (Wikipedia, 2022). The State's love for sports sponsorship and development can only be equal by a few states in Nigeria. The state government created Lagos State Sports Commission (LSSC) from the defunct Office of Sports in the Ministry of Youth, Sports and Social Development (MYSSD) and Lagos State Sports Council via an Executive Order EO/AA01 dated 17 June 2015 by His Excellency Mr. Akinwunmi Ambode, Governor of Lagos State. While the Law to provide for the Commission was signed into law by the Governor on the 1st of February 2017 (Lagos State Sports Commission (LSSC), 2021). Lagos State is one of the states with the highest numbers of elite special needs athletes in Nigeria, hence the reason for its suitability for this type of study.

Results

A total of 196 respondents participated in this study, out of which 108 (51.1%) of the respondents were male while 88 (44.9%) of the respondents were female showing that the majority of the respondents were male. The analysis of the demographic result further revealed that 40 (20.4%) of the respondents were below the age of 20 years, 110 (56.1%) of the respondents were between the ages of 20 and 29 years while 46 (23.5%) were between the ages of 30 and 39 years. This shows that the majority of the respondents were between the ages of 20 and 29 years. The result also shows that 132 (67.3%) of the respondents have been tested for doping while 64 (32.7%) of the respondents have never tested for doping. Also, 24 (12.2%) of the respondents have been, at one time or the other, caught for doping while 172 (87.8%) of the respondents have never been caught for doping. The result revealed further that 144 (73.5%) of the respondents have attended the National Sports Festival as their highest competition, 29 (14.8%) of the respondents have attended All African games as their



highest competition while 23 (11.7%) of the respondents have attended Paralympic games as the highest competition. This shows that the majority of the respondents have at least attended the National sports festival as their highest competition so far.

Research question 1: Is the use of performance-enhancing botanical supplements prevalent among elite special needs athletes in Lagos State, Nigeria?

Table 1: Table showing the prevalence of performance-enhancing botanical supplements among elite special needs athletes in Lagos State, Nigeria

S/N		YES	NO
1.	Have you ever used botanical PES either ignorantly or deliberately?	150 (76.5%)	46 (23.5%)
2.	Do you know any of your co-athlete using botanical performance-enhancing substances?	123 (62.8%)	73 (37.2%)
3.	Do you agree that the usage of botanical performance-enhancing substances is prevalent among special needs athletes?	132 (67.3%)	64 (32.7%)
4.	Do many special needs athletes take the botanical supplements	119 (60.7%)	77 (39.3%)

Results from Table 1 above shows the prevalence of performance-enhancing botanical supplement among elite special needs athletes in Lagos State, Nigeria. It was revealed that 150 (76.5%) of the respondents agreed that they have used botanical PES either ignorantly or deliberately while 46 (23.5%) of the respondents disagreed. Also from the table, 123 (62.8%) of the respondents agreed that they know some of the co-athlete using botanical performance-enhancing substances while 73 (37.2%) of the respondents disagree. The result also revealed that 132 (67.3%) of the respondents agreed that usage of botanical performance-enhancing substances is prevalent among special needs athletes while 64 (32.7%) disagreed. It was also shown in the table that, 119 (60.7%) of the respondents agreed that many special needs athletes take botanicals while 77 (39.3%) of the respondents disagreed knowing any special needs athletes take botanicals. From this finding, it could be concluded that the usage of botanical performance-enhancing supplements is prevalent among elite special needs athletes.

Research question 2: What is the rate of usage of botanical performance-enhancing substances among special needs athletes in Lagos State, Nigeria?

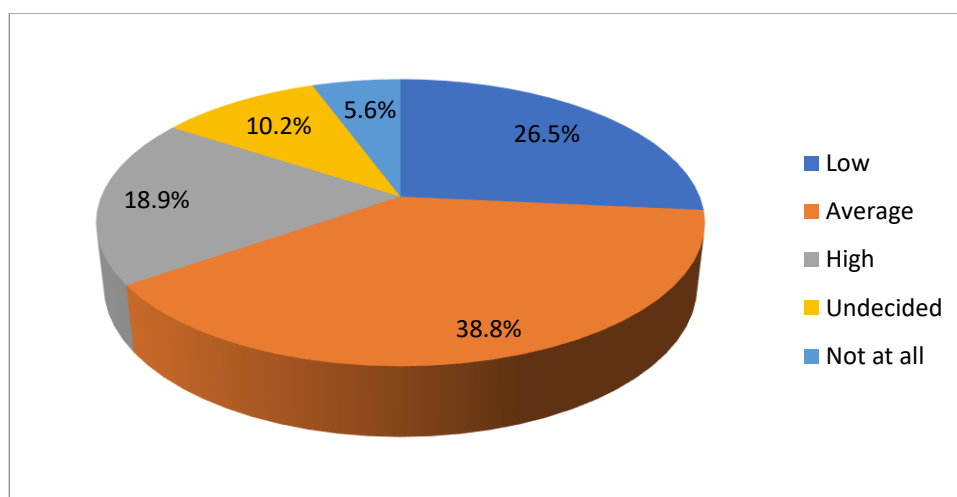


Fig. 1: Pie chart showing the rates of usage of botanical performance-enhancing substances among special needs athletes in Lagos State, Nigeria

The chart above revealed that 52 (26.5%) of the respondents claimed low rates of usage of botanical performance-enhancing substances among special needs athletes in Lagos State, Nigeria, 76 (38.8%) of the respondents claimed average rates of usage of botanical performance-enhancing substances among special needs athletes in Lagos, Nigeria, 37 (18.9%) of the respondents agreed to high rates of usage of botanical performance-enhancing substances among special needs in Lagos, Nigeria, 20 (10.2%) of the respondents were undecided while 11 (5.6%) of the respondents claimed not to have taken botanical performance-enhancing substances among special needs in Lagos, Nigeria.

Research question 3: What are the commonly prevalent performance-enhancing substances among elite special needs athletes in Lagos State, Nigeria

Table 2: Table showing common PES among elite special needs athletes in Lagos State, Nigeria

PES	Frequency	Percent
Alabukun	43	21.9
Coke drink mixture	54	27.6
Agbo-ibile	74	37.8
Energy drink	11	5.6
Alabukun and coke	14	7.1
Total	196	100.0



Table 2 above shows common PES among elite special needs athletes in Lagos state, Nigeria. The results revealed that 3 (21.9%) of the respondents commonly use alabukun to enhance performance, 54 (27.6%) of the respondents use a coke drink mixture, 74 (37.8%) of the respondents use Agbo-ibile as a botanical supplement, 11 (5.6%) of the respondents use energy drink while 14 (7.1%) of the respondents use Alabukun dissolved in Coca-Cola. The result shows that the majority of the respondents take botanical supplements in the form of local herbs (Agbo-ibile) to enhance performance.

Discussion of Findings

The results of this study in Table 1 depict that there is a prevalent use of performance-enhancing botanical supplements among elite special needs athletes in Lagos State, Nigeria. The indication of this result is that athletes are gradually moving away from conventional methods of doping to botanicals. Although the usage of botanicals to improve performance has been recorded in ancient times, it is, however, not common in this century. In recorded history, competitive athletes have used various mixtures of animal and plant-origin substances, taken from known and unknown products, in attempts to improve their athletic performance and gain the perceived benefits of victory (Botre and Pavan, 2008). For example, athletes' usage of botanicals such as wines mixed with botanicals, mushrooms, and opioids; stimulants (i.e., strychnine) during the Greek and Roman Games were popular at the beginning of the twentieth century (De Rose, 2008). Galen, the famous Greek who became the physician to the gladiators of ancient Rome, observed the belief of athletes of his time (180 AD) that consuming mushrooms and herbal teas were beneficial to their overall performance (De Rose, 2008).

In recent times although Elite athletes have routinely been subjected to tests to detect usage of prohibited substances or methods, these tests most times fail to detect many cutting-edge doping techniques, and thus the true prevalence of doping remains unknown as reported by de Hon et al., (2015). The World Anti-Doping Agency routinely tests the blood and urine of hundreds of thousands of athletes every year and finds that 1-2 percent tend to test positive. Recent decades have seen increasingly sophisticated biological testing programs to deter doping among athletes, especially at elite international competitions (de Hon, *et al.*, 2015). Among Olympic-level athletes tested between 1987 and 2013, the percentage of positive test results has ranged from 0.96% to 2.45% (de Hon, *et al.*, 2015). However, with sophisticated modern doping schemes (Butch et al., 2011; Thomas, *et al.*, 2011), many athletes may still beat the tests. Given the numerous recent highly publicized doping scandals in major sports (Sparling, 2013; Callaway, 2011; Pielke 2011), one might guess that the proportion of such undetected cheats is high.



The results on types of PES prevalent among Elite Special Needs Athletes in Lagos State, Nigeria shows that the majority of the respondents take botanical supplements in the form of local herbs (Agbo-ibile) to enhance performance. This Agbo-ibile which is one of the time-honored remedies used by indigenous Africans, particularly Yorubas, could be referred to as a crude prototype of orthodox drugs. But since they are unstandardized unchecked abuse of it may cause serious health problems to the athletes generally. Evidence from extant literature shows that many athletes these days are getting hooked on botanical doping with the mindset that they are safe, and natural, and could make them evade doping detection, though some engaged in it unknowingly.

Athletes' use of herbal supplements has increased tremendously over the past decade (Sellami, *et al.*, 2018). Plants have been shown to provide several essential metabolites such as carbohydrates, lipids, and nucleic acids, and a number of secondary metabolites such as terpenoids, alkaloids, and phenolic compounds (Ksouri, *et al.*, 2007). These later are widely sought for their biological properties: anti-allergic, anti-atherogenic, anti-inflammatory, hepato-protective, antimicrobial, antiviral, antibacterial, anticarcinogenic, antithrombotic, cardioprotective, and vasodilatory (Ksouri, *et al.*, 2007). These biological properties are mediated by their antioxidant characteristics and redox properties. In fact, they play an important role in oxidative damage stabilization by free radical neutralization, oxygen scavenging, or decomposition of peroxides (Sumbul *et al.*, 2011). In this context, several studies highlighted the role of herbal supplements in reducing exercise-induced oxidative stress in athletes (Sumbul, *et al.*, 2011; Antonio, *et al.*, 2000). For some of them, reducing oxidative stress will enhance muscle recovery and energy maintenance during intensive exercises (Chen, *et al.*, 2012; Williams, 2006; Bucci, 2000). Authors suggested also that some products such as Ginseng, caffeine, and ephedrine are rich in antioxidant components and therefore are the best candidate to enhance muscle performance. Other plants such as Tribulus Terrestris, Ginkgo biloba, Rhodiolarosea, and Cordyceps Sinensis have demonstrated benefits on muscle growth and strength in active men (Chen, *et al.*, 2012; Williams, 2006; Bucci, 2000), while others have demonstrated no effect on muscle performances (Ping, *et al.*, 2011; Muhamad, *et al.*, 2010; Kiew, *et al.*, 2003; Engels and Wirth, 1997).

In sports, most supplements from herbs or plants were used to enhance muscle growth and fat burning (Williams, 2006). Different commercial products such as "SportPharm" which contains numerous herbals, counting Thermadrene, MaHuang, Guarana, Caffeine, Purple Willow Bark, Cayenne, pepper, and Ginger root, are believed to increase mental vigilance, stimulate fat-burning metabolism, and improve muscle performance (Williams, 2006). Herbal supplements are currently used by athletes and non-athletes alike to improve endurance and strength performance, however, a number of them have not proven safe and effective under current FDA standards (Williams, 2006).



Conclusion

There is indeed a growing incidence in the prevalence of botanical PES usage among Elite Special Needs Athletes in Nigeria. From the results of the study, botanicals in the form of local herbs (Agbo-ibile) is now the most prevalent substance used, followed by coca-cola drink mixture with Alabukun, they also took energy drinks to enhance their performance. The athletes' attitudes towards these supplements were generally positive as the resulting chart showed 52 (26.5%) of the respondents showed low rates of usage, 76 (38.8%) showed average rates of usage, and 37 (18.9%) showed high rates of usage. This result reflects that elite special needs athletes in Lagos state were vulnerable to the use of botanical supplements with the desire to enhance performance and improve health being the main reasons for use and lack of knowledge regarding their potential risks.

Recommendations

Based on the findings of this research. It is therefore recommended that:

1. That the State government through the state's commission for sports in conjunction with the Paralympics committee and other special needs sports federations/associations should as a matter of urgent public health concern organize a special anti-doping seminar for all special needs athletes in the state on this growing trend in other to acquaint the special needs athletes and their support personnel about the risk and dangers involved in taken unverified and unstandardized botanicals for performance-enhancement.
2. The Nigeria Antidoping Commission (NADC) should beam its searchlight on botanical usage among special needs athletes before it becomes a national embarrassment to the nation.
3. Stakeholders should pull resources together to stem the growing rate of botanical performance enhancement usage among special needs athletes and they should encourage further research on botanical performance supplements in Nigeria to discover the chemical compositions of these supplements, how safe they are, and the risk involved in its usage.

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CHAPTER 27

PRINCIPAL MANAGERIAL CAPACITY, ENVIRONMENTAL FACTORS AND EFFECTIVENESS OF SECONDARY EDUCATION IN OYO STATE, NIGERIA

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Abstract

The field of education plays a crucial role in the socio-economic development of any nation. Secondary education, being a critical stage that prepares students for higher education or entry into the workforce, holds significant importance. However, in Oyo state, Nigeria, there are significant challenges that hinder the effectiveness of secondary education. Inadequate infrastructure, limited resources, low student achievement, and ineffective school management contribute to the suboptimal quality of education in the region.

This study aims to investigate the influence of principal managerial capacity and environmental factors on the effectiveness of secondary education in Oyo state. The sample population consists of 1,296 teachers and 59 principals, selected through a multistage sampling procedure. The study examines the relationship between principal managerial capacity, environmental factors, and secondary school effectiveness.

The analysis reveals a significant positive correlation between principal managerial capacity and the effectiveness of secondary education, suggesting the importance of strong leadership and effective management practices. Environmental factors such as funding for resources, teacher-student ratio, parental involvement, and school infrastructure also significantly impact secondary school effectiveness.

Based on the findings, the study proposes several recommendations for practice. These include providing comprehensive capacity building programs for principals, investing in school infrastructure, developing clear and effective policies, and fostering strong school-community relations.



Keywords: Secondary education, Principal managerial capacity, Environmental factors, School effectiveness, Oyo state

Background of the Study

The field of education plays a crucial role in the socio-economic development of any nation (UNESCO, 2015). Secondary education, being a critical stage that prepares students for higher education or entry into the workforce, holds significant importance. However, in Oyo state, Nigeria, there are significant challenges that hinder the effectiveness of secondary education. One of the prominent issues in Oyo state is inadequate infrastructure within secondary schools. Many schools lack proper classrooms, libraries, laboratories, and other essential facilities necessary for effective teaching and learning (Infrastructure development in Oyo State, 2023). This not only hampers the quality of education but also creates an unfavorable learning environment for students, impacting their motivation and engagement. Limited resources pose another challenge in Oyo state's secondary education system. Insufficient funding for educational materials, technology, and resources limits the availability of essential learning tools for students (Oyebisi and Oyebisi, 2019). This affects the quality of instruction and restricts teachers' ability to provide engaging and interactive learning experiences.

Low student achievement is a pressing concern in Oyo state's secondary education. Inadequate teaching and learning strategies, coupled with a lack of instructional supervision, contribute to suboptimal academic performance (Onyali, *et al.*, 2017). This situation hinders students' educational progress, reduces their opportunities for higher education, and affects their future career prospects. Ineffective school management and governance further exacerbate the challenges faced by secondary education in Oyo state. Poor leadership, insufficient training of principals, and a lack of managerial capacity impede the effective functioning of schools (Wu and Shen, 2021). Without strong leadership and effective management practices, schools struggle to implement quality education initiatives, address issues promptly, and create a conducive learning environment.

These challenges collectively hinder the effectiveness of secondary education in Oyo state, negatively impacting students' educational outcomes and limiting their potential for personal and professional growth. Therefore, it is crucial to examine the factors contributing to these problems, such as inadequate infrastructure, limited resources, low student achievement, and ineffective school management, in order to develop targeted interventions and strategies that can enhance the quality and effectiveness of secondary education in Oyo state.



Objectives of the Study

The primary objective of this study is to investigate the influence of principal managerial capacity and environmental factors on the effectiveness of secondary education in Oyo state, Nigeria. To achieve this overarching objective, the study will pursue the following specific objectives which are to:

1. examine the relationship between principal managerial capacity and the effectiveness of secondary education.
2. explore the relationship between environmental factors and the effectiveness of secondary education.
3. determine the contribution of principal managerial capacity to secondary school effectiveness.
4. assess the contribution of environmental factors to secondary school effectiveness.

Literature Review

Principal Managerial Capacity

Principal managerial capacity refers to the set of skills, knowledge, and competencies possessed by school principals that enable them to effectively manage and lead their schools. It encompasses various components, including conflict resolution skills, instructional supervision skills, and motivational skills (Wu and Shen, 2021). Conflict resolution skills involve identifying and addressing conflicts within the school community, which contributes to maintaining a harmonious and conducive learning environment. Instructional supervision skills enable principals to observe, evaluate, and provide feedback to teachers, ensuring that teaching practices align with educational objectives (McGhee and Stark, 2021). Motivational skills allow principals to inspire and motivate teachers, students, and other stakeholders, creating a positive work and learning environment (Wu and Shen, 2021).

Importance in Secondary Education: Principal managerial capacity plays a crucial role in shaping the effectiveness of secondary education. Effective conflict resolution skills help principals maintain positive relationships among stakeholders and a supportive learning environment (Boser et al., 2019). Instructional supervision skills ensure the quality of teaching and learning, leading to improved student outcomes (Khalid, *et al.*, 2019). Motivational skills contribute to a positive school climate and higher levels of teacher and student engagement, which are vital for achieving desired educational outcomes (Bozkurt, *et al.*, 2021). By possessing and utilizing these capacities, principals can create a supportive and effective educational



environment in secondary schools, ultimately enhancing the overall effectiveness of secondary education (Wu and Shen, 2021).

Environmental Factors

Environmental factors encompass several key elements that can impact the effectiveness of secondary education. Specifically, funding for resources, teacher-student ratio, parental involvement, and school infrastructure are important components to consider.

1. **Funding for Resources:** Adequate funding for educational resources is crucial for supporting effective secondary education. Research has shown that increased financial resources allocated to schools positively influence student outcomes (Jackson et al., 2016). Adequate funding enables schools to provide essential learning materials, technology, and facilities necessary for quality education.
2. **Teacher-Student Ratio:** The ratio of teachers to students in a classroom can significantly impact the learning experience and academic outcomes. Smaller class sizes allow for more individualized attention, increased student engagement, and improved academic achievement (Blatchford, *et al.*, 2016). Lower teacher-student ratios facilitate effective instruction, better classroom management, and personalized support for students.
3. **Parental Involvement:** The involvement of parents in their children's education plays a vital role in the effectiveness of secondary education. Research suggests that when parents actively engage in their child's schooling, including attending parent-teacher conferences, supporting homework completion, and participating in school activities, it positively affects student achievement and motivation (Jeynes, 2016). Parental involvement fosters a collaborative and supportive environment that enhances students' educational experiences.
4. **School Infrastructure:** The quality of school infrastructure, including facilities, classrooms, libraries, laboratories, and technology, significantly influences the learning environment and overall effectiveness of secondary education. Adequate and well-maintained infrastructure promotes student engagement, facilitates effective teaching, and creates a safe and conducive learning environment (UNESCO, 2017).

Effectiveness of Secondary Education in Oyo state

The effectiveness of secondary education in Oyo state can be assessed through various indicators and measurements. Some key aspects to consider when evaluating the effectiveness of secondary education in Oyo state include:



1. **Academic Performance:** The academic performance of students in standardized tests, examinations, and assessments provides insights into the effectiveness of secondary education. Analyzing indicators such as student achievement, graduation rates, and progression to higher education can help assess the quality of education provided (Pietromonaco, 2021).
2. **Dropout and Retention Rates:** Dropout and retention rates are important indicators of the effectiveness of secondary education. Low dropout rates and high retention rates suggest that students are engaged, supported, and motivated to continue their education until completion. Monitoring these rates can help identify areas where interventions may be needed to improve educational outcomes (Singh and Alhulail, 2022).
3. **Skills Development:** The development of critical thinking, problem-solving, communication, and other relevant skills is crucial in evaluating the effectiveness of secondary education (Carlgren, 2013). Assessing students' acquisition of these skills through curriculum evaluation, student portfolios, and performance-based assessments provides insights into the quality of education in Oyo state.
4. **Stakeholder Satisfaction:** Gathering feedback from various stakeholders, including students, parents, teachers, and community members, is essential to gauge their satisfaction with the secondary education system in Oyo state. Surveys, focus groups, and consultations can provide valuable insights into areas of strengths and areas for improvement.

Research Methodology

Research Design

This study employed a descriptive survey design to examine the influence of principal managerial capacity, environmental factors, and the effectiveness of secondary education in Oyo state, Nigeria. The descriptive survey design allowed for the collection of data that described and analyzed the variables of interest in their natural setting. This design facilitated the exploration of relationships and patterns between the variables and provided a comprehensive understanding of the research problem.



Sample Population and Sampling Technique

Table 1: Population of public secondary schools in Oyo State

S/N	Educational Zones in Oyo State	Number of Public Secondary Schools	Number of principals in the Zone	Number of Private Secondary Schools	Number of principals in the Zone	Number of Public School Teachers in the Zone	Number of Private Schools Teachers in the Zone
1	Oyo Zone	89	89	189	189	2077	865
2	Ibadan Zone 1	165	165	195	195	5208	1076
3	Ibadan Zone II (Moniya)	151	151	154	154	3308	986
4	Eruwa Zone	51	51	123	123	1,739	234
5	Ogbomoso Zone	84	84	178	178	1803	654
6	Saki Zone	87	87	156	156	1363	467
7	TOTAL	627	627	995	995	15,498	4,282

Source: Oyo State Teaching Service Commission (TESCOM), 2020

Table 1 shows the breakdown of the population of the study. The state is structured into 6 educational administrative zones. The number of schools under the administration of each zone is shown on the table above

The sample size of the respondents for the study was 1,355 (1,296 teachers and 59 principals).

The multistage procedure was adopted for this study to generate the sample size.

In the first stage, 50% of the total number of zones was randomly sampled and they are Oyo zone, Ibadan Zone 1 and Saki zone. In the second stage, it involves sampling of schools. Proportionate to size sampling technique was adopted to sample 10% of public schools and 10% of private schools in each of the zones selected making the total number of 70 public schools and 240 private schools was sampled all together. This gives a total of 310 schools

At the third stage, proportionate to size sampling technique was adopted to sample 10% of the teachers from the schools selected making a total number of 865 teachers in public schools and 242 teachers in private schools all together.

At the last stage, total enumeration sampling technique was used to sample all the principals in the selected schools making 310 principals.



The total respondents will be 1417 altogether as shown in table 2

Table 2: Sample for the Study

	Zones	10% of total public schools	10% of total private school	10% of total number teachers in public schools	10% of total number teachers in private schools	Number of principals
1	Oyo Zone	10	89	208	87	99
2	Ibadan Zone 1	51	95	521	108	146
3	Saki Zone	9	56	136	47	65
Total	3 Zones	70	240	865	242	310

Data Collection Instruments

A structured questionnaire was developed as the primary data collection instrument for this study. The questionnaire was designed to gather data on principal managerial capacity, environmental factors, and the effectiveness of secondary education.

Data Analysis Techniques

The data collected from the questionnaires were analyzed using both descriptive and inferential statistical techniques. Descriptive statistics, such as simple percentages, means, and standard deviations, were used to summarize and describe the characteristics of the variables under investigation.

Results and Discussion

Answering the Research Questions

Research Question 1: What is the relationship between Principal Managerial Capacity and Effectiveness of Secondary Education?

To test the first Research Question, a Pearson Product-Moment Correlation (PPMC) analysis was conducted to examine the relationship between Principal Managerial Capacity and the Effectiveness of Secondary Education. The results are presented in Table 3 below.

**Table 3:** Pearson Product-Moment Correlation Analysis

Predictor Variable	Coefficient (β)	Standard Error (SE)	t-value	p-value	95% Confidence Interval
Principal Managerial Capacity	0.383	0.056	6.857	<0.001	[0.273, 0.493]

The table shows the results of the Pearson Product-Moment Correlation analysis, examining the relationship between Principal Managerial Capacity and the Effectiveness of Secondary Education in Oyo state. The analysis revealed a significant positive correlation between Principal Managerial Capacity and the Effectiveness of Secondary Education ($r = 0.383$, $p < 0.001$). This indicates a moderate positive relationship between these variables. The 95% confidence interval for the coefficient ranges from 0.273 to 0.493, suggesting that we can be 95% confident that the true population parameter lies within this range. These findings provide evidence supporting the hypothesis that there is a positive relationship between Principal Managerial Capacity and the Effectiveness of Secondary Education in Oyo state.

Research Question 2: What is the relationship between Environmental Factors and Effectiveness of Secondary Education?

Predictor Variable	Coefficient (β)	Standard Error (SE)	t-value	p-value	95% Confidence Interval
Funding for Resources	0.526	0.042	12.523	<0.001	[0.444, 0.608]
Teacher-Student Ratio	-0.328	0.078	-4.218	<0.001	[-0.482, -0.174]
Parental Involvement	0.221	0.064	3.456	0.002	[0.095, 0.347]
School Infrastructure	0.189	0.036	5.278	<0.001	[0.119, 0.259]

Based on the findings presented in the table, it is evident that environmental factors significantly influence the effectiveness of secondary education. The predictor variable "Funding for Resources" demonstrates a positive relationship, with a coefficient of 0.526 ($p < 0.001$), indicating that increased funding for resources is



associated with higher effectiveness in secondary education. Conversely, the predictor variable "Teacher-Student Ratio" shows a negative relationship, with a coefficient of -0.328 ($p < 0.001$), indicating that a lower teacher-student ratio contributes to better effectiveness. Additionally, "Parental Involvement" exhibits a positive relationship, with a coefficient of 0.221 ($p = 0.002$), suggesting that increased parental involvement leads to enhanced secondary education outcomes. Finally, "School Infrastructure" also demonstrates a positive relationship, with a coefficient of 0.189 ($p < 0.001$), suggesting that better school infrastructure contributes to improved effectiveness. These findings highlight the importance of environmental factors in shaping the quality and outcomes of secondary education.

Testing the Hypotheses

Hypothesis 1: There is no joint contribution of Principal Managerial Capacity factors to Secondary School Effectiveness

Table 4: Regression Analysis - Principal Managerial Capacity and Secondary School Effectiveness

Predictor Variable	β (Beta)	SE (Standard Error)	t-value	p-value
Conflict Resolution Skills	0.234	0.051	4.588	<0.05
Instructional Supervision Skills	0.198	0.042	4.714	<0.05
Principal Motivation Skills	0.065	0.032	2.031	>0.05

Note: β represents the standardized regression coefficient, SE represents the standard error, t-value represents the test statistic for the predictor variable, and the p-value indicates the level of statistical significance. The results of the regression analysis indicated that conflict resolution skills ($\beta = 0.234$, $p < 0.05$) and instructional supervision skills ($\beta = 0.198$, $p < 0.05$) made significant relative contributions to secondary school effectiveness. This means that as conflict resolution skills and instructional supervision skills of principals increase, there is a corresponding improvement in secondary school effectiveness.

However, the analysis revealed that principal motivation skills did not make a significant contribution to secondary school effectiveness ($\beta = 0.065$, $p > 0.05$). This suggests that there was no statistically significant relationship between principal motivation skills and the effectiveness of secondary schools in the context of the study. These findings highlight the importance of conflict resolution skills and instructional



supervision skills in enhancing secondary school effectiveness, while indicating that principal motivation skills may not have a significant impact on school effectiveness in the studied sample.

Hypothesis 2: Joint Contribution of Environmental Factors to Secondary School Effectiveness

Table 4: Regression Analysis - Environmental Factors and Secondary School Effectiveness

Predictor Variable	β (Beta)	SE (Standard Error)	t-value	p-value
School Community Relations	0.217	0.048	4.521	<0.05
School Plant Adequacy	0.312	0.062	5.032	<0.05
School Policies	0.176	0.041	4.293	<0.05

Note: β represents the standardized regression coefficient, SE represents the standard error, t-value represents the test statistic for the predictor variable, and the p-value indicates the level of statistical significance. The results of the regression analysis revealed that all measures of environmental factors significantly contributed to secondary school effectiveness. School community relations ($\beta = 0.217$, $p < 0.05$), school plant adequacy ($\beta = 0.312$, $p < 0.05$), and school policies ($\beta = 0.176$, $p < 0.05$) showed statistically significant positive relationships with secondary school effectiveness.

This means that as school community relations improve, there is a corresponding increase in secondary school effectiveness. Similarly, when there is adequate school infrastructure and facilities (school plant adequacy), and well-defined and effective school policies, secondary school effectiveness is enhanced.

The p-values less than 0.05 for all predictor variables indicate that the relationships observed between the environmental factors and secondary school effectiveness are statistically significant. These findings emphasize the importance of a positive school community, adequate facilities, and effective policies in promoting the overall effectiveness of secondary schools.

Discussion of Findings

The results of the study support the hypothesis that principal managerial capacity and environmental factors significantly influence the effectiveness of secondary education



in Oyo state, Nigeria. The positive relationship between principal managerial capacity and secondary school effectiveness indicates that principals who possess strong conflict resolution skills and instructional supervision skills are more likely to contribute to the effectiveness of secondary education (Edet, Benson and Williams, 2017). These skills enable them to effectively address conflicts within the school community, create a positive learning environment, and provide guidance and support to teachers, resulting in improved student outcomes.

Additionally, the findings emphasize the importance of environmental factors in secondary school effectiveness. Adequate school plant facilities, well-defined policies, and positive school-community relations contribute significantly to the overall effectiveness of secondary education. Schools with well-maintained infrastructure provide a conducive learning environment that enhances student engagement and achievement (Elujekwute and Chukwuaguzie, 2021). Clear and effective policies ensure consistent practices and support efficient school operations. Positive school-community relations foster collaboration, resource-sharing, and support, which positively impact student performance and school effectiveness (Anon, 2019).

The results also highlight the relative contributions of different aspects of principal managerial capacity and environmental factors. Conflict resolution skills and instructional supervision skills were found to have a significant relative contribution to secondary school effectiveness, whereas principal motivation skills did not show a significant contribution. This suggests that principals' ability to effectively manage conflicts and provide instructional support is crucial in driving school effectiveness (Day, Gu and Sammons, 2016). On the other hand, while principal motivation skills may still be important for other aspects of leadership, they may not directly impact the effectiveness of secondary education.

Based on these findings, it is evident that enhancing principal managerial capacity through targeted training and professional development programs is crucial to improving secondary education in Oyo state. Principals should be equipped with conflict resolution skills, instructional supervision skills, and other managerial competencies to effectively lead their schools. Moreover, attention should be given to improving environmental factors such as school infrastructure, policies, and community relations to create a supportive and conducive learning environment.

Overall, the results of this study provide valuable insights into the factors influencing the effectiveness of secondary education in Oyo state, Nigeria. They contribute to the existing body of knowledge and highlight the importance of principal managerial capacity and environmental factors in promoting high-quality education. These findings can inform educational policymakers, school administrators, and stakeholders in developing strategies and interventions to enhance secondary education outcomes in Oyo state and beyond.



Conclusion and Recommendations

Based on the findings, it can be concluded that both principal managerial capacity and environmental factors play crucial roles in determining the effectiveness of secondary education in Oyo state. Effective conflict resolution skills, instructional supervision skills, favourable school infrastructure, clear policies, and positive school-community relations are essential for improving the quality of secondary education.

Based on the study findings, the following recommendations are proposed for practice:

1. Provide comprehensive capacity building programs for school principals, focusing on conflict resolution skills, instructional supervision skills, and other managerial competencies.
2. Invest in school infrastructure to ensure adequate and well-maintained facilities.
3. Develop and enforce clear and effective policies to guide school operations.
4. Foster strong school-community relations through collaborative initiatives and partnerships.

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CHAPTER 28

TOTAL QUALITY MANAGEMENT AND REPOSITIONING OF PRIMARY EDUCATION SYSTEM

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Abstract

The basic level of education in Nigeria plays a key role in building the basis for higher levels of education in the nation. It serves as the foundations for the formal educational system by teaching pupils with fundamental numeracy, reading, creative, and communication skills. However, the status of basic education in Nigeria has been in decline, and urgent efforts are necessary to restore it. This study tries to explore the difficulties surrounding the restoration of basic education in Nigeria. The study opens by highlighting the crucial role that elementary education plays in national development. The core abilities learned at this level are vital for equipping students to handle the difficulties of further education and the workforce. It also plays a critical role in creating the country's human capital and supporting economic growth and development.

The report then tackles the difficulties affecting basic education in Nigeria. These issues include limited budget, lack of contemporary teaching and learning facilities, and inadequately educated instructors. The article advocates the implementation of total quality management (TQM) as a solution to these difficulties. TQM is a technique that focuses on achieving customer demands and expectations by continually improving processes and procedures. The study suggests the entire application of TQM in the management of elementary education in Nigeria. This involves providing elementary schools with contemporary teaching and learning facilities that encourage the transfer of quality information. Additionally, the training requirements of instructors at this level of school must be appropriately satisfied to ensure that they can give excellent education to their pupils.

Keywords: *Primary education, Qualitative education, National development, Total quality management*



Introduction

A. Background

Basic education in Nigeria is an essential component of the educational system, serving as the foundation for higher levels of education and overall human capital development (Craddock, 2018). It encompasses primary education, which typically includes the first six years of formal schooling. During this period, students are equipped with fundamental skills in numeracy, literacy, communication, and critical thinking. Basic education in Nigeria aims to provide students with a strong educational base that prepares them for further learning and empowers them to contribute to the socio-economic development of the country (Okoro, 2015).

Nigeria, with its population of over 200 million people, faces significant challenges in providing quality basic education to its citizens (Lawan, Jacob, Gregory and Lawan, 2020). The demand for education is high, but the educational system struggles to keep pace with the growing population. As a result, access to quality basic education remains a challenge, particularly in rural and disadvantaged areas. Addressing these challenges and ensuring equitable access to basic education is crucial for the nation's progress and development.

One of the key reasons why basic education in Nigeria is of paramount importance is its role in laying the foundation for lifelong learning. The skills and knowledge acquired during this phase of education form the building blocks upon which students develop their intellectual abilities and acquire new knowledge throughout their lives. Basic education instills essential literacy and numeracy skills, critical thinking abilities, and problem-solving skills that are fundamental for individuals to succeed in higher levels of education, employment, and active citizenship (Malik, 2018).

Furthermore, basic education plays a vital role in poverty alleviation. Access to quality education is closely linked to socio-economic mobility and empowerment. By equipping children with a strong educational foundation, basic education provides them with the tools to break free from the cycle of poverty, improve their economic prospects, and contribute to the overall socio-economic development of the country. Investing in basic education is an investment in the future of individuals and the nation as a whole.

In addition to its impact on individuals, basic education also has broader societal benefits. It promotes social cohesion and inclusion by providing equal opportunities for all children, regardless of their background or circumstances. Basic education fosters values such as inclusivity, tolerance, and respect, nurturing a sense of unity and shared values among diverse communities. It also plays a critical role in cultivating responsible citizenship, equipping students with the knowledge and skills



to participate actively in democratic processes, engage in civic activities, and contribute positively to their communities.

The significance of basic education in Nigeria extends to economic development as well (Onwioduokit, 2020). A well-educated population is a key driver of economic growth and prosperity. Basic education equips individuals with the skills, knowledge, and competencies necessary to participate effectively in the labor market, stimulate innovation, and contribute to economic productivity. By investing in quality basic education, Nigeria can build a skilled workforce that is capable of meeting the demands of a rapidly evolving global economy (Oladipo *et al.*, 2021).

However, despite the importance of basic education, Nigeria faces numerous challenges in providing quality education to all its citizens. Limited resources, including financial constraints, inadequate infrastructure, and a shortage of qualified teachers, hinder the delivery of quality basic education (Ogunode and Aiyedun, 2020; Ogunode, 2022). Furthermore, socio-cultural factors, such as gender disparities and cultural norms, can create barriers to access and participation in education, particularly for marginalized groups.

To overcome these challenges and restore basic education in Nigeria, concerted efforts are required from various stakeholders. Government authorities, policymakers, educators, communities, and international partners need to collaborate to develop and implement comprehensive strategies that address the issues of access, quality, and equity in basic education. This includes increasing investment in education, improving infrastructure, enhancing teacher training and support, promoting inclusive policies, and fostering community engagement.

B. Significance of Basic Education in Nigeria

Basic education holds immense significance in the context of Nigeria's development for several reasons. Firstly, it forms the foundation upon which individuals acquire knowledge, skills, and competencies necessary for their personal growth and future success. It equips students with the fundamental tools of learning, such as reading, writing, and basic mathematical skills, which are essential for further educational pursuits and lifelong learning (Igbokwe, 2015).

Moreover, basic education plays a pivotal role in building the nation's human capital. By providing students with a solid educational foundation, basic education contributes to the development of a skilled and productive workforce. A well-educated population can drive economic growth, innovation, and productivity across various sectors, thereby fostering sustainable development and competitiveness in the global arena.

Basic education also serves as a catalyst for social development and empowerment (Nikko and Iroaganachi, 2015). By ensuring that every child has access



to quality education, regardless of their socio-economic background, gender, or geographical location, basic education promotes social inclusion, equal opportunities, and social justice. It empowers individuals with knowledge and critical thinking abilities, enabling them to actively participate in the social, economic, and political spheres of their communities and the nation at large.

Furthermore, basic education plays a crucial role in poverty reduction and the promotion of sustainable development (Omoniyi, 2013). It equips individuals with the necessary skills and knowledge to pursue employment opportunities, engage in entrepreneurship, and contribute to economic activities. By enhancing employability and income-generating capabilities, basic education can uplift individuals and communities out of poverty, fostering social and economic development.

In summary, basic education in Nigeria is of paramount importance as it forms the foundation for further education, contributes to human capital development, promotes social inclusion and empowerment, and plays a vital role in poverty reduction and sustainable development. Ensuring access to quality basic education for all Nigerian children is not only a moral imperative but also a strategic investment in the nation's future.

Difficulties Affecting Basic Education in Nigeria

A. Limited Budget

One of the major challenges confronting basic education in Nigeria is the limited budget allocated to the sector (Ogunode, 2018). Insufficient funding has a significant impact on the quality and effectiveness of educational services provided. Inadequate financial resources hinder the provision of necessary infrastructure, instructional materials, teacher training, and curriculum development.

The budgetary allocation to education in Nigeria has consistently fallen short of international standards. The United Nations Educational, Scientific and Cultural Organization (UNESCO) recommends that countries allocate at least 15% to 26% of their national budget to education. However, Nigeria has struggled to meet this benchmark (Ifeanyi, Jacob and Solomon, 2021). In recent years, the allocation to education has remained below 10% of the national budget, limiting the capacity to address the diverse needs of basic education effectively.

The lack of adequate funding results in several adverse consequences. Firstly, it contributes to overcrowded classrooms, with a high student-to-teacher ratio, which hampers effective teaching and learning. Limited resources also impede the provision of essential teaching aids, textbooks, and learning materials, further compromising the quality of education. Additionally, insufficient funds hinder investments in



educational infrastructure, such as the construction and maintenance of school buildings, libraries, laboratories, and computer facilities.

B. Lack of Contemporary Teaching and Learning Facilities

The absence of contemporary teaching and learning facilities poses a significant challenge to basic education in Nigeria (Jegade, 2019). Many schools across the country lack essential infrastructure necessary for effective educational delivery. This includes inadequate classrooms, libraries, laboratories, and technological resources.

Insufficient classrooms lead to overcrowding, making it difficult for teachers to provide individual attention to students and implement student-centered teaching approaches. The lack of libraries and laboratories limits access to supplementary learning resources and practical hands-on experiences, respectively. In addition, the absence of up-to-date technological resources, such as computers and internet connectivity, restricts students' exposure to digital literacy skills and inhibits the integration of technology into teaching and learning processes.

The lack of contemporary teaching and learning facilities not only hinders the acquisition of knowledge and skills but also affects the overall learning environment and student motivation. Research has consistently demonstrated that a conducive learning environment, supported by appropriate infrastructure, positively influences student engagement, academic performance, and learning outcomes (Salas-Pilco, Yang and Zhang, 2022). Therefore, addressing the deficit in teaching and learning facilities is crucial to enhancing the quality of basic education in Nigeria.

C. Inadequately Educated Instructors

Another significant difficulty affecting basic education in Nigeria is the shortage of well-trained and qualified instructors (Josiah and Jacob, 2021). Many teachers lack the necessary qualifications, pedagogical skills, and subject knowledge required to deliver quality education to students. This shortage is particularly acute in rural and remote areas.

Inadequately trained instructors face challenges in effectively engaging students, employing innovative teaching methods, and adapting instruction to meet diverse learning needs. Furthermore, limited professional development opportunities and inadequate incentives for teachers contribute to the issue of teacher quality. Without continuous training and support, teachers may struggle to keep up with new pedagogical approaches, curriculum changes, and educational advancements.

The shortage of well-prepared and motivated teachers undermines the quality of education provided at the basic education level (Jacob, 2021). It diminishes the



effectiveness of teaching and learning processes and impedes the development of critical thinking, problem-solving, and other essential skills among students.

To address this challenge, comprehensive measures are needed to enhance teacher recruitment, training, and professional development. Providing pre-service and in-service training programs, improving teacher remuneration and incentives, and strengthening teacher education institutions are crucial steps in improving the quality of instructors in basic education.

In conclusion, addressing the difficulties affecting basic education in Nigeria requires a multi-faceted approach. Adequate budgetary allocation, investments in contemporary teaching and learning facilities, and comprehensive teacher training and support are vital components of improving the quality and effectiveness of basic education. By prioritizing and investing in basic education, Nigeria can lay a strong foundation for the development of its citizens and propel the nation towards sustainable growth and development.

Total Quality Management (TQM) as a Solution

A. Definition and Principles of TQM

Total Quality Management (TQM) is an approach to management that aims to continuously improve the quality of products, services, and processes by focusing on customer needs and expectations (Topalović, 2015). TQM emphasizes the involvement of all employees in the organization and a commitment to excellence in every aspect of operations (Sweis, *et al*, 2019). It is based on several core principles:

1. **Customer Focus:** TQM places a strong emphasis on understanding and meeting customer needs and expectations. This involves gathering customer feedback, conducting market research, and ensuring that the products and services provided align with customer requirements.
2. **Continuous Improvement:** TQM recognizes that excellence is a journey rather than a destination. It promotes a culture of continuous improvement by encouraging employees to identify areas for enhancement, eliminate waste, and implement innovative solutions to enhance efficiency and effectiveness.
3. **Employee Involvement:** TQM emphasizes the importance of involving all employees in the improvement process. It encourages teamwork, collaboration, and the empowerment of employees to contribute their ideas, expertise, and creativity towards achieving organizational goals.
4. **Process Orientation:** TQM focuses on understanding and optimizing processes to enhance overall performance. This involves identifying key processes, mapping process flows, eliminating bottlenecks, and implementing standardized procedures to ensure consistency and efficiency.



5. **Data-Driven Decision Making:** TQM emphasizes the use of data and facts to drive decision-making processes. It encourages the collection and analysis of relevant data, such as performance metrics and customer feedback, to identify areas for improvement and make informed decisions.

B. Application of TQM in Education

The principles and practices of TQM can be effectively applied to the field of education, including basic education in Nigeria. Implementing TQM in education involves adapting the principles of TQM to the unique context of educational institutions. Some key strategies for applying TQM in education include:

1. **Stakeholder Engagement:** TQM in education emphasizes engaging all stakeholders, including students, parents, teachers, administrators, and the broader community. Involving stakeholders in decision-making processes, gathering their feedback, and incorporating their perspectives helps ensure that educational processes and outcomes align with their needs and expectations (Gumus, 2020).
2. **Continuous Professional Development:** TQM promotes continuous professional development for teachers and administrators. Providing opportunities for ongoing training, workshops, and collaboration helps enhance their knowledge, skills, and pedagogical approaches, leading to improved teaching and learning outcomes (Nawelwa, *et al.*, 2020).
3. **Curriculum Design and Delivery:** TQM encourages a learner-centered approach to curriculum design and delivery (Basbas, 2015). This involves aligning curriculum objectives with student needs and aspirations, incorporating innovative teaching methods and technologies, and regularly reviewing and updating the curriculum to ensure its relevance and effectiveness.
4. **Quality Assurance and Evaluation:** TQM emphasizes the importance of quality assurance and evaluation mechanisms in education. Implementing rigorous assessment practices, monitoring student progress, conducting regular evaluations of teaching methodologies, and seeking feedback from students and parents help identify areas for improvement and ensure the delivery of quality education.

C. Benefits of Implementing TQM in Basic Education

Implementing TQM in basic education in Nigeria can yield several benefits:

1. **Improved Student Performance:** TQM focuses on enhancing teaching and learning processes, which can lead to improved student performance and academic achievements (Mahmoud and Ismail, 2018). By implementing



effective instructional strategies, providing a supportive learning environment, and tailoring education to individual student needs, TQM can contribute to better learning outcomes.

2. **Enhanced Teacher Effectiveness:** TQM promotes continuous professional development and empowers teachers to contribute to the improvement of education (Djatkiko, 2016). By providing teachers with the necessary training, resources, and support, TQM can enhance their effectiveness, job satisfaction, and commitment to student success.
3. **Increased Stakeholder Satisfaction:** TQM's customer-focused approach ensures that the needs and expectations of students, parents, and other stakeholders are met (Amadi, 2023). This can lead to increased stakeholder satisfaction. When students feel that their educational needs are being met, parents are confident in the quality of education provided, and the community sees the positive impact of education, overall satisfaction levels rise.
4. **Efficient Resource Utilization:** TQM emphasizes the elimination of waste and the optimization of resources (Mrugalska and Wyrwicka, 2017). By identifying and addressing inefficiencies in educational processes, such as reducing administrative burdens or improving the allocation of resources, TQM can help educational institutions make better use of their available resources, leading to cost savings and improved operational efficiency.
5. **Continuous Improvement Culture:** TQM fosters a culture of continuous improvement within educational institutions. By encouraging collaboration, innovation, and data-driven decision-making, TQM promotes a proactive approach to identifying and addressing challenges. This results in an ongoing cycle of improvement, where educational institutions are constantly striving to enhance their practices, programs, and outcomes.
6. **Enhanced Accountability and Transparency:** TQM promotes accountability and transparency in educational institutions (Prakash, 2018). Through the use of performance metrics, regular evaluations, and stakeholder feedback, TQM ensures that educational institutions are accountable for the quality of education they provide. This transparency builds trust among stakeholders and fosters a sense of responsibility among educators.
7. **Positive Organizational Culture:** TQM contributes to the development of a positive organizational culture within educational institutions (Alghambi, 2018). By valuing and recognizing the contributions of all employees, promoting teamwork and collaboration, and providing opportunities for professional growth, TQM creates an environment that is conducive to employee satisfaction, motivation, and engagement.



8. **Alignment with Global Standards:** Implementing TQM in basic education aligns educational practices with global standards of quality and excellence. As countries around the world strive to improve their educational systems, adopting TQM principles allows Nigeria to align its basic education sector with international best practices, making it more competitive and better positioned in the global arena.

In conclusion, implementing Total Quality Management (TQM) in basic education in Nigeria can bring numerous benefits, including improved student performance, enhanced teacher effectiveness, increased stakeholder satisfaction, efficient resource utilization, a culture of continuous improvement, enhanced accountability and transparency, a positive organizational culture, and alignment with global standards. By adopting TQM principles and practices, Nigeria can strengthen its basic education system, provide quality education to all students, and contribute to the overall development and progress of the nation.

IV. Implementing TQM in the Management of Elementary Education in Nigeria

A. Providing Contemporary Teaching and Learning Facilities

To effectively implement Total Quality Management (TQM) in the management of elementary education in Nigeria, it is essential to address the need for contemporary teaching and learning facilities. Modern and well-equipped facilities contribute to creating a conducive learning environment and support the delivery of quality education (Khan and Arain, 2022). Here are some key considerations for providing contemporary teaching and learning facilities:

1. **Infrastructure Development:** Adequate infrastructure is crucial for elementary schools to function effectively. This includes the construction and maintenance of classrooms, libraries, science laboratories, computer labs, playgrounds, and other necessary facilities. Investing in infrastructure ensures that students have access to a safe and comfortable learning environment.
2. **Up-to-date Technology:** Incorporating technology into teaching and learning processes is essential in the digital age. Providing schools with computers, internet connectivity, educational software, and multimedia resources enables students to develop digital literacy skills and enhances their engagement and learning outcomes. Additionally, technology can facilitate access to a wider range of learning materials and promote interactive and personalized learning experiences.
3. **Learning Resources and Materials:** Ensuring the availability of appropriate and up-to-date learning resources is essential for effective education. Schools should have access to textbooks, reference materials, educational software,



laboratory equipment, art supplies, and other resources aligned with the curriculum. Well-equipped libraries that offer a diverse collection of books and other educational materials further enhance the learning experience.

4. **Maintenance and Upkeep:** Providing contemporary teaching and learning facilities is not enough; regular maintenance and upkeep are essential to ensure their longevity and functionality. Schools should have systems in place to regularly inspect and maintain facilities, repair any damages promptly, and replace outdated or malfunctioning equipment. This requires proper budget allocation and effective management of resources.

By providing contemporary teaching and learning facilities, elementary schools in Nigeria can create an environment conducive to quality education and facilitate the implementation of TQM principles in educational practices.

B. Training Requirements for Instructors

The effective implementation of TQM in elementary education necessitates addressing the training requirements of instructors. Well-trained and qualified teachers are crucial for delivering quality education (Annan, 2020). Here are key aspects to consider when addressing the training needs of instructors:

1. **Pre-Service Teacher Education:** Preparing prospective teachers with the necessary knowledge and skills is vital. Teacher education programs should focus not only on subject matter expertise but also on pedagogical training, classroom management, assessment strategies, and the use of technology in teaching. These programs should be designed to develop reflective practitioners who can adapt to the evolving needs of students and employ student-centered approaches.
2. **In-Service Professional Development:** Continuous professional development for teachers is essential to enhance their teaching abilities and keep up with educational advancements (McMillan, *et al.*, 2016). In-service training programs should be provided regularly, covering areas such as curriculum updates, innovative teaching methodologies, assessment techniques, and classroom management strategies. These programs can be delivered through workshops, seminars, conferences, online courses, and collaborative learning opportunities.
3. **Mentoring and Support:** Establishing mentorship programs can provide novice teachers with guidance and support from experienced educators (Callahan, 2016). Mentoring allows new teachers to learn from experienced practitioners, gain insights into effective teaching practices, and receive constructive feedback. Providing a support system for teachers through peer collaboration,



professional learning communities, and access to educational resources also contributes to their professional growth and effectiveness.

4. **Collaboration with Teacher Education Institutions:** Collaborating with teacher education institutions plays a significant role in improving the training of instructors (Huong et al., 2020). Establishing partnerships between schools and universities can facilitate the exchange of knowledge and expertise. This collaboration can involve joint research projects, internships for teacher education students, and the involvement of university faculty in professional development programs for practicing teachers.

By addressing the training requirements of instructors, Nigeria can ensure that teachers are equipped with the necessary skills and knowledge to implement TQM principles and provide quality education in elementary schools.

C. Enhancing the Transfer of Quality Information

To implement TQM effectively in the management of elementary education in Nigeria, it is crucial to enhance the transfer of quality information. This involves ensuring that relevant and up-to-date information flows seamlessly among various stakeholders in the education system. Here are key considerations for enhancing the transfer of quality information:

1. **Communication Channels:** Establishing effective communication channels is essential for the exchange of information among stakeholders (Agudo-Valiente, *et al.*, 2015). This includes regular communication between school administrators, teachers, students, parents, and the broader community. Utilizing various communication methods such as newsletters, emails, parent-teacher meetings, and online platforms can facilitate the sharing of important information related to curriculum updates, school events, student progress, and educational initiatives.
2. **Data Collection and Analysis:** Implementing data collection and analysis systems helps in monitoring and evaluating the quality of education. This includes collecting relevant data on student performance, attendance, behaviour, and feedback from various stakeholders. Analysing this data provides insights into areas that require improvement and helps in making data-driven decisions to enhance the quality of education.
3. **Quality Assurance Mechanisms:** Implementing quality assurance mechanisms ensures that educational processes and outcomes meet defined standards (Elassy, 2015). This includes conducting regular evaluations, assessments, and audits to assess the effectiveness of teaching methods, curriculum implementation, and overall school performance. The findings from these



assessments can inform improvement strategies and facilitate the transfer of information regarding areas of strength and areas that require attention.

4. **Feedback Loops:** Establishing feedback loops allows stakeholders to provide input, suggestions, and concerns regarding the quality of education (Jackson, *et al.*, 2018). This can be done through surveys, suggestion boxes, focus groups, and other feedback mechanisms. Actively seeking feedback from students, parents, teachers, and community members enables schools to identify areas for improvement and make necessary adjustments.
5. **Collaboration and Knowledge Sharing:** Encouraging collaboration and knowledge sharing among educators and schools can facilitate the transfer of best practices and innovative teaching approaches (Al-Kurdi, *et al.*, 2018). This can be achieved through professional learning communities, workshops, conferences, and online platforms where educators can exchange ideas, share resources, and learn from one another.
6. **Transparency and Accountability:** Promoting transparency and accountability in the education system fosters trust among stakeholders. This includes making relevant information accessible to the public, ensuring transparency in decision-making processes, and being accountable for the quality of education provided. Regular reporting and public disclosure of school performance data and improvement plans contribute to the transfer of quality information.

By enhancing the transfer of quality information, stakeholders in the elementary education system can collaborate effectively, make informed decisions, and work towards continuous improvement in the delivery of education.

In conclusion, implementing TQM in the management of elementary education in Nigeria requires providing contemporary teaching and learning facilities, addressing the training requirements of instructors, and enhancing the transfer of quality information. By focusing on these aspects, Nigeria can establish a solid foundation for quality education, empower its educators, and create a learning environment that promotes the holistic development of students. Through the effective implementation of TQM principles, Nigeria can improve the overall quality and effectiveness of elementary education, leading to the development of a well-educated and skilled populace that contributes to the nation's progress and prosperity.

V. Conclusion

A. Summary of Findings

Throughout this study, we have explored the challenges surrounding the restoration of basic education in Nigeria and the potential solutions through the implementation of Total Quality Management (TQM) principles. The findings can be summarized as follows:



1. Basic education in Nigeria plays a crucial role in national development, serving as the foundation for higher levels of education and contributing to the country's human capital and economic growth.
2. The difficulties affecting basic education in Nigeria include limited budgetary allocations, a lack of contemporary teaching and learning facilities, and inadequately educated instructors.
3. Total Quality Management (TQM) is a viable solution for addressing these difficulties. TQM focuses on meeting customer demands and continuously improving processes and procedures to enhance the quality of education.
4. Implementing TQM in the management of elementary education in Nigeria can lead to several benefits, including improved student performance, enhanced teacher effectiveness, increased stakeholder satisfaction, efficient resource utilization, a culture of continuous improvement, enhanced accountability and transparency, a positive organizational culture, and alignment with global standards.

B. Importance of Restoring Basic Education in Nigeria

Restoring basic education in Nigeria is of paramount importance for several reasons.

1. **Equity and Access:** Basic education serves as a fundamental right for all children, regardless of their socioeconomic background. By restoring and improving basic education, Nigeria can ensure equal access to quality education, reducing educational disparities and promoting social equity.
2. **Human Capital Development:** Basic education lays the foundation for the development of essential skills and knowledge that are crucial for individuals to thrive in further education, the workforce, and society as a whole. By restoring and enhancing basic education, Nigeria can nurture its human capital, fostering a skilled and productive workforce that drives economic development.
3. **Poverty Reduction:** Access to quality education has a direct impact on poverty reduction. By providing children with a strong educational foundation, Nigeria can equip them with the skills and knowledge necessary to break the cycle of poverty, increase their employability, and improve their socioeconomic status.
4. **Sustainable Development:** Basic education is closely linked to sustainable development. It empowers individuals to make informed decisions, promotes awareness of environmental issues, and cultivates responsible citizenship. Restoring basic education in Nigeria contributes to the country's efforts in achieving sustainable development goals.



C. Recommendations for Future Action

To restore and improve basic education in Nigeria, the following recommendations are proposed:

1. **Increased Funding:** Adequate and sustained funding should be allocated to the basic education sector. This includes both government investments and private sector partnerships to ensure sufficient resources for infrastructure development, teacher training, learning materials, and educational programs.
2. **Policy Reforms:** The development and implementation of comprehensive education policies that prioritize basic education and align with TQM principles are essential. These policies should address issues such as curriculum development, teacher recruitment and training, assessment strategies, and infrastructure improvement.
3. **Teacher Training and Professional Development:** Continuous professional development programs should be provided to teachers to enhance their pedagogical skills, subject knowledge, and familiarity with TQM principles. Mentorship programs, collaboration with teacher education institutions, and access to relevant resources should be facilitated to support teachers in their professional growth.
4. **Infrastructure Development:** Investment in infrastructure is crucial to provide contemporary teaching and learning facilities. This includes the construction and maintenance of classrooms, libraries, laboratories, and access to technology and internet connectivity.
5. **Stakeholder Engagement:** Active involvement and engagement of stakeholders, including parents, community members, and local authorities, are essential for the success of restoring basic education. Collaboration and partnerships with relevant stakeholders should be fostered to ensure their support and participation in decision-making processes.
6. **Monitoring and Evaluation:** Establishing robust monitoring and evaluation systems to assess the effectiveness of education programs, the quality of teaching, and student outcomes is necessary. This includes the collection and analysis of data on student performance, teacher effectiveness, infrastructure utilization, and stakeholder satisfaction. Regular evaluations and assessments will help identify areas of improvement and guide decision-making processes.
7. **Collaboration and Knowledge Sharing:** Encouraging collaboration and knowledge sharing among schools, educational institutions, and relevant organizations can promote the exchange of best practices, innovative teaching methods, and resources. This can be facilitated through professional learning communities, conferences, workshops, and online platforms.



8. Continuous Improvement: Embracing a culture of continuous improvement is vital for sustaining the progress made in restoring basic education. Regular review and refinement of policies, programs, and practices based on feedback, evaluation results, and emerging educational trends will contribute to ongoing enhancements in the quality of education.
9. In conclusion, restoring basic education in Nigeria is crucial for equitable access to quality education, human capital development, poverty reduction, and sustainable development. Through increased funding, policy reforms, teacher training, infrastructure development, stakeholder engagement, monitoring and evaluation, collaboration, and a focus on continuous improvement, Nigeria can effectively restore and enhance basic education, setting the stage for a brighter future for its children and the nation as a whole.

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CHAPTER 29

USING MODERN TECHNOLOGICAL TOOLS IN AGRICULTURAL EDUCATION IN HIGHER INSTITUTIONS: A PANACEA FOR RECOVERING FROM THE COVID-19 PANDEMIC

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Abstract

This study examined the gains of using modern technological tools in teaching Agricultural education. It considered their usage as a panacea for recovering from the Covid-19 pandemic. It was observed that the use of these modern technological tools brought transformation into the teaching and learning process occasioned by the COVID-19 Pandemic. This digital technology used during the COVID-19 era indeed brought significant improvements in higher education teaching. It was also observed that modern technological tools had made a high impact on teaching and learning during the COVID-19 pandemic and their usage had numerous advantages. The major technological tools used during the Pandemic ranged from online teaching, collaborative and cooperative learning, creative learning, integrative learning, evaluative learning, extensive access to scholarly works, e-conferences paper presentations, e-books, and speedy access to information which are not restricted to geographical location. These tools helped to fill the gap created by the compulsory holidays imposed on students by the stay-at-home order by the Governments of the countries affected by the deadly pandemic. It is therefore posited that, full incorporation and integration of modern technological tools in the teaching of agriculture in the higher education system will be of great benefit to both the learners, teachers and the entire education industry, thereby initiating a paradigm shift in this all-important industry for globalization. Based on this fact, it is recommended in this paper that, Government at all levels should endeavour to provide, strengthen and ensure effective internet network services for higher institutions and ensure effective usage of online tools in all schools. Efforts should be made by the government and administrators to provide a sustainable electricity supply in all institutions of higher learning. Also, arrangements should be made to



provide technical assistants to ensure the effective use and maintenance of these important and innovative tools

Keywords: *Pandemic, Technological tools, Agricultural education and COVID-19*

Introduction

All over the orb, an environment for learning has been created to be focused on the use of modern electronic networks which can help students in universities receive adequate learning and provide room for individualized instruction. It has also facilitated learning practices that are more suitable to learners of all categories. This new learning environment gives room for high interaction and collaboration between instructors, teachers and learners far more than the normal traditional learning environment. The computer-based learning is composed of the use of a full range of hardware and software that is accessible for use. Each of these components can be used in two ways: Either as computer-managed instruction or computer-assisted learning. In computer-assisted- learning, computers are used instead of the traditional methods of teaching and learning. This is usually done through the provision of interactive software as support tools for self-learning outside the class. In computer-managed instruction, computers are usually used either for storing information or for retrieving information for effective management of instruction. (Algahtani, 2011).

A pandemic is an outbreak of disease that spreads across countries and continents. The COVID-19 pandemic became a global, transnational health threat to the extent that on June 15, 2020, the pandemic had spread to more than 200 countries, infecting more than seven million people and this made it turn into a global health issue of much concern causing huge societal and social changes in the normal lives of the people. This pandemic did not only challenge the public health system in every country, but it also shook- up the social order This made it to change people's daily lives under stay at home order and many were overwhelmed by this new order (Shengnan, Pnina, Xiaohua, Madelyn and Kenneth, 2020).

Modern technological tools are referred to as the internet, platforms, networks, phones, apps, and databases, as well as underlying infrastructure, skype zoom, WhatsApp groups and other internet-based teaching. Using them for delivering information to students was a necessary factor in the new social order, especially during the COVID-19 global pandemic.

Using modern technological tools extends further above identifying, tracing, understanding, managing, treating, and perceiving pandemics (Wilson & Jumbert, 2018). More importantly, modern technological tools became the best chance to maintain social order during the pandemic. The use of these modern technological tools during and after the COVID-19 pandemic has both limitations and gains.



COVID-19 has indeed restructured the habits and lives of people. The severity of the covid-19 pandemic became worrisome to the people and the societies at large. This situation calls for the need for an urgent and long-term commitment to the ways of dealing with the situation that comes to play in the face of this new reality of life that the pandemic has come with. Most nations responded to the COVID-19 pandemic by promptly implementing measures to sustain public health; these measures include non-pharmaceutical interventions such as quarantine, social distancing, the isolation of infected populations, travel restrictions and school closure. (Maila, 2021). All these major parameters were used to help control the biting global infectious crisis.

Quarantine has its meaning as the isolation and enforced movement restriction of people, who may have been confirmed with an infectious disease. The reason is to assess if they are unwell, thus reducing their risk of infecting others. Social distancing on the other hand is a public health action plan used to discourage sick people from getting direct contact with healthy people to minimize the spread of the disease. Since school is a place where people gather, and infectious diseases could easily spread to many, this is the reason why many countries quickly and drastically adopted the school closure strategy to reduce the spread of COVID-19 within and outside their society. This made many schools shift from conventional learning to remote learning which is mainly through the use of modern technological tools. Due to school closures during the COVID-19 pandemic, remote learning became the new order of learning. This method is significantly different from well-planned online learning. It was not just online learning; it was an Emergency Remote Teaching (ERT) or Emergency Remote Learning (ERL) it was also referred to as Pandemic Pedagogy (PL). This paradigm shift in teaching and learning all happened too quickly without prior planning. It was an immediate response to the crisis that occurred without warning. A follow-up of this scenario was that educators started using the media or methods they could hold on to and those that were convenient to use then. Many educators and students were not well prepared and found it difficult to turn their existing learning process into learning online teaching and learning. These new methods were not easy to stick to but many educators and students that were strong-willed remained committed to online teaching and learning despite the difficulties they faced and tried their best to leave no vacuum in the education sector

What is Technology?

Technology has become an essential part of the instructional process resulting in the development of new waves in the instructional process. According to Collins English Dictionary (1979), "Technology refers to methods, systems and devices which are the result of scientific knowledge being used for practical purposes. It could also be seen as the sum of techniques, skills, methods and processes used in the production of



goods and services or the accomplishments of objectives, such as scientific investigation and it can be embedded in machines to allow for operations without detailed knowledge of their workings. Technology is multi-facet, touching almost every part of our lives, and communities.

Use of Modern Technological Tools as Means of Recovery from COVID-19 in the Classrooms

COVID-19 has come and gone but it has created a wide gap that needs to be filled in the education industry. Many institutions of higher learning in Nigeria and other countries affected by the deadly pandemic opted for the use of modern technological tools during its heat period. Some who used these tools quickly discovered the huge benefits of using them in the teaching-learning process. This new wave of events led to the use of a mixture of conventional and non-conventional methods now referred to as blended learning which was used during the COVID-19 outbreak. Blended learning is the application of more than one method, strategy, technique, or media in and outside the classroom. Blended learning is a combination of conventional lectures, and web-based content, or traditional face-to-face learning incorporated with new technological tools. (Rahiem, 2020).

The structure of the modern classroom is changing daily and this has resulted in a technological gap between the progress of the society and instructional activities of the teacher in the classroom. This gap has to be filled and bridges built if we are to brace up with time. Technology has transformed the world into a global village but the teaching and learning activities at the school level have remained almost the same in some schools even after the Covid-19 pandemic. In most classrooms, for instance, the knowledge is still being imparted by teachers in the traditional way. The teacher-centred mode of teaching which in most cases is usually uninteresting to students needs to be overhauled and changed to the use of modern technological tools and new methods which enable the students to occupy the centre stage in the teaching-learning process. It is for this reason that this study is focused on using modern technological tools in Agricultural Education which could bring about a quick recovery from the covid-19 pandemic.

Why Integrate Modern Technological Tools into the Teaching and Learning of Agriculture?

Agriculture is a practical subject and the various concepts in agriculture need to be taught as practically as possible to enable students to get the full benefits of agricultural education.



Agricultural education is the type of education given to students in higher institutions primarily to prepare them for employment in the agricultural sector. It is the instruction, teaching and training in all areas of agriculture. That is classroom instruction, experimental learning and leadership education. All these areas are practically oriented and the use of technological tools will make the teaching in agricultural education more productive and real.

In the real sense of life, Information Communication Technology (ICT) has become a household name because it has become part of individuals' lives across the globe. ICT is often used to improve the quality of the teaching-learning process to help learners acquire relevant skills and knowledge. Integrating the use of technological tools into the teaching of Agriculture in tertiary institutions in Nigeria will not only boost agricultural production, it will also help move our education system to the next level.

Stephanie (2016) referred to technology integration as “focusing on “how” to use technology to inspire positive changes in teaching methods on an international level”. She also noted that it enhances the use of modern instructional modes of teaching and learning in tertiary institutions to meet the demands of the current trends in academics. Integrating technology into Agricultural Education classroom instruction does not only mean teaching basic concepts in Agriculture through the use of computing or acquisition of skills and software programs in a separate computer class, but effective technology integration must cut across the curriculum in ways that expand and enhance the total learning process. For the use of technology to be effective, it must support these four key components of learning: Active engagement, participation in groups, frequent interaction and feedback. Effective technology integration could be achieved when the use of technology becomes routine.

In the educational sector, access to education and quality Agricultural education can be tremendously improved. Using modern technological tools can have a direct positive impact on teachers and students in the following ways:

Active learning: Modern technological tools promote learner engagement as learners choose what to learn at their own pace and work on real-life situations' problems. Modern technological tools help in the calculation and analysis of information obtained for examination and also students' performance reports are all being computerized and made easily available for inquiry in contrast to memorization-based or rote learning.

Collaborative and cooperative learning: Modern technological tools encourage interaction and cooperation among students, and teachers regardless of the distance which is between them. It also provides students with the chance to work with people from different cultures and work together in groups, hence helping students to enhance their communication skills as well as their global awareness. Researchers have found that typically the use of modern technological tools leads to



more cooperation among learners within and beyond school and there exists a more interactive relationship between students and teachers. Collaboration is a philosophy of interaction and personal lifestyle where individuals are responsible for their actions, including learning and respecting the abilities and contributions of their peers.

Creative Learning: Modern technological tools promote the manipulation of existing information and create one's knowledge to produce a tangible product or a given instructional purpose.

Integrative learning: Modern technological tools promote an integrative approach to teaching and learning, by eliminating the synthetic separation between theory and practice unlike in the traditional classroom where emphasis encloses just a particular aspect.

Evaluative learning: The use of modern technological tools for learning is student-centred and provides useful feedback through various interactive features. Modern technological tools allow students to discover and learn through new ways of teaching and learning which are sustained by constructivist theories of learning rather than students memorization and rote learning.

The use of new technologies in teaching and learning according to Ezenwafor (2012) includes:

Using micro-computers with software applications to write or produce documents; skilful keyboarding; E-mail and messaging, Internet browsing using search engines, windows messenger, and Yahoo chat room; using opaque projectors, slide projectors and multimedia projectors; utilizing e-banking, e-commerce, and e-economies; utilizing different computer software, and applications such as word processors, spreadsheets, power-point, desktop publishing, and graphics among others.

Other technological devices available for teaching and learning, according to Osuala (2009) include media typewriters or processors, video tape recorders, sound on paper systems, e-commerce, advanced calculators, dial access systems, digital libraries, individual audio applications and audio-visual retrieval systems. Although these technologies are not entirely new in many advanced countries, they are relatively new in Nigeria. While some of them are already being utilized in some schools, others are yet to be used in many of Nigeria's educational institutions (Wordu and Anim, 2021)

The technology could be used in agriculture and fields of education in four major ways; as a part of the curriculum, as an instructional delivery system, as a means of aiding instructions and as a tool to enhance the entire learning process. According to Raja and Nagasubramani (2018), the latest insights as to how modern students of today prefer to use technology and how their learning get impacted if they use technology, it was revealed that the use of modern equipment and technological tools



in learning increases the interactivity of the students. They also discovered that it was much more interactive because it is full of interesting areas, especially when technology is well used. The transfer of knowledge becomes very easy and convenient, as well as effective. What this means is, that students' minds tend to work faster when assisted with modern technological tools. The use of modern technological tools is innovative and can make life easy and smooth. Today, modern technological tools can be used in the teaching and learning of agricultural education in the following ways:

Internet connection and round-the-clock connectivity

The internet has grown in its importance by many folds, over the years. Its importance in the education world can never be undermined. Despite the chances of fraud and drawbacks, the use of the internet is like a blessing for students. Today, the internet is present in almost everything we use. From television to gaming consoles, and our phones, the internet is everywhere. The use of the internet allows students to find amazing convenience, they can find various kinds of help, tutorials and other kinds of assisting material which could be used to academically improve and enhance their learning.

Using projectors and visuals

Visual images always have a strong appeal compared to words. Using projectors and visuals to aid in learning is another form of great technological use. Top institutions around the world, now rely on the use of amazing PowerPoint presentations and projections to keep the learning interactive and interesting. Technological use of projectors within schools and colleges can take the interaction and interest levels right up and also improve motivation. Students like to see appealing visuals and something that entices them to think rather than just read words. The learning part also becomes pretty efficient when it comes to technology.

Digital footprint in the education sector

Digital education has penetrated the education sector. This penetration has resulted in round-the-clock connectivity with students and different forums that are available for different kinds of assignments or help. As the power of digital increases, there are and there will be more applications that will assist students in development and learning.

Online degrees with the use of technology

Online degrees have become a very common phenomenon. People wish to take up online courses for their learning and certifications. Top institutions offer amazing online programs with the use of various applications and the Internet. This is a concept



that will continue to rise as it gets more support and awareness. The online degree scenario around the world is more famous among students who work and look for flexible studying programs. (Ezenwafor, 2012).

Importance of using modern technological tools in Teaching and Learning Agricultural Education

Technology has changed the way teachers teach and it offers educators effective ways to reach different types of learners and students via multiple channels. It also enhances the relationship between teachers and students. The use of modern technology tools has made teaching and learning to be more concrete, real and result-oriented. With the introduction of modern technological tools, there has been a growing call for the use of modern technologies in all sectors of the education industry including the teaching of Agriculture. Most schools still lag when it comes to integrating technology into the teaching of agriculture most teachers of agriculture think that it is a practical subject and should only be taught in the physical classroom environment. Many are just beginning to explore the true gains that technology offers for teaching and learning. When technological tools are effectively used, they can help students acquire the skills needed for survival in this complex and highly technological knowledge-based economy. Since the use of technological tools in agricultural education will bring about efficiency thereby adding value to the teaching and learning process, it will also make sourcing for information easier and smart as teachers and students can now source information from any library in the world through the internet. It makes students participate actively and be more engrossed in the subject. It also encourages teamwork and brings about student-teacher interaction and this makes students learn more and prepare for future challenges. It is no gainsaying the fact that when technologies are effectively applied in classroom situations, the teaching and learning process will be more productive.

Recommendations

1. The sustainability of using modern technological tools in the teaching and learning of Agricultural education after the COVID-19 pandemic can only be achieved if the following are taken into consideration.
2. Government at all levels should provide, and ensure effective internet network services in higher institutions to ensure effective usage.
3. Internet facilities work with light. Government should therefore provide steady electricity in all higher institutions to power internet facilities. Apart from University communities the students also require electricity to power their computers, laptops and phones.



4. Tertiary institutions of learning should endeavour to provide technical assistants to ensure the effective use, administration and maintenance of technological tools.
5. Agricultural education teachers should be adequately trained in the use of Internet facilities. In addition, they should be sponsored to attend seminars and workshops on Information and Communication Technology.

Conclusion

The COVID-19 pandemic has come and gone but its effects on the Nigerian education system both positive and negative have created a wide gap to be filled. It came with numerous challenges to the education sector all over the world. During the Covid-19 era, there was a deviation from the normal methods of teaching Agriculture because of the stay-at-home order by the Federal Government. This made most educators embrace new ways of passing knowledge across to their students. These new methods of teaching and learning worked out for those who opted for them during the COVID-19 era because it opened opportunities for educators to learn how to use new technological tools in passing knowledge across to their students who were experiencing the compulsory holidays emanating from the stay at home order by the Governments of various countries affected. It also enabled students to learn how to carry out independent learning while at home. However, using modern technological tools have its challenges despite their numerous benefits, but this paper posits that efforts should be made to sustain the use of technological tools in Agricultural education for the benefit of our present and future generations.

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CHAPTER 30

THE INFLUENCE OF GOAL ORIENTATION AND SELF-EFFICACY ON READING PERFORMANCE AMONG STUDENTS WITH LEARNING DISABILITIES IN IBADAN, OYO STATE

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Abstract

Reading difficulties are the most frequent learning problem among students and the main reason for academic failure among students with learning disabilities. The aim of this study was to investigate the influence of goal orientation and self-efficacy on reading performance among students with learning disabilities in senior secondary schools in Ibadan, Nigeria.

The survey design using correlational type was used, while the multistage sampling procedure was adopted. Total enumeration techniques was used to select five local government in Ibadan, Oyo State. The simple ransom sampling was used to select one school from each local government. Two hundred students were selected after screening for learning disabilities using the screening checklist for suspected learning disabilities. The instrument used were Adapted Screening Checklist for Suspected Learning Disability $r=0.72$, Goal Orientation $r=0.75$, Self-efficacy $r=0.85$, and Reading Comprehension Performance Test were used for data collection. Data were analysed using Pearson product moment correlation and multiple regression at 0.05 level of significance.

More than half of the participants 57% were 16 years and above, while 58% of them were male. Goal orientation ($r = 0.64, p < 0.05$) and self-efficacy ($r = .73, p < 0.05$) had significant positive relationship with reading performance. Goal orientation ($\beta = 0.29, t = 4.58, P < 0.05$) and self-efficacy ($\beta = 0.54, t = 8.66, P < 0.05$) contributed relatively to reading performance. The most potent factor was self-efficacy ($\beta = 0.54, t = 8.66, P < 0.05$) and followed by goal orientation ($\beta = 0.29, t = 4.58, P < 0.05$). There was a joint contribution of goal



orientation and self-efficacy on reading performance ($F_{(2, 197)} = 133.51$, $P < 0.05$) $Adj.R^2 = 0.57$ accounting to 57.1% of its variance.

Goal orientation and self-efficacy influence reading performance among students with learning disabilities in Ibadan, Oyo State. Parents, special educators, teachers and school administrators should take cognisance of these factors to improve reading performance of students with learning disabilities.

Keywords: *Goal orientation, Self-efficacy, Reading comprehension, Student with learning disabilities*

Introduction

The ability to read effectively is essential to all learners including students with learning disabilities. It helps learners to communicate effectively, it enable them to participate in learning activities, choose profession and obtain success in academic pursuits and life endeavours. Developing good reading performance is required by every students to enable them interpret appropriately written text. Reading is a complex activity process which involves acquisitions of the meaning intended by the writer, it is interactive and an integral part in the language system which involves the reader's own contribution. It is an important activity in the life of an individual because it motivates the individual interest towards the achievement of more knowledge. It also affords the individual to derive pleasure and entertainment in sharing from the experience of others communicated through print or text materials. It is also a process by which printed words are assimilated, interpreted and transmitted into spoken words to understands the meaning and apply it on a daily basis.

The Interpretation Reading Association (2005) define reading as a complete system of deriving meaning from print that requires all the following: The development and maintenance of a motivation to read, the development of appropriate active strategies to contrast meaning from prints, Sufficient background information and vocabulary to foster reading comprehension, the ability to decode unfamiliar words, the ability to read fluently.

Reading difficulties are the most frequent learning problem among students and the main reason for academic failure (Chall, 1996; Dickinson and McCabe, 2001; Kuhn and Stahl, 2004; Rasinski and Hoffman, 2003). It lead to poor academic skills because those who suffer from them are unable to comprehend printed or written messages; however, pupils with reading difficulties are likely to perceive reading exercises as punishments. Literacy is found to be one of the strongest predictors of Reading performance. Children who struggle with reading early in life, generally continue to struggle with reading throughout their schooling. Therefore, it has negative effects on the students' academic performance, motivation and self-esteem (Hindin, 2009). In a study conducted in the US to examine academic achievement of



4th grade students, it was found that 34% of students had reading difficulties and their reading performance fell behind their peers (National Assessment of Educational Progress, 2007). Longitudinal studies have shown that reading problems of students with reading difficulties continue throughout the school years (Dickinson and McCabe). Students with reading difficulties are often diagnosed with learning disabilities (Miller, 1993; Stanford and Oakland, 2000).

Reading is a receptive skills like listening and vocalizing what was stimulated, it is also productive when it is done aloud. However, Grigg and Mann (2008) points to reading as an important study tool, and also sees it as an opportunity to create awareness as well as a useful tool for future employment and for recreational purposes. All this indicates the student's need to master reading ability and acquire reading efficiency because reading is the key to the various components of the school curriculum and also one's chosen vocation. In short, the ability in reading will empower the student to move ahead and contribute positively to educational success. Hermida's (2009), for example, believes that academic success is largely dependent on an individual's reading skill and goes on to add that with the need to handle lengthy assignments of various difficulty levels, it is crucial for the student to master the reading skill in order to succeed academically. The implication is that lack of reading skill will lead to an inability to understand information that is read and ultimately result in poor academic performance.

Research Conducted by (Lerner 1997, Eni-Olorunda 1998, Lazarus 2009, Adediran 2012, Irogbe 2012, and Bamigboye 2012) support the benefit of adopting unique instructional technique in solving poor reading performance such unique technique includes moulding and shaping, directed reading-thinking activity, collaborative strategic reading, individualised and audio-taped instructional strategy, extensive reading and comparative moderate reading, discrete trail and incidental teaching strategies and collaborative strategic reading (Lazarus, 2013). Most initial instructional technique used for enhancing reading performance involves studying phonics and supplementing sighted word techniques. Word recognition, in the opinion of Lerner (2006), consists of ability to recognise and pronounce words, this according to Rubin (1991) is crucial skills required for the development of reading performance. The twofold processes of word recognitions are the identification for easy pronunciation and the attachment of meaning to the correctly pronounced word.

Thus, two independent factors of importance in this study: Goal orientation and self-efficacy. Goal-orientation involves a series of process that include reflection of involvement in the task, realistic goal-setting, holding onto positive self-motivation, personality integration and autonomy throughout the process of goal achievement. From the extensive review of studies it has been observed that educators have found, understanding of goal orientation results in better achievement and it proved very effective in giving students greater freedom to reflect upon their goals, motivation and goal achievement in terms of their involvement, commitment. Goal



orientation helps students in achieving better success in academics as well in other fields (Kathleen, 2004). The goal orientation process help students to achieve success, increase self-esteem, confidence and ability. Studies shows that understanding goals from a cognitive perspective lead to self-efficacy, motivated learning ability, metal-cognitive learning strategies (Nicholes 1984). Goal orientation helps students become more aware of the need for achievement and strive to work, progress towards the goals set and achieve their goals finding solutions needed to meet future challenges (Duda, 1992). Goal theorists have proposed several types of goal orientations to explain the reason why individuals engage in achievement behaviours. One group of goal theorists conceptualized a dichotomous framework of goals whereby two major classes of goals were identified: learning and performance goals. Learning goals are goals individuals adopt to increase their competence, Individuals who adopt a learning goal orientation have, as their main objective, task mastery. In other words, they want to learn and master the task for learning's sake. Performance goals are goals to demonstrate competence or avoid demonstrating incompetence when engaging in a task. Individuals who adopt a performance goal orientation want to demonstrate their competence to others. Their main objective is to show others that they are competent; that is, they often adopt an external referent of comparison.

Research carried out in Nigeria by Samareh and Kezri (2016) investigated the relationship between goal orientation and academic engagement among university students. The findings showed that mastery goals orientation were significantly correlated with academic engagement. Similar results were also reported by Was and Beziat (2015). The researchers established that there was a positive and significant correlation between goal orientations and academic achievement. In both cases, the samples consisted of university students. The findings also confirm the importance of learning goal orientation in educational contexts. The descriptive analysis of learning goal orientations among the students who were involved in the current study indicated that majority of the students had performance goal orientation. Correlation analysis indicated that performance goal orientation has a weak predictive power on reading comprehension performance.

Another significant independent factor in this study is self-efficacy. The concept Self-efficacy refers to an individual's convictions to successfully execute a course of action required to obtain a desired outcome or goal (Bandura 1997).when people believe they can bring change in their lives they become more motivated to achieve their goals. Self-efficacy has been considered as an important factor that could influence the type of goals people set in academic, behavioural, or social settings. Schiefele, Schaffiner, Moller and Wigfield (2012) described reading self-efficacy as the degree of a student's expectation about his own achievement of a reading task. Thus, students who are confident in their reading skills expect high marks in examination. The opposite is true of those who lack confidence. This could be the reason why students who lack confidence in their reading envision low grade even



before they begin an examination or enrol in a reading task. For instance, if a student with learning disabilities believes that he is not a good reader due to his past performance in reading this can lead the students to lose interest in reading activities and reduce opportunities to master reading skills.

A research conducted by Komarraju and Nadler (2013) which is about self-efficacy belief and academic achievement. The subject of this study was divided into Study 1 which is 407 undergraduate students and for Study 2, 257 students. The result of the research was high self-efficacy students are confident in their academic achievement and they are likely to be sure that capability is fluid and defined by their effort in learning. The result also indicates that high self-efficacious students are choosing to take challenges and seek new knowledge such as trying to get good grades and demonstrate their ability by their performance at school. In contrast, low self-efficacious students are unconvinced and afraid about their capability to succeed in academic context, they assume that intelligence is fixed and unchangeable. They tend to be less motivated by other performance and do not intend to mastery goals. The result also showed self-efficacy took a part in academic achievement. Finally, their study showed that self-efficacy is also related to liven up students' motivation and self-discipline.

Yoğurtçu (2013) in his study emphasized the effect of self-efficacy beliefs towards reading comprehension on students' academic achievement. The subject of the research was 1485 students. The instrument used in this research is questionnaire. This study was about investigating the contribution of reading comprehension in increasing academic achievement. The result of the study was the same, students believe and readiness of the students' self-efficacy in their capability played important roles that affect academic achievement. In case of learning a foreign language, there is a positive relation between academic achievements in learning foreign languages and reading comprehension. If students' self-efficacy increases, their ability to learn foreign language will improve and as a result students can enhance their academic achievement. It means that self-efficacy also supports the development of the students' comprehension in learning foreign languages. Moreover, students will have self-confidence towards reading comprehension because of their belief in performing reading tasks.

In addition, (Klassen 2010; May and Stones, 2010; Reed, Kennet, Lewis and Lund-Lucas, 2011) explained that Students with learning disabilities often have lower self-efficacy beliefs in comparison with their peers without learning disabilities. This account for the general poor academic achievement which is widespread among students with learning disabilities. Some researchers have also found that a positive relationship exists between academic self-efficacy belief and equivalent academic progress (Klassen, 2010) and school completion (Gerber 2012). To sum up the previous research above, there is a high relationship among self-efficacy and learners reading performance. The higher students self-efficacy the better their reading



performance. In addition, it becomes the main point of students to be actively participating during the learning process. Teachers should give more attention to the students who have low self-efficacy and motivate them to contribute to the classroom discussion because low self-efficacious students need to be supported by their environment.

Purpose of the Study

The study investigated the influence of goal orientation and self-efficacy on reading performance among students with learning disabilities in Ibadan, Oyo State Nigeria. It also examined which of the two variables: (goal orientation and self-efficacy) on reading performance among students with learning disabilities.

Research Questions

Three Research questions were raised and tested at 0.05 level of significance.

1. What is the relationship between the independent variable (goal orientation and self-efficacy) and the dependent variable (reading performance) among students with learning disabilities in Ibadan, Oyo State?
2. What is the relative contribution of independent variables (goal orientation and self-efficacy) to the dependent variable (reading performance) among students with learning disabilities in Ibadan, Oyo State?
3. What is the joint contribution of the independent variable (goal orientation and self-efficacy) to the dependent variables (reading performance) among students with learning disabilities in Ibadan, Oyo State?

Methodology

The research design adopted in this study was a descriptive research design using the correlation type. This is a type of study which tests for relationship between variables. The study is interested in examining the influence of goal orientation and self-efficacy on reading performance among students with learning disabilities. The researchers were not interested in the manipulation of the variables of interest in the study.

Population of the study: The population of this study comprised students with learning disabilities in Ibadan, Oyo State.



Sample and sampling techniques: Two hundred students were included in this study. The multi-stage sampling procedure, which include total enumeration, purposive and simple random sampling technique.

Stage one: This stage involved the enumeration of the capital city by local government (Ibadan North, Akinyele, Ibadan North-West, Ibadan South-East, Ibadan South West).

Stage two: Simple random sampling techniques was used to select one school from each local government.

Stage three: purposive sampling techniques was adopted to select student with learning disabilities from one school in each local government, with forty students selected from each school and a total of two hundred students with learning disabilities for this study.

Instrumentation: The research instrument used for data collection in this study were the screening checklist for suspected learning disabilities, goal orientation scale, self-efficacy scale and Reading performance achievement test.

Screening Checklist for Suspected Learning Disabilities: The screening checklist for suspected learning disability was developed by Carol Herriot (2004) at University of Guelph, Ontario. The purpose of this instrument was to identify students with suspected learning disabilities. It is a 70 point questionnaire which has a 5 point scale with scoring ranging from “never”, “almost never”, “sometimes”, “often”, “all the time”. The scale is one of the most famous and widely used screening checklist for suspected learning disabilities with children and adolescent and it has been found to be reliable and valid. This has test reliability of 0.72

Goal Orientation Scale: This Goal orientation scales was adapted from workplace to school environment by (Tayfur, 2006). The goal orientation scale is used to measure three dimension of goal orientation. Learning goal orientation, Performance prove goal orientation and performance Avoid goal orientation. The internal consistency coefficient were reported as .85 for learning Goal orientation, .75 for performance goal orientation, .71 for performance Avoid goal orientation. The response scale has 5- point scale (1; strongly disagree, 2; Disagree, 3; Neither Agree nor Disagree, 4; Agree, 5; strongly agree)

Self-efficacy scale: The New general self-efficacy scale was developed by Chen, Gully, and Eden (2001). This scale was developed to measure individual’s perception of their ability to perform across a variety of different situation and provides a measure of self-efficacy that serves as an improvement to the original self-efficacy scale of 17 items created by Sherer, *et al.*, in 1982. The eight item measure scale assesses one’s belief that they can achieve their goals. The stability coefficient of the scale was revealed to be 0.87 through employing the test-retest method Using Cronbach’s alpha.



Reading Performance Achievement Test (RPAT): This test was used to determine the reading performance of the participants. The focus of this achievement test is to measure the performance of students with learning disabilities in reading. Therefore, the RPAT consisted of 20 question which covered Comprehension and vocabulary, the major component of reading. The first section, Section A of the reading test examined reading comprehension, the students were given comprehension passage, and this passage was adapted from a passage in English Language for senior secondary schools 2 by Augustine A. Agantien, titled Mary Slessor's Residence. Section B examined the vocabulary of the students.

Data Analysis

The data were analysed using two statistical tools namely: multiple regression analysis and Pearson's product moment correlation (PPMC). Multiple Regression was used to find out the joint and relative contributions of the two independent variables (goal orientation and self-efficacy) to the prediction of reading performance.

Result

Research question 1: What is the relationship between the independent variables (goal orientation and self-efficacy) and the dependent variable (reading performance)?

Table 1: PPMC showing the pattern of relationship between goal orientation, self-efficacy and reading performance

Variable	N	Mean	St-Dev	Df	R	p
Reading Performance	200	72.20	9.54	198		
Goal Orientation		55.18	8.55		.64**	<.05
Self-efficacy		29.13	3.47		.73****	<.05

** significant level at 0.01, * significant level at 0.05

Source: field survey

Table 1 reveals the relationship that exists between goal orientation, self-efficacy and reading performance; reading performance revealed a significant positive relationship with goal orientation ($r = 0.64$, $p < 0.05$) and also a significant relationship with self-efficacy ($r = .73$, $p < 0.05$). Thus it implies that there is a significant positive relationship between goal orientation, self-efficacy and reading performance. The implication of



this is that an increase in goal orientation and/or self-efficacy will lead to an increase in reading performance among students with learning disabilities and vice versa.

Research question 2: What is the relative contribution of independent variables (goal orientation and self-efficacy) to the dependent variable (reading performance)?

Table 2: Summary of regression for the relative contributions of goal orientation and self-efficacy to the prediction of reading performance

Models		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1.	(Constant)	11.54	3.79		3.05	.003
	GoalOrientation	.32	.070	.29	4.58	.000
	Self-efficacy	1.48	.17	.54	8.66	.000

Source: field survey

Table 2 shows that the two factors (goal orientation and self-efficacy) are potent predictors of reading performance among students with learning disabilities. The most potent factor was self-efficacy ($\beta = 0.54$, $t = 8.66$, $P < 0.05$) and followed by goal orientation ($\beta = 0.29$, $t = 4.58$, $P < 0.05$). This implies that self-efficacy and goal orientation increased the likelihood of reading performance by 86.6% and 45.8% respectively.

Research question 3: What is the joint contribution of independent variables (goal orientation and self-efficacy) to the dependent variable (reading performance) among students with learning disabilities?



Table 3: Summary of regression for the joint contribution of goal orientation and self-efficacy to the prediction of reading performance

R =.76						
R Square =.58						
Adjusted R square =.57						
Std. Error = 6.25						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10414.24	2	5207.12	133.51	.000 ^b
	Residual	7683.16	197	39.00		
	Total	18097.40	199			

Source: Field survey

Table 3 reveals the significant joint contribution of goal orientation and self-efficacy to the prediction of reading performance among students with learning disabilities. The result yielded a coefficient of multiple regression $R = 0.76$ and multiple R-square = 0.58. This suggests that the two factors when combined accounted for 57.1% ($Adj.R^2 = .57$) variance in the prediction of reading performance among students with reading disabilities. The other factors accounting for the remaining variance are beyond the scope of this study. The ANOVA result from the regression analysis shows that there was a significant effect of goal orientation and self-efficacy to the prediction of reading performance among students with learning disabilities, ($F_{(2, 197)} = 133.51$, $P < 0.05$)

Discussion of Findings

The findings of this study from research question one revealed there is a significant positive relationship between goal orientation and self-efficacy on reading performance. This correlates with the findings of Botsas and Padelladu (2019) who investigated the influence of goal orientation and the strategies used in reading comprehension among primary school pupils. The sample size consisted of 122 children who were in 5th and 6th grades. The goal orientation scale that was used to collect data focused on performance approach, performance avoidance and mastery goal orientations. Reading comprehension strategy was measured using a reading text of 172 words. The present findings also support the findings of research conducted by Ghonsooly (2012): students with high self-efficacy achieved higher scores in reading comprehension. Second, Naseri (2012) and Salehi and Khalaji (2014): there is strong positive correlation between reading self-efficacy belief and reading comprehension. As it was mentioned by (Bandura, 1997) learners “beliefs in their capabilities affect performance tremendously”. Besides, learners “beliefs can predict



performance better than their real” For the positive relationship between self-efficacy and goal orientation which was found in the present study, the finding agrees with that of Garcia and Pintrich's study (as cited in Hagen & Weinstein, 1995) in that possessing mastery goals was usually related to higher levels of self-efficacy and higher use of self-regulated learning stability.

The findings of research question two have revealed that two independent variables contributed differently to reading performance. In the study, the significantly potent contributor to reading performance is self-efficacy which is followed by goal orientation. This findings was supported by Botsas and Padelladu (2019), Ghonsooly (2012), Naseri (2012) and Salehi and Khalaji (2014) as reported earlier in the study.

The findings of research question three showed that when both predictor variables (goal orientation and self-efficacy) are taken together, they significantly predict reading performance. This implies that both goal orientation and self-efficacy influence reading performance among students with L.D. That is, even goal orientation plays some roles to influence R.D among students with L.D. although its contribution is not as much as that of self-efficacy. The findings agrees with Samareh and Kezri (2016) which investigated the relationship between goal orientation and academic engagement among university students and Komarraju and Nadler (2013) which investigated self-efficacy belief and academic achievement.

Conclusion

This study has revealed that Self-efficacy emerged as the most potent predictor of reading performance among students with learning disabilities, acting singularly or in a joint interaction with goal orientation. It allows the students to be actively involved in the learning process. If students show that they hold high self-efficacy, they learn to be motivated and confident in academic performance. The study also showed that there is a significant effect of goal orientation and self-efficacy to the prediction of reading performance among students with learning disabilities.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Educators should make use of goal orientation and self-efficacy to enhance reading performance among students with learning disability since the result reveals that there is joint contribution of the two variables on reading performance of students with learning disabilities.



2. Teachers, parents and all other stakeholders should train students on skills required to develop goal orientation and self-efficacy to enhance reading comprehension performance.
3. The study recommends that teachers should use diverse teaching methods that cater for the different learning goal orientations to improve reading comprehension performance.
4. Curriculum planners should utilize the findings of this study in curriculum planning and modification especially for students with learning disabilities during reading comprehension exercises.
5. Teachers and parent should work on how to build the self-efficacy of students with learning disabilities as this help the students to be motivated and have confidence in his/her ability to read.

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CHAPTER 31

EFFECTS OF SOCIAL MEDIA DISTRACTION AND ACADEMIC PROCRASTINATION ON THE ACADEMIC PERFORMANCE OF TERTIARY INSTITUTION STUDENTS IN NIGER STATE

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Abstract

The falling quality of graduates from Nigerian tertiary institutions is a matter of great concern to education administrators, parents, employers and the government. Hence it is important to investigate the causes as well as proffer solutions to the problem. The focus of this paper is to investigate the effects of social media distraction and academic procrastination on the academic performance of tertiary education students in Niger State. The study adopted the descriptive survey analysis method. A total of 500 students (consisting of 100 students each, from five tertiary institutions) were randomly selected across Niger State. Data was collected using a structured questionnaire designed based on the hybridization of the Academic Procrastination Scale (APS) and the Social Media Addiction Scale (SMAS). The questionnaire was validated using Cronbach Alpha with a value of 0.92. Three research hypotheses were formulated and tested at the 95% confidence level using linear and multiple regression analysis. Data was analysed using SPSS version 23. The findings of the study shows that there are significant effects and correlations between academic procrastination, social media distractions as well as academic procrastination and social media distractions (together) on students' academic performance. The paper concludes that tackling the problems of social media distractions and academic procrastination will improve the engagement of learners, quality of learning, hence the quality of graduates from tertiary institutions in Niger State. The paper suggests an investment in technology enhanced learning paradigms to give the learners a viable alternative to social media use. Furthermore, learning objects should be designed in such a way that learners will be excited to engage in learning rather than procrastinating because of 'fun' activities.



Keywords: Social media, Distractions, Academic procrastination, Academic Performance

Introduction

Learning is a constantly evolving concept which utilizes tools, devices, methodology and pedagogy, that aid the learning process. One of the trendy theories of learning is the connectivism theorem. Downes (2022) identifies connectivism as a set of connections between learning entities, such that a change in one entity leads to a change in another. Connectivism works by improving the learners as well as the learning process. Therefore, connectivism can be viewed as a paradigm shift in the learning process. Downes (2019) viewed connectivism as a teaching and learning trend which has given birth to the concept of virtual learning. This implies that connectivism utilizes technology, especially information and communications technology to aid education through the use of devices and software. Therefore, this has thrown more light on the impact of technology on education. According to Apostolidou (2022), connectivism education is network driven, digital and situated, which tends to over shadow the face-to-face learning approach. Social media is established as a form of connectivism. Hence, it has both positive and negative sides.

The impacts of technology on education have led to several paradigm shifts in the delivery, and management of education. These paradigm shifts though healthy, may also pose some challenges to learning. Studies have identified some of these paradigm shifts to include, artificial intelligence in education, online learning (propelled by the COVID-19 pandemic), Zoom based learning, social media platforms in education, among others. (Guan, Mou, and Jiang, 2020; Ghosh, Khatun and Khanam 2023). Furthermore, employing social media applications for instructional activities has become a paradigm shift. Therefore, the increasing use of social media applications specifically for educational purpose has necessitated the need for studies on the effects of social media in education. Emerick, *et. al.*, (2019) submitted that social media in tertiary institutions classrooms can substantially enhance learning: facilitating teacher-student and student-to-student communication; providing access to information using the internet; and promoting collaborative and responsive learning in many forms. However, the excessive, unwise, or inconsiderate use of social media in the classroom can become a distraction for the learners. Furthermore, according to Dontre (2021), the detrimental effects of academic distraction have become increasingly problematic in recent years due to students' use of social media. Studying the distractive influence of laptops, smartphones and Facebook, the author reported that Facebook had larger distractions than laptops and smartphones.

Academic procrastination is the failure to complete academic tasks within the expected time frame. It is a common problem among students and can lead to poor academic achievement and increased stress. Procrastination can be caused by a variety of factors, including a lack of motivation, anxiety, and the overwhelming nature of



academic tasks. Procrastination is not solely a matter of poor time management skills, but can be traced to underlying psychological reasons. Studies have shown that 80% to 95% of college students procrastinate on a regular basis, particularly when it comes to completing assignments and coursework. Academic procrastination is an important concept in education, especially at the tertiary level. Fentaw, *et .al* (2022) corroborated this assertion and examined the prevalence, reasons, areas, and effects of academic procrastination in selected higher education institutions. The study found that more than 80% of students frequently engaged in academic procrastination, particularly presentation, studying for examinations, followed by library work, writing activities, and the least to group work. Therefore, there is a high prevalence of academic procrastination among tertiary institution students.

Tertiary education students face various challenges, including balancing academic work, social life, and personal responsibilities. The increasing use of social media has become a significant concern as it may have negative effects on students' academic performance. Social media can distract students from their academic work, and they may tend to procrastinate instead of studying. Procrastination, on the other hand, may negatively affect students' academic performance as it reduces the time available for studying and completing assignments. Therefore, this study aims to examine the effects of social media distraction and academic procrastination on the academic performance of tertiary education students. The study will examine the effect of social media distraction (alone) on academic performance, the effect of academic procrastination (alone) on academic performance. Furthermore, the study will examine the combined effects of social media distraction and academic procrastination on the academic performance of tertiary education students in Niger State.

Literature Review

There are existing studies on the effects of social media and academic procrastination on the academic performance of tertiary institution students. Various results have shown the significant relationships between the variables identified. Anierobi *et.al.* (2021) found that most students get carried away and distracted from properly using social media for academic purposes. Furthermore, the ownership of smartphones, instigated academic procrastinations of the students. This had a negative correlation with the academic performance of the students. Furthermore, Caratiqui and Caratiqui (2023) found that there is a positive and significant relationship between social media addiction and academic procrastination. There is also a negative and significant relationship between academic procrastination and learners' academic achievement. Therefore, this indicates that academic procrastination substantially impacts the strength of the correlation between social media addiction and academic achievement.

In their study, Hong *et.al.* (2021) found that academic procrastination precedes problematic phone use which leads to social media distractions. Hence, there is a



positive correlation between academic procrastination and social media distractions. This leads to the submission that social media distractions and academic procrastination have a negative and significant relationship with students' academic achievements. Similarly, Suarez-Perdomo, *et. al.* (2022) found that social media networks are a source of distraction in personal, academic, and professional tasks. In the tertiary institutions' context, they can lead to academic procrastination behaviour and undermine students' academic performance. Their study found that the higher the level of addiction to social media, the higher the level of academic procrastination. However, no matter the level of social media distraction and academic procrastination, there were no significant difference in academic performance, as all the categories of respondents had negative correlation in academic performance.

According to Serrano, *et. al.* (2022) Excessive social media use is a growing concern among educators. Linear regression analysis on their dataset showed that problematic social media use significantly predicts academic procrastination. Moreover, the association between problematic social media use and academic procrastination was better explained through mindfulness within academic environments. Hence, social media distraction and academic procrastination significantly, negatively affected the academic performance of the undergraduates. In the same vein, Iftikhar *et.al.* (2022) reported that 67% of the undergraduates had social media distraction. The social media distraction also caused academic procrastination. Hence, there is a positive correlation between social media distraction and academic procrastination. The academic procrastination of the undergraduates negatively affected their academic performance.

Methodology

This study adopted the survey research approach. Though the data was collected as a qualitative data, the collected data were transformed into quantitative data by coding in SPSS 23. A questionnaire was designed based on a 4-point Likert Scale and deployed via the google forms platform. The Likert Scale responses were 'Strongly disagree', 'Disagree', 'Agree' and 'Strongly agree' this were weighted as 1 point, 2 points, 3 points and 4 points respectively. The Cumulative Grade Point Average (CGPA) of the respondents was dependent variable, while social media distractions and academic procrastination, were the independent variables.

The study was guided by 3 null hypotheses as follows;

- i. There is no significant effect of social media distraction on the academic performance of tertiary institution students in Niger State.
- ii. There is no significant effect of academic procrastination on the academic performance of tertiary institution students in Niger State.



- iii. There is no significant effect of social media distraction and academic procrastination on the academic performance of tertiary institution students in Niger State

Results

Table 1: Results from testing of Hypothesis 1: There is no significant effect of social media distraction on the academic performance of tertiary institution students in Niger State.

Dependent Variable (Correlation)	R	R ² (Regression)	Sig ^c
Academic Performance	-0.24 ^a	0.42	0.04 ^b

a. Predictors: (Constant), Social Media Distraction

b. significant at 0.05

c. Value obtained from the ANOVA results

Table 1 shows that there is a negative relationship between social media distractions and academic performance. This implies that an increase in one, leads to a decrease in the other. The value 0.24 shows that there is a low correlation between social media distraction and academic performance. The value of $R^2 = 0.42$ shows that social media distraction is able to explain 42% of the changes in academic performance of the respondents. Furthermore, the significance value $p = 0.04$ is less than 0.05, hence the effect of social media distraction is on academic performance is significant at the 95% confidence level.

Table 2: Results from testing of Hypothesis 2: (There is no significant effect of academic procrastination on the academic performance of tertiary institution students in Niger State.

Dependent Variable (Correlation)	R	R ² (Regression)	Sig ^c
Academic Performance	-0.72 ^a	0.78	0.00 ^b

a. Predictors: (Constant), Academic procrastination

b. significant at 0.05

c. Value obtained from the ANOVA results

Table 2 shows that there is a negative relationship between academic procrastination and academic performance. This implies that an increase in one, leads to a decrease



in the other. The value 0.72 shows that there is a high correlation between social media distraction and academic performance. The value of $R^2 = 0.78$ shows that academic procrastination can predict 78% of the changes in academic performance of the respondents. Furthermore, the significance value $p = 0.00$ is less than 0.05, hence the effect of academic procrastination on academic performance is significant at the 95% confidence level.

Table 3: Results from testing of Hypothesis 3: (There is no significant effect of social media distraction and academic procrastination on the academic performance of tertiary institution students in Niger State)

Dependent Variable (Correlation)	R	R ² (Regression)	Sig ^c
Academic Performance	-0.56 ^a	0.64	0.02 ^b

a Predictors: (Constant), Social Media Distraction, Academic procrastination

b significant at 0.05

c Value obtained from the ANOVA results

Table 3 shows that there is a negative relationship between academic procrastination and social media distraction and academic performance. The two independent variables together have a collective relationship on the academic performance of the students in a way that an increase in independent variables, leads to a decrease in the dependent variables or the other way round. The value 0.56 shows that there is a high correlation between social media distraction and academic procrastination on academic performance. The value of $R^2 = 0.64$ shows that academic procrastination and social media distraction can predict 64% of the changes in academic performance of the respondents. Furthermore, the significance value $p = 0.02$ is less than 0.05, hence the effect of academic procrastination on academic performance is significant at the 95% confidence level.

Discussion

The present study was aimed at studying the effect of social media distraction and academic procrastination on the academic performance of tertiary institution students in Niger State. This is because of an attempt to identify and proffer solutions to the problems of falling standard of education in Niger State. This study used data collected from the study area in order to domesticate the findings toward solving the targeted problem.



It was hypothesized that there is no effect of social media distraction on academic performance of the students. The present study did not support this hypothesis. The study found that there is a significant effect of social media distraction on academic performance of tertiary institution students in Niger State. Therefore, the null hypothesis is rejected. This finding is supported by (Anierobi et.al. 2021; Suarez-Perdomo, *et al.*, 2022)

The second hypothesis is that, there is no significant effect of academic procrastination on the academic performance of tertiary institution students in Niger State. The present study found on the contrary, that there is a negative and significant effect of academic procrastination on the academic performance of tertiary institution students in Niger State. Table 2 has shows that there is a negative relationship between academic procrastination and academic performance of students. This simply means that as academic procrastination increases, the academic performance decreases. Therefore, academic procrastination has a negative effect on academic performance, hence it can be reported as one of the problems of education in Niger State. This finding is corroborated by Caratiqui and Caratiqui (2023).

The third hypothesis was that, there is no significant effect of social media distraction and academic procrastination on the academic performance of tertiary institution students in Niger State. This study found that the combination of the two independent variables had a negative and significant effect of the academic performance of the students. Table 3 shows that the effects of the two independent variables together predicted 64% of the academic performance of the students. This finding is in agreement with the findings of (Serrano, 2022; Iftikhar, *et. al.* 2022).

Conclusion

Academic procrastination and social media distraction have been identified as serious issues in learning. They issues affects the lives of students' self-efficacy, attitude and academic performance. This study found that as academic procrastination increases, the academic performance of students decreases. Hence, there is need for students to work harder to avoid it. The growth in technology use among tertiary education students has made it necessary to study the influence of social media distractions on students' academic performance. This study found that social media distraction, academic procrastination and the combination of the two poses a new challenge for the academic performance of tertiary institution students in Niger State. Therefore, adequately tackling these issues will improve the engagement of learners, quality of learning and the quality of graduates from tertiary institutions in Niger State. Further studies can be carried out to refine the findings through finding the differences of the social media distraction and academic procrastination based on gender, type of tertiary institution and type of tertiary institutions.



Recommendations

Based on the findings of this study, the researchers wish to recommend that;

1. The Niger State government should invest research and development in the area of new technology enhanced learning paradigms to give the learners a viable alternative to social media use. Through proper funding of the research institutions and well as the research and development units of the Ministry of Education.
2. The tertiary institutions in Niger State should encourage teachers to develop learning objects, which should be designed in such a way that learners will be excited to engage in learning rather than procrastinating because of 'fun' activities.
3. The tertiary institutions should make online, virtual learning more productive by establishing cloud meeting ethics for both the teachers and learners.
4. The tertiary institutions in Niger State should reduce social media distractions and academic procrastination of the students by designing workable solutions that will address the two issues in their tertiary institutions.
5. The Niger State government should increase the integration of technology in learning, through improved funding of education.

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CHAPTER 32

SELF-ESTEEM AND QUANTITATIVE ABILITY AS CORRELATES OF STUDENTS' ACHIEVEMENT IN STOICHIOMETRY IN CHEMISTRY IN EGBEDA, OYO STATE

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Abstract

Stoichiometry in chemistry is an important aspect of secondary school chemistry and is often seen, as complex. It spans across many chemistry topics where calculations and numerical problems, constitute the greater part of the content. Stoichiometry is dominant in physical and organic chemistry. It is therefore necessary to consider the competences of the students faced with learning stoichiometry. This study determined the connections among students' self-esteem, quantitative ability and their achievement in stoichiometry in chemistry.

This study adopted the descriptive survey research design of the correlation type. Using simple random sampling technique, a total of 300 students were selected from a population of SSS II chemistry students in ten (10) government-owned secondary schools in Egbeda Local Government Area, Oyo State. Three (3) validated research instruments were used to collect data. They include Students' Self-esteem Questionnaire ($r = 0.85$), Quantitative Ability Test ($r = 0.79$) and Stoichiometry Achievement Test ($r = 0.76$).

Data was analysed using descriptive statistics, Pearson Product Moment Correlation and Multiple Regression analysis at the 0.05 level of significance. The findings of the study indicate that the level of students' self-esteem is moderate ($\bar{x} = 2.63$) while the level of students' quantitative ability is low (32%). There is a positive, weak non-significant relationship between self-esteem and students' achievement in chemistry ($r = 0.05$, $p > 0.05$) while a positive, moderate significant relationship exists between quantitative ability and students' achievement in Stoichiometry ($R = 0.45$, $p < 0.05$). Also, the two independent variables jointly and significantly predicted students' achievement in Stoichiometry ($F_{(2,146)} = 19.01$; $AdjR^2 = 0.20$; $p < 0.05$) but



quantitative ability ($\beta=0.45$) is the only independent variable that contributed to students' achievement in chemistry.

Based on these findings, it was inferred that students' quantitative ability is essential for maximum performance in Stoichiometry and chemistry in general. This presents implications for the teaching and learning of chemistry.

Keywords: *Students' self-esteem, Quantitative ability, Students' achievement in Stoichiometry, Chemistry*

Introduction

Chemistry is a physical science that studies the properties, nature of atoms, their interactions and the changes they undergo. Chemistry is an incredibly fascinating field of study because it is so fundamental to our world. It plays a role in everyone's life and touches almost every aspect of human existences. Chemistry is one of the essential science subjects which not only equips learners with the fundamental scientific skills needed to understand physical phenomena but also prepares them to thrive maximally in science-related careers. Therefore, it is offered in the Nigerian secondary school curriculum including the senior secondary schools in Egbeda Local Government Area in Oyo State. Some of the topics taught in senior secondary schools include atomic structure, IUPAC nomenclature, ionization, chemical kinetics, redox reaction, isomerism, quantum numbers, enthalpy, mole concepts, separation techniques, elements, mixtures and compounds among others. A credit pass in the senior secondary certificate examination is required to get admission into almost all basic and applied science discipline in tertiary institutions.

Research also shows that one of the challenges encountered by chemistry students can be attributed to poor problem-solving in stoichiometry (Opara, 2013; Udosoro, 2011; Badru, 2004). This is corroborated by the West Africa Examinations Council (WAEC) Chief Examiner's report which stated that students' have weaknesses in chemical arithmetic, poor mathematical skills and inability to determine mole ratio from stoichiometric equations (2007-2017). Stoichiometry is at the center of chemistry as it refers to the relationship between the measured quantities in a chemical reaction as well as the calculation which include the assumption of the law of conservation of matter and energy. Stoichiometry involves the mole concepts and the balancing of chemical equations analyzing the relationship between the number of reactants and products. Stoichiometry determining the amount of the substance in a reaction consists of mathematical procedures and understanding it requires problem-solving and high-level thinking skills (Vula and Berisha, 2022). The concept stipulates that the number of atoms or molecules involved in chemical reactions be converted into measured quantities expressible in convenient units. In order to use stoichiometry to do calculations about chemical reactions, it is essential



to understand the relationships that exist between products and reactants and why they exist, which require understanding how to balance reaction (Hafsah, Rosnani, Zurida, Kamaruzaman and Yin, 2014).

Stoichiometry is at the core of most concepts in chemistry which many students perceive as difficult ; such as mole concept, symbols, formulae and equations, chemical equations, quantitative analysis (Uzezi, Ezekiel, and Auwal, 2017, Kyado, Achor, and Adah, 2021). Perhaps due to the fact that it requires a number of individual skills such as problem solving strategy. Generally, a solid foundation in stoichiometry is necessary for understanding quantitative deductions in almost every aspect of chemistry. Despite the relevance of stoichiometry, studies have shown that learners find stoichiometric calculations difficult (Evas, Yaron, and Leinhardt, 2008). The difficulties encountered by chemistry students as they solve stoichiometric problems are lack of understanding of the mole concepts, inability to balance chemical equations, use of inconsistent stoichiometric relationships, identifying the limiting reagent, determination of theoretical yields and identification of substances in excess. Generally, there are a myriad of factors which can affect a student's performance in chemistry. Such include the teacher factors, societal factors, infrastructural problems, language problem, curriculum-related variables, textbook-related variables and those associated with the student (Nweze and Uzochukwu, 2019). One of the student factors is Self Esteem.

It refers to one's sense of general competence and includes intellectual ability, school performance, self-regulatory capacities, self-confidence, efficacy, and agency. The increase of self-esteem increases academic achievement, and at the same time the increase of academic achievement increases self-esteem (Baumeister, Campbell, Krueger, and Vohs, 2003). Self-esteem enables students to handle setbacks with ease. Instead of being crippled by failure, resilient students get up quickly, learn from their mistakes, and try again. It is generally assumed that having high self-esteem is very important. (Erol and Orth, 2011) shows how important it was to study adolescents' levels of self-esteem; students with low self-esteem struggle with problems they face in school, either academically or socially.

A student's self-esteem involves a variety of beliefs about the self, such as appraisal of one's own appearance, beliefs, emotions and behaviors. Most secondary school students are within the adolescence bracket 12-20 years, and this been a period of storm and stress, levels of self-esteem will likely vary from time to time. Many adolescents struggle within themselves and the level of their academic attainments. Self-esteem and academic achievement seem to be most highly related between the years of about seven to fifteen (Malbi and Reasoner, 2000). Those who feel confident, generally achieve more, while those who lack confidence in themselves achieve less.

Topçu and Leana-Taşçılar (2018) observed that there were significant correlations between self-esteem, motivation and achievement. According to Aryana (2010) students with high self-esteem may academically achieve higher or more, since



they tend to have more confident, while students with low self-esteem lack confidence in them and may achieve less academically. Low self-esteem students do not involve themselves with anything that may expose their weakness or incompetence to others, so because of that and to avoid been called one thing or the other among their peers in class, they do not show or have interest in academic activities.

Another important factor that may influences student's achievement in stoichiometry in chemistry is quantitative ability. Quantitative ability tests the ability of a candidate to handle numerical data and solve numerical problems. It tests the ability of students to analyse and understand the problem rather than cramming. Students' success in stoichiometry problem solving depends mainly on their understanding of the concept of mole and conceptual understanding of the problems. The challenge of enhancing students' performance in solving stoichiometry problems is a daunting tasks as many teacher resorts to just teaching how to solve stoichiometry problems algorithmically. Adigwe (2013), in his study examined relationship between mathematics skills and achievement in chemical Stoichiometry and discovered that the entering mathematics skills possessed by the students significantly influenced their achievement in chemical stoichiometry.

Research Questions

1. What is the level of students' self-esteem?
2. What is the level of students' quantitative ability?
3. What is the relationship between students' self-esteem, quantitative ability and achievement in Stoichiometry?
4. What is the joint contribution of students' self-esteem and quantitative ability to students' achievement in stoichiometry?
5. What are the relative contributions of students' self-esteem and quantitative ability to students' achievement in stoichiometry?

Methodology

This study adopted the descriptive survey design. It investigated the predictive effect of students' self-esteem and quantitative ability on their achievement in stoichiometry in chemistry in senior secondary schools. The population comprised all senior secondary school (SSS II) students who offer Chemistry in Egbeda, Oyo State. This involved the chemistry students in government-owned secondary schools that are situated in Egbeda, Oyo State. The Oyo State Teaching Service Commission (TESCOM) Zone 3, comprises of three local government areas, which are Egbeda, OnaAra and Oluyole. Simple random sampling technique was used to select ten public



senior secondary schools from Egbeda Local Government Area. Egbeda Local Government Area consists of twenty mini-metropolises of which each of them has at least a senior secondary school. In each of the 10 chosen schools, a class of SSII Chemistry students (with an average of 30 Chemistry students in a class) was sampled as respondents in the study. A total of three hundred (300) chemistry students in ten senior secondary schools of Egbeda LGA participated in the study.

Three validated research instruments were developed and used for data collection in the study. They include:

- i. Student's Achievement in Stoichiometry Test (SAST),
- ii. Student's Self -Esteem Questionnaire (SSEQ)
- iii. Quantitative Ability Test (QAT)

Data were collected from the respondents in these schools. Four research assistants were engaged and trained in administering the research instruments in these schools. The period of data collection spanned three weeks. The instruments were retrieved and collated.

Data collected were analyzed using PPMC and multiple regression analysis. Hypotheses were tested at 0.05 level of significance.

Results

Research question 1: What is the level of students' self-esteem?

Table 1: Students' self-esteem

S/N	Statement	Mean	STD.D
1	I generally feel anxious in new social situations where I may not know what is expected of me.	2.64	1.16
2	I have difficulty in knowing whom to trust and when to trust.	2.41	1.15
3	I am afraid of making mistakes which others might see.	2.43	1.16
4	I find it difficult to hear criticism about myself.	2.04	0.86
5	I think others are very critical of what I say and do.	2.94	0.99
6	I am easily embarrassed.	2.71	1.08
7	I am very concerned about my appearance.	2.75	1.01
8	I often feel like I do not know the right thing to do or say.	3.07	0.90



9	I find it difficult to accept who I am.	2.75	0.98
10	I have really high standards for myself and others.	2.75	0.97
11	I feel uncomfortable around successful people.	3.29	0.89
12	I am anxious and fearful most of the time.	2.75	1.02
13	When someone mistreats me I think that I must have done something to deserve it.	2.38	0.91
14	I am very critical of myself and others.	2.21	1.03
15	I tend to magnify my mistakes and minimize my successes.	2.61	1.21
16	I often feel depressed about things I have said and done, or things I failed to say or do.	2.59	1.10
17	I have avoided making changes in my life because I was fearful of making a mistake or failing.	2.51	0.87
18	I try to avoid conflict and confrontation.	2.01	1.03
19	I have been told that I am too sensitive	2.69	1.04
20	I am happy with myself as a person.	2.75	0.99
21	I feel good about how much my friends like my ideas	2.86	1.08
Weighted mean = 2.63			
Criterion mean = 2.50			

Table 1 reveals weighted mean of 2.63, out of maximum obtainable score of 4.00, which is higher than the threshold mean of 2.50. This means that the students have moderately high self-esteem.

Research Question 2: What is the level of students' quantitative ability?

Table 2: Frequency table for students' quantitative ability

Score Level	Frequency	Percentage
0-10	204	67.8
11-20	76	32.2

Table 2 shows that a good fraction of the students scored below half the possible highest score in the quantitative ability test. 204 students (67.8%) obtained scores



within 0-10marks while only 76 (32.2) of them scored marks between 11 and 20 marks. It can be inferred that the level of students' quantitative ability is low.

Research Question 3: What is the relationship between students' self-esteem, quantitative ability and achievement in Stoichiometry?

Table 3: Correlation Matrix showing the relationship between the independent variables and students' achievement in stoichiometry chemistry

Variables	Achievement	Self-esteem	Quantitative ability
Achievement	1		
Self-esteem	0.054 0.517	1	
Quantitative ability	0.452* 0.000	0.002 0.984	1
Mean	10.20	51.19	11.89
STD.D	4.11	4.84	3.35

* denotes significant at $p < 0.05$ level of significant

Table 3 reveals that a positive, weak non-significant relationship existed between self-esteem ($r = 0.05$; $p > 0.05$) and students' achievement in chemistry. This indicates that students' self-esteem is not related to their achievement in chemistry. The table further revealed that positive, moderate significant relationship existed between quantitative ability ($r = 0.45$; $p < 0.05$) and students' achievement in chemistry. This implies that students' achievement in chemistry is significantly related to their quantitative ability. It could be inferred from the result that for the students' achievement in chemistry to improve, their quantitative ability needs to be considered in order to have corresponding improvement in students' achievement in chemistry.

Research question 4: What is the joint contribution of students' self-esteem and quantitative ability to students' achievement in stoichiometry?



Table 4: Multiple Regression Analysis showing the joint contribution of independent variables to students' achievement in stoichiometry

Sources of Variance	Sum of Squares	Df	Mean Square	F	Significant
Regression	516.879	2	258.440	19.014*	0.000
Residual	1984.477	146	13.592		
Total	2501.356	148			

R = 0.455
R Square = 0.207
Adjusted R Square = 0.196
Std. Error of the Estimate = 3.68677

* denotes significant at $p < 0.05$ level of significance

Table 4 shows that the joint contribution students' self-esteem and quantitative ability to students' achievement in stoichiometry was significant ($F_{(2, 146)} = 19.01$; $\text{Adj } R^2 = 0.20$; $p < 0.05$). This implies that when students' self-esteem and quantitative ability were taken together, they jointly contribute to students' achievement in stoichiometry. Table 3 showed a multiple regression coefficient ($R = 0.46$), this means that students' self-esteem and quantitative ability have a positive, moderate significant relationship with students' achievement in stoichiometry. Table 4 further revealed a multiple regression adjusted ($R^2 = 0.20$). This means that 20.0% variation in students' achievement in stoichiometry is accounted for by the joint contribution of the independent variables while the remaining 80.0% may be due to other factors and residuals not under investigation in this model.

Research question 5: What are the relative contributions of students' self-esteem and quantitative ability to students' achievement in stoichiometry?

Table 5: Multiple Regression Analysis showing relative contribution of independent variables to students' achievement in stoichiometry

Model	Unstandardized Coefficients		Standardized Coefficient	Rank	t	Sig.
	Beta	Std. Error	Beta (β)			
(Constant)	1.312	3.393			0.387	0.700
Self-esteem	0.045	0.063	0.053		0.716	0.475
Quantitative ability	0.554	0.090	0.451	1 st	6.124	0.000*



Table 5 showed that the relative contribution of students' self-esteem ($\beta = 0.05$; $t = 0.72$; $p > 0.05$) to students' achievement in stoichiometry was not significant. However, that of quantitative ability was significant ($\beta = 0.45$; $t = 6.12$; $p < 0.05$). This indicates that students' quantitative ability is the only independent variable that contributed to students' achievement in stoichiometry.

Discussions

The result of this finding indicates that students have moderate self-esteem. This is similar to the result obtained by Farid and Akhtar (2013). In this study, it appeared that students also answered the questions in conformity with social acceptance. This might be because the students hold a small degree of belief in their potentials, especially since they are meant to be the 'revered science students'. Self-esteem is basically one's idea of themselves and is said to be affective in nature. This study also revealed that students' quantitative ability is generally low. It is not strange that many students have problems with numbers, calculations and solving problems. Perhaps, most of the students did not choose to do chemistry based on their capacities but based on some extrinsic factors. Students who have chosen to study chemistry are often not properly counseled and tested to ascertain their natural tendencies and abilities.

The positive, weak non-significant relationship which exists between self-esteem and students' achievement in chemistry may be due to the notion which some students hold about their abilities to tackle problems. This indicates that students' self-esteem is not related to their achievement in chemistry. This finding is contrary to that of Topçu and Leana-Taşçılar (2018) who observed in their study that there is a significant relationship between self-esteem and academic achievement, as well as that of Aryana (2010) who reported that students with high self-esteem may academically achieve higher or more.

Furthermore, students with high quantitative ability had the highest achievement in Stoichiometry test while those with low quantitative ability had the least achievement. The observed differences in the students' mean scores are statistically significant. Thus, students' quantitative ability has a significant and positive effect on students' achievement in stoichiometry in chemistry, due to its numerical nature. So this finding is similar to that of Adigwe (2013) who posited mathematics skills possessed by the students significantly influenced their achievement in chemical stoichiometry.

Conclusion and Recommendations

It is concluded that when students' self-esteem and quantitative ability are adequate, their achievement in stoichiometry is likely to be satisfactory. However, quantitative



ability has more connections with students' achievement in stoichiometry in chemistry. It is therefore, recommended that stakeholders in chemistry education should not relent in their efforts towards improving learning outcomes of secondary school students. Also, chemistry teachers should encourage students to improve their quantitative abilities and self-esteem by providing opportunities for practice and creating avenues for them to develop healthy beliefs in their capacities.

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CHAPTER 33

ATTITUDE AND USE OF STORYBOOKS AMONGST PRIMARY SCHOOL CHILDREN IN NIGERIA

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Abstract

Children are meant to be nurtured with the basic rudiments of literacy using diverse approaches of writing, reading, listening and speaking, using books, objects, verbal and oral instructions, visual practice and all. From society to society all over the world, stories are part of life and living, however, printed stories in the form of storybooks have been put together to form a threshold for formal education, instruction and amusement for children. Storybooks are one of the tools for introducing children to literacy and therefore, attitudes whether negative or positive amongst children begins from their early stages in the life. Developing the right kind of attitude is important so as to endear the effective use or reading of storybooks amongst school children. It is observed that academic performance amongst school children in Nigeria has been poor and which has been linked to decline in readership and effective use of storybooks.

Keywords: *Storybooks, Use, Reading, Attitude, School children*

Introduction

Primary school education is the first basic form of education that sets the foundation of a child's educational strengths or weakness. At the primary school level children are meant to be nurtured with the basic rudiments of literacy using diverse approaches of writing, reading, listening and speaking using books, objects, verbal and oral instructions, visual practice and all. Primary education is the sort of education offered



to children between aged 6-11 years of life; this sort of education is offered by schools to prepare the foundations to other forms of formal and informal education and literacy prospects for the children in the near future. Dibal (2010) stresses that since the rest of the education system is built upon it; the primary level is the key to the success or failure of the whole national educational system. In other words, the primary education is the first tier of the 6-3-3-4 educational system, which is for six year's duration in Nigeria. According to Adepoju (1998), primary education is the type of education which is exposed to children in primary institutions, where the child acquires fundamental knowledge, skills, thought, feelings and actions which are considered necessary for all citizens, regardless of social status, vocation or sex.

The state of academic performance amongst school children in Nigeria indicates that something fundamental is at loss in the educational system beginning from the foundations of the educational system which is the primary school. When the educational level and performance of children become poor, the indication could be linked to the foundations of the programme. In Nigeria, one of the problems bedeviling primary school education is poor literacy amongst pupils – especially those at the public schools despite being within the fore walls of a classroom and school environment. It is the experience that most primary school pupils enrolled in public primary schools does not have proficiency in the reading and writing ability; they are unable to use the basic tools of learning: books, writing materials and other sundry accessories for basic education. Oyetunde, *et.al*, (2016) highlights that only about 33% of Nigerians within the ages 6 - 14 are literate, likewise Nkwocha (2011), posit that children who attend public primary school rarely get the privilege of time and interest to handle reading materials when at home. It is worthy to note that reading is a very complex activity which requires interest to pull through the processes of literacy skills, including oral language skills, sight word recognition, decoding skills and comprehension strategies among many others (Murtala, Babangida, Usman and Auwalu, 2013). There has been proof that early literacy development helps and promotes children's attitude towards sustaining excellence even as adults however, there are aspects of approach needed in the development of children's early literacy. First, children begin to learn to read very early in life through story listening and recounting then a strong foundation in spoken words through objectifying and mentioning items in books (Korb, 2010). The absence of these in the early life of children could jeopardise their attitude towards storybooks and its use. Again, there could be likelihood that Nigerian teachers have deployed stale methods of teaching and effective use of books and approach to literacy especially amongst teachers and pupils of public primary schools.

It could also be that the practice of listening to told stories from infancy was not introduced coupled with the absence of free pre-primary education by government where children are first introduced to storybooks, story hours and folk plays which prepares their mental state in to embracing primary education and all it has to offer -



enlightenment, vocabulary development, speech therapy, interest development, reading proficiency, etc. the introduction of stories and storybooks to children at their formative stage of life helps in the mental preparation of interests in literacy. Mello (2001) reiterates that there is power in storybooks and stories in whatever format it is presented, especially to children.

From society to society all over the world, stories are part of life and living. Stories are narratives and accounts of events and activities of a people, race, culture, practices, which took place in the past, and possibly have remained in the present and could change in the future. Stories attempt sometimes to explain reasons why certain events and practices are the way they are or sometimes to foretell what the future could hold. Some stories are sometimes created from figments of imaginative scenes of an event or activities involving animate or inanimate things for the purposes of recreation and information. These events and activities are recounted for records purposes, historical preservation, education and enlightenment and for general recreation.

Stories however, are one of children's forms of informal education. Children get introduced to stories through oral narratives by adults around them. Stories are one of the ways by which children are instructed on values, norms and practices of the society. These stories over time form folk narratives that as time changes, they get retold and recounted in to different formats and medium such as audio, print, and visual. Experience has shown that children are easily captivated by stories of both animate and inanimate things. For children, stories are the easiest form of getting them educated, informed, enlightened and instructed especially as they learn about consequences of errors, and failures from recounted stories. Chikamadu, Onwuta and Iwe (2022) corroborates the fact that children love stories; they further posit that stories create in children the magic and a sense of amusement especially as the language of narration could be more magical to their ears and mind.

Printed stories in the form of storybooks have been put together to form a threshold for formal education, children are made to read those stories told to them from infancy in books to create in them very easily the passion for reading and learning. Storybooks in primary education especially for children aged 6-11 years plays a key role in the formation of their academic outlook, reading habit, knowledge and literacy in general. Some researchers like Mello (2001); Aramide (2015); Adeyeye (2019); Mba (2022), and Chikamadu, Onwuta and Iwe (2022) asserts that stories read by children increases their feelings as well as their proficiency in the use of language and promotes character formation. On the other hand, Chikamadu, Onwuta and Iwe (2022) insist that reading of storybooks develops literacy interests and the fast learning of the English language as a second language in Nigeria.

Chikamadu, Onwuta and Iwe (2022) insists that attitude towards storybooks are critical in engendering the actual use of storybooks among children. This is based on the fact that children's positive attitude towards storybooks can be the force that



propels them towards storybooks and other forms of reading materials. Attitude is the tendency of an individual to respond to stimuli; it is an influencer of mood, it involves the acceptance, or rejection of certain ideas, practices, or beliefs. Attitude can be seen as learned behaviours, perceptions and habits that predisposes someone to respond to something, whether is a phenomenon, an idea, an object, a person or even situation. Attitudes are feelings or stimulants which could be negative or positive and which drives the interest of the child to either accept or reject ideas, activities and notions. Attitude can be a drive for or against a thing. Certain activities or phenomenon could trigger positive or negative attitudes in people especially children.

Consequently, attitudes whether negative or positive among children begins from the early stages in the life of the child. Also, children develop attachment or detachment to whatever that attracts or repels their fancy. As they grow up, children develop strong attitudes towards things including storybooks. A child who has cultivated the attitude of reception towards any written work would always prefer to have any genre of storybooks available to him or her. However, children who have developed positive reading attitudes are more willing to read and also enjoy reading, and this makes them become adept. Conversely, children who have poor attitudes toward reading mostly read only when they have the need to read; in fact, they tend to avoid reading, and even tend to refuse reading outrightly. And it is a given that a child's attitude toward reading basically impacts on the child's overall academic progress.

Children's storybooks include books and other forms of reading materials written, produced and published for children's use whether for academic, social, educational, or leisure reading. Children's attitudes towards these storybooks are crucial to their academic outcomes and development which could affect them positively or negatively. Storybooks are considered as very important information resource in the overall development of children as it ultimately determines their functionality and social development. Children's orientation, attitude and ideologies get shaped by the books they read at their very formative years. Some authors such as Dike (2015), Aramide (2015) and Babarinde and Babarinde (2017) believe that children's exposure to storybooks should be infinite. It can thus be deduced that introducing storybooks to children from a very tender age could help in developing receptive attitude towards storybooks. Children's receptive attitude towards storybooks could also be linked to the contents, storyline, narratives, theme, plot or physical ambience of a book.

While factors such as the attractive nature of the storybooks, the contents and narratives of the storybooks could likely be responsible for children's apathetic attitude towards storybooks and this could account for the decline in children's motivation towards storybooks. However, the declining interests towards storybooks among children could be the cause of poor academic achievement, examination malpractice, moral decadence and a host of other vices among the children in Nigerian



society today. Adeyeye (2018) noted that unchecked attitudinal apathy towards storybooks and use among children could degenerate to poor academic achievement, poor reasoning and sense of judgment, loss of confidence, lack of focus and direction as well as other worrisome violent and value system degradation among children. On the other hand, some researchers believe that developing a positive attitude towards storybooks is capable of transforming the minds and lives of those who use them (Glover, 2012; Echedom and Nwankwo, 2017). And it appears that developing positive attitudes towards storybooks could be a panacea to societal ills. This is because children's attitudes towards storybooks especially for pleasure are capable of building children's imagination, developing their critical thinking and communication skills. Wise (2018) posited that there is a marked increase in intelligence for children who have developed positive attitude towards storybooks. Similarly, when children are exposed to 50% more words through reading, it could increase their brainpower, make them more empathetic, relax the nerves, ease tension, and entertains the soul. Children's attitude towards their storybooks whether as a leisure material or for academic purposes could get a motivational boost whenever a prize is attached to it (Saka, Bitagi, and Garba, 2012).

However, children's spurn of storybooks could just be that the storybooks made available to Nigerian children have become unappealing, boring, and uninteresting both in physical and contextual features. Similarly, the themes, plots, and contents of books children are likely exposed to both for academic and pleasure reading has become very unfamiliar to children. Again, it may not be far-fetched that most of the books presented to children are written in a complex and un-simplified language; especially where it is the case that English is considered a second language in Nigeria. However, it is not just a matter of attitude towards storybooks but also a matter of the efficient use of these storybooks by children. It is likely however, that positive attitude towards storybooks could bring about effective use of it. The benefits of children's use of storybooks are innumerable going by the extent to which children who frequently use storybooks are strengthened intellectually, emotionally, socially, and morally.

When children have access and are exposed to good storybooks, they are likely to develop their capacity to use grammar properly and get used to new vocabularies. Also exposing children to storybooks from their early stages make them develop strong emotional, intelligent, and social quotient compared to their peers who get to use storybooks. Stories when presented in printed book formats could create the right kind of companions for children. The books children read and the characters they come across while reading books sometimes become imaginative friends to them for the better part of their developmental years. When children get exposed to varieties of books and they effectively and consistently use them, it nurtures them aright towards making positive responses to life's many challenges. The benefits of engaging children through the use of storybooks cannot be overemphasized. This is because



engaging children through read - alouds, and other reading activities could go a long way in promoting their confidence towards efficient storybooks use. The poor academic performance of students at the primary and secondary school levels especially during unified examinations have shown that children do not read and have gotten the foundations of developing positive reading attitude wrong. It is also not far-fetched to allude the state of poor academic performance and reading apathy of children to the presence of technological applications and devices. School children from experience rarely consult dictionaries and other reference materials for research and assignments, they resort to the quickest form of response through mobile devices and the internet, hence their likely distraction from the use of it.

What exactly could be the cause of attitudinal apathy towards the reading and use of storybooks amongst children in primary schools across Nigeria? Could it really be the case that the storybooks made available to them does not measure up to their mental and biological development? What sort of genre of storybooks do children prefer to propel their attitude towards positivity of use and reading?

Statement of the Problem

The poor state of academic performance amongst school children in Nigeria shows that reading and effective use of storybooks for pleasure has lost its place in the life of the academic pursuits of school children in Nigeria. Similarly, the abysmal poor standard of storybook contents and the ambiguity it poses to children could be a problem affecting their attitude towards the use of it. This problem could point to foundational deficiencies of the basic educational structure against the nurturing of children's attitude towards the sufficient use of storybooks.

Objectives of the Study

1. To identify the cause of attitudinal apathy towards storybooks amongst primary school children in Nigeria
2. To ascertain the extent of storybooks use by primary school pupils in Nigeria
3. To find out the relationship between attitude and use of storybooks amongst primary school children in Nigeria
4. To examine the type of contents of storybooks available to primary school children



Literature Review

Relevant literature is reviewed under the following sub-headings.

Attitude of children towards storybooks

Attitude is an act of interest and appreciation for a phenomenon or practice or activity. Bankole (1999), succinctly posits that attitude elicits an individual's pattern towards life. It evokes behaviours, conditions success or failure, constitutes values, beliefs, norms, and feelings. Attitude is predicative of the learning process without which there can be no learning or unlearning. Okeke (2004) opined that the desire to read or not to read is a disposition of attitude. A mind engaging activity like reading has become indispensable especially in with the modernity of educational system. The ability and desire to engage in meaningful reading activity either for pleasure, entertainment or information relies on attitude (Oyewole, 2017). According to the Guardian Woman (2017), children's attitude towards storybooks generally has placed the child on a pedestal of intellectual exposure and the civility to dispel unhealthy stereotypes and showcasing universal human emotions and feelings. Thiabault (2016), noted that it is important children get exposed to storybooks that are multicultural themed, this should be encouraged as it promotes knowledge and understanding about other cultures and values. Sullivan and Brown (2015) explained that through a combination of literary themes from different subjects, children's attitude towards storybooks and other fields are balanced.

Children can be influenced by the stories and information they read from books (Dowker, Bennett and Smith, 2012). These stories can reinforce or undermine their attitudes towards reading and even their self-esteem; stories with stereotypic views about other cultures and race could promote negative attitudes among children who read them (Samal, 2012). According to the Guardian Woman (2017), children's attitudes towards storybooks could be receptive if the storybook's physical features are appealing and offers rich contextual messages about them and what they are familiar with.

Appropriateness of storybook content

Sparks (2013) succinctly posits that children would develop positive attitudes towards storybooks when such storybooks are anti-biased of their interests. However, the poor publication of storybooks in terms of plot, theme, and content, the use of obscene and inappropriate words and language has frustrated many reading communities despite improved interest towards reading (Sparks, 2013). Sparks (2013) recommends that it is important to review storybooks children get exposed to, to prevent a life-threatening damage on their morality as well as their attitudes towards storybooks. However, Patterson (2017) points out that Children may show interest and develop attitudes towards storybooks for pleasure and relaxation when the subject and contents are right for their age, mind and mental growth, nevertheless, a well cultured attitude and habits towards



reading is critical in the formation of good reading habits and positive behavioural and academic outcomes. Several studies have substantiated the fact that a correlation exists between the contents of storybooks and the reading interests.

Likewise, Amanambu *et.al*, (2021) describes storybooks as a collection of literary works meant for children's entertainment and education. Therefore, it is expected that every author has a gap, goal and objectives his writing works of art intends to fulfill, whatever the goals are cannot be way beyond the audience intended and therefore it is expected that all necessary steps in diction, plot, theme, and scene in the work must be in alignment to the intended audience without causing of harm in all its forms. The appropriateness of the story must be relevant to the health of the audience's mental, moral, educational wellbeing. Angleton (2018) asserts that the amount of time children invest in the use of storybooks usually tells positively on their psycho-social maturity. Also, the contents of storybooks provide fluent ways which enable children to listen, process and recreate theirs, (Utas and Fethi, 2016).

It is the case in Nigeria where the ministry of education embarked on inclusive sexual education in schools and this reflects in the storybooks children are exposed to, making authors use abrasive words and vivid sexual descriptions of scenes in storybooks, which are damaging to the mental health of children. Day Live (2017) reported the controversy amongst parents at the inclusion of sexual education in form of stories in literature texts to undermine the innocence of children. Similarly, Ekwuowusi (2022) highlights the dangers of the CSE program in storybooks: such stories and explicit narratives sexualizes children; teaches children to consent to sex; normalizes anal and oral sex; promotes homosexual/bisexual behaviour; promotes sexual pleasure; promotes solo and/or mutual masturbation; promotes condom use in inappropriate ways; promotes early sexual autonomy; fails to establish abstinence as the expected standard; promotes transgender ideology; promotes contraception and abortion to children; promotes peer-to-peer sex education or sexual rights advocacy; undermines traditional values and beliefs; undermines parents or parental rights; refers children to harmful resources.

Use of storybooks amongst primary school children

Storybooks includes novels, stories in biographical, fictitious and non-fictitious, plays, dramas etc. all in book format meant for children who struggle with learning and reading (Bolan, 2009). Bankole (1999) posits that with right kind of exposures children have in other areas of their lives such as sports, and other leisure engagements, if that amount of attention is given to storybooks and reading, a natural habit to books and reading would be easy and feasible. According Kumon (2019) Children of any age love storybooks containing fictitious stories, and this exposure offers them access to new words, ability to recognize words and easy language usage. Akinfenwa (2019) berated the eroding heritage of reading due to poor and insufficient prioritisation of storybooks use and quality policies for sustainable education and literacy development. Nigeria today is faced with millions



of her citizens not formally educated due to poor foundations of educational structure (Hile, 2018). Onwubiko (2010), posits that the use of storybooks amongst Nigerian children is deficient when juxtaposed to that of the Western world. Despite the obvious importance of storybooks use, it obvious that Nigerian children are no longer disposed to using storybooks (Anyanwu, Obichere and Ossai-Onah, 2012).

Kalango (2010) also pointed out that the shift in moral values and academic achievement to profane, decadence and mundane values of greed, and materialism is as a result of poor storybooks usage among children. Akinfenwa (2019) attributes the poor leadership in all sectors in Nigeria as a backlash from poor use of storybooks. Nwaubani (2015) fingers online distractions, poverty and others as reasons for the alleged loss of interest towards storybooks use among children. Akinfenwa (2019) insists and x-rays the decline of storybooks use among children, according to him; poverty, poor governance, poor educational policies, etc. has culminated in jeopardizing the effective reading culture among citizens. Storybooks use among children is a universal activity that educationist adopt in achieving discipline and all round development in their wards. Similarly, children imitate reading as an activity even before exposure to formal education from reading parents (Onwubiko, 2010).

Parental influence and children's use of storybooks

Studies have it that exposure to frequent books use to children places them above their peers in the use of vocabulary (Justice and Ezell, 2000). However, Aram, *et. al* (2017) posit that the adults reading style and behavior is a determinant to children's reading engagement and discourse surrounding the text. Axelsson, Lundqvist, and Sandberg (2020) investigated the indicators to early reading in children. 27 parents ($n=22$; mothers $n= 5$ fathers) of preschoolers were the participants using interview. 28 children were represented by their parents ($n = 14$ daughters; $n = 14$ sons; one parent had twins). Findings from this study indicated children early use of storybooks is propelled by Adul initiated and supervised activities and support from peers and siblings. Similarly, Niklas, Cohrseen, and Tayler (2016) researched on appropriate age determinant in introducing children to storybooks. In their study they assessed 104 children before they entered school, responses from their interviews indicated that six month after their birth, the children were read to by their parents.

Similarly, their findings revealed that children's early literacy skills can be linked to their parental status; the research however summarised the findings that children's early literacy and academic achievement is determined by their favourable home environment. Hashim and Ariffin (2018) examined parental strategies and their implication to children's use of storybooks vis a vis academic achievement. The study used 3 indicators: children/parents participation, teacher/parents participation and parent/teacher association. The research involved 180 participants including pupils, parents and teachers using questionnaire as a tool for data collection. 3.33% was



derived from parental participation. 2.66% was derived from parental/teacher participation while 2.56% was accrued to parent's teachers association respectively. Likewise, Qayum, Madiha, Khalik, and Agha (2015) also sought to identify participation of parents towards their children's use of storybooks and education.

Theoretical underpinning of children's attitude and use of storybooks

This research is hinged on the Theory of Mind (ToM). Theory of the mind was first propounded by Premack and Woodruff (1978). This theory posits that storybooks are the best tools in measuring the state of the mind of children as it regards emotions, beliefs, desires, mental and physical distinctions. This theory proved that developing children between 3-12 years of age. Theory-of-Mind (ToM) is the social cognitive ability to attribute one's mental states and that of others to attribute understanding, predicting and explaining the behavior of others. This theory is also referred to as 'folk psychological abilities' or as 'mind reading skills'. This theory is needed to fully understand children's attitude and behaviours towards storybooks and reading and towards the predicting and understanding of their as it concerns their academic activities and outcomes.

Methodology

This is a qualitative study focusing on content analysis of storybooks/literature texts using primary and secondary sources of information. These storybooks would be analysed based on their content and age appropriateness as regards to language, illustrations, description, and message. For this study, 4 locally published literature books recommended in the past and present for use by primary and secondary school children will be analysed. 2 recently published books and 2 older published storybooks.

Criteria for Content Analysis

1. The storybook must be published in English language
2. It should be recommended for use in the past or present for school children in primary and secondary school
3. It should be authored and published by Nigerians
4. The texts should be recommended for use for school children



Table showing storybook/literature texts for school children

TITLE OF STORYBOOK	AUTHOR	YEAR OF PUBLICATION	LEVEL RECOMMENDED FOR	AGE
Dangerous Influence	Christianah Uyanne	2022	Primary 6	8 – 10 years
Time Changes Yesterday	Nyegi Nkoi	1982	Primary 6 – Jss 3	11 – 15 years
Shattered by Friends	Christianah Uyanne	2022	Jss 1-3	11 – 15 years
Koku Baboni	Kola Onadipe	1970	Primary 4-6	7-10 years

Content Description and analysis of Storybook/ Literature Text

Dangerous Influence by Christianah Uyanne

This book or text is a recommended text for primary school pupils who are between the ages of 8-10 years of age. The book summarily talks about how close relations with certain persons could ruin and jeopardise the life of young ones. However, the author made right to write about dangerous influence, but the story could still have gone well and the message duly passed without the abrasive use of sexual explicit words children within the audience shouldn't be familiar with. The text described vivid procedures explicitly to sexual initiations and conduct. And the signs and symptoms of pregnancy of which children within that age range are meant to be protected against the methods of conception and sex. This sort of descriptions were meant for adults, this text has been termed inappropriate and its use discontinued by some schools.

Time changes Yesterday by Nyegi Nkoi

This storybook or text is recommended for school children who are between the ages of 11-15 years of age. Time changes yesterday talks about an attempt to love again by Kofoworola and Tayo, a parent to a pupil in her class. This text was published in the 1980's, it was also meant for an average audience of children who would have begun puberty, yet the language of expression of love lines, scenes and themes were modest, there was no vivid description or abrasive use of obscene words. The story captured



the mindset of children with regards to love and character; this text presented each character's role in general context and not in an abusive and harsh manner.

Shattered by Friends by Christianah Uyanne

This text was published recently in the year 2022. This text is recommended for use by children who are between the ages of 11 to 15 years. The text talks about negative influence of keeping dangerous company especially in the era of technology. This idea is right and justified to warn children against keeping wrong company and against in cooperating wrong values because of friendship, a lot of sad event which have occurred in Nigeria, shows that they are mostly perpetuated by young children who form a gang or group of friends. As rife as this story may be, the author didn't take cognizance of the wrong use of words, the deployment of sexually graphic lines, abrasive words, even the choice of graphics on the book cover shows inappropriateness as well as the colour, such a book undermines the innocence of children and rather than instruct, teach, enlighten, will only create apathy and because of the ambiguity of words, theme and contents.

Koku Baboni by Kola Onadipe

This text was first published in the 1970's and meant for children between the ages of 7 to 10 years old. It is a story of empathy and compassion; about the taboo of a certain community against the birth of twin children. This story did not provide the vivid description of how twin children were murdered by community members, rather it talked about killing as though it didn't involve a knife, blood and death. This story talked about rescue and compassion by a stranger who picked up the Koku Baboni, raised him, and told him about his roots and origin. This story describes to children what love is about, what compassion is about and described a modest way to mention death and destruction without abusing their minds and corrupting their innocence.

Discussion of Findings

Christianah Uyanne's Books

The findings in this study reveals that storybooks published in recent times after 2015, affects children's attitude towards the use of the. This is because the text title and contents expresses so much ambiguity in meaning and in the instruction to modesty which is way beyond the mental capacity of the child's mind. It also shows that author and publishers of this generation do not take into the cognizance the innocence of the child and the impressionability of their minds. Authors write with the presumption that technology already had introduced to children obscenity and abrasive and foul language. They however have shown through their writing that by using words



capable of damaging their psyche as well as causing apathy to their minds towards the reading of storybooks. Similarly, the use of abrasive words, obscene language and vivid description of love scenes were predominant and would require children's use of adult dictionary to decode the meaning. This however, breeds negative attitude to storybooks reading. Some of these authors books have been protested by parents and guardians in different forms, some have written to school authorities to discontinue the use of these books awhile some had written to the ministry of education to caution authors on the abrasive use of words and diction. However, children's frequency in the use of these books can be said to be poor as the content does not match with their mental disposition.

Nyengi Nkoi and Kola Onadipe

However, the storybooks by these afore mentioned authors were published several decades ago, and these publications were still when Nigerian children and schools were heavily dependent on foreign storybooks such as Charles Dickens, Jonathan Swift, William Shakespeare, etc. these two books were published alongside other African and Nigerian classic storybooks were in use and children read them, made inferences to them and still it passed a modesty test for the love stories as well as instructed children appropriately on the societal impact based on attitude and character, this books have managed to form better character and reading attitude in children.

These books, published many decades ago has proven to be timeless based on the diction used, appropriateness of audience and rich content. These books at one time or another have been reintroduced to the school curriculum by the ministry of education in Nigeria because of the quality assurance test it has always passed especially as it positively reflects every aspect of concern to the development of the child. These storybooks, though old, remains relevant and therapeutic for children even till this day.

Conclusion and Recommendation

This article concludes that authors, and storybooks published after 2015, are abrasive, and assaulting to the impressionable minds of children. It can be said that the storybooks published in these times are not children friendly as their contents and diction use in the text corrupts the mind of the child, takes away their innocence and leaves them with the worse kind of apathy towards reading and storybooks. Poor attitude towards the use of story books by children are caused by the ambiguity of contents as rightly put by Anyanwu, Obichere and Ossai (2012). Besides the over dependence on technological devices and the distractions it gives children, as observed by Nwabunani (2015), authors of children's storybooks appears to be guilty



of this distractions as the contents of their literary works does not reflect the African and Nigerian conservativeness in the use of foul and obscene words and which requires children to make use of adult dictionary to be able to flow with the story; this proves Kalango (2010) right that the shift in moral values and academic achievement to profane, decadence and mundane values of greed, and materialism is as a result of poor storybooks presentation and usage amongst children.

Government policies have also not helped the literary industry as published works reflects dearth of quality assurance control and regulations as Akinfenwa (2019) attributes it to poor leadership at all the Nigerian sectors.

In summary, some researchers Onwubiko (2010), Anyanwu, Obichere and Ossai (2012), Nwabuani (2015), Kalango (2016) and Akinfenwa (2019) blames poverty and socioeconomic factors of parents and as well as authors are the major culprit why children's attitude towards the use of story book is decadent; (parents, is because they themselves do not read or provide access to storybooks, while authors write stories whose content would be marketable and attractive to the poor minds of readers)

Recommendation

This article makes the following recommendations.

1. The use of mild words, instructive storylines like those deployed in the 1970s to 80s.
2. Government agencies should deploy stringent measures in the monitoring and evaluation of storybooks recently published before recommending them for use.
3. Certain diction should be outlined by ministry of education regulatory body on words that should be placed on restrictions for use in storybooks meant for children.
4. The older literature texts should be reintroduced sparingly into the curriculum to allow for an effect of balance with the older and newer generation writers and stories.

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CHAPTER 34

HARNESSING THE COMMUNITY RESOURCES IN AMELIORATING THE LOW ENROLLMENT OF STUDENTS INTO SCIENCE PROGRAMMES AT THE FEDERAL COLLEGE OF EDUCATION (SPECIAL), OYO

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Abstract

Teaching profession is a noble and essential career that produces manpower needs of any country. It is against this backdrop that specialized teacher training institutions such as colleges of education are created and heavily funded by the government. Products of such schools are posted to the primary and secondary schools to prepare future leaders that are distributed into various other professions; suffice to say that teachers make all other professions possible. Unfortunately, in the recent time, enrollment in such institutions has dropped drastically! Apart from the ignoble treatment of teachers by successive government, parents' pride on their children rest solely on attainment of University education, while the students themselves consider college of education as no longer fashionable and the one that imposes low esteem on them. Science and Technology have been found to be the main vehicle for National development. Therefore, teachers must be trained to teach all science related subjects in primary and secondary schools. Unfortunately, while general enrollment of students in colleges of education has dropped, science programmes are the most badly affected. A typical example of this is the Federal College of Education (Special), Oyo. If care is not taken, natural death and total annihilation of science courses is imminent. Therefore, this study explores the roles the community where the institution is domiciled can play in ameliorating the challenge, which may include: Local orientation, House to house enlightenment, Involvement of school heads, Philanthropists sponsorship, Scholarships Awards, Local Government Assisted Sponsorship of regular laboratory experiments in the college.

Key words: *Community resources, Low enrollment, Science programmes*



Introduction

Teaching profession is undoubtedly, a noble one that feeds and sustains all other professions. Professionals of all other careers are taught, groomed and nurtured by teachers. It is for this purpose that specialized institutions are instituted and funded by the government to cater for teaching profession. This is the reason for the creation of the National Certificate in Education.

Teacher Education

The National Policy on Education (2007) categorically stated that: (a) since no education system may rise above the quality of its teachers, teacher education shall continue to be given major emphasis in all educational planning and development. (b) The minimum qualification for entry into the teacher profession shall be the Nigerian Certificate in Education (NCE). The goals of Teacher Education shall be to: (a) Produce highly motivated, conscientious and efficient classroom teachers for all levels of our educational system; (b) Encourage further the spirit of enquiry and creativity in teachers; (c) Help teachers to fit into social life of the community and the society at large and enhance their commitment to national goals. (d) Provide teachers with the intellectual and professional background adequate for their assignment and make them adaptable to changing situations; (e) Enhance teachers' commitment to the teaching profession.

The above objectives were being achieved effectively until in the recent time when National Certificate in Education (NCE) programme is being jettisoned, shunned and neglected by prospective students seeking admission. While commenting on low enrollment in colleges of Education in Nigeria generally, Akande, (2022) submitted that the societal perspective and attitude towards the teaching profession pose a serious challenge to any certificate in Education. Worst hit is the National Certificate in Education (NCE), whereby the holders of that certificate are relegated to the background and this has caused sharp decline in students' enrollments. Since Nigerians have quest for paper qualifications, as against skills and professionalism, most young school leavers now have more propensity for University degrees. NCE students' enrollment in the colleges has experienced sharp decline in the last ten years due to upsurge in the quest for University degrees. Major reasons attributed to this recent trend include:

- i. Preference of University graduates to NCE holders by the employers of labour.
- ii. Derogatory admission requirements at 'O' Level for entry into University, Polytechnic and College of Education which makes it seem as if NCE is meant for only poorly performed or academically poor students, who now make NCE as the last option. For instance, statistics showed that in the UTME for 2019, a total of 1, 803,742 candidates sought admission into the degree programmes of various universities while only 34, 141 (1.8%) sought admission into the Colleges of Education.
- iii. Poor remuneration to holders of NCE and teachers generally.



- iv. The scale of preference for admission by JAMB, where College of Education is placed as the third choice for candidates, indicating that the Polytechnic and University Education are more preferable.
- v. Refusal of the Universities to accept NCE holders into 300 level as against the previous admission policy, thus elongating the time to obtain degree certificates through NCE path, i.e six (6) years instead of four (4) years for direct admission into University.
- vi. Inconsistency and conflicts in public policy in the Nigerian space. NCE holders are not considered for admission into degree programmes outside the Faculty of Education or Institute of Education.
- vii. NCE holders are not considered for employment in the Public service outside the Teaching service.
- viii. NCE holders are often considered not suitable for employment in the Private sector.
- ix. NCE holders cannot rise to the headship position because they are categorized as middle-level manpower.
- x. The course content of NCE curriculum is rather too cumbersome compared with degree programme, hence preference for University education.
- xi. Removal of NCE products from the National Youth Service Corps (NYSC) scheme unlike before 1985 when NCE holders participated in the scheme.
- xii. The use of members of the National Youth Service Corps (NYSC) as the major source of most teachers at the Basic Education level (that is, Primary One up to Junior Secondary Three) provides free services to the various states which, therefore, no longer recruit NCE holders whose remit is to teach at that level. Hence, the current mass unemployment among the holders of the NCE across the country.

From the foregoing, one could conclude that NCE programmes generally are affected by low enrollment. However, science programmes have been found to be the most affected because, naturally many students at the Secondary school area scared of science subjects. Most of them run away from Science subjects because of Mathematics as well as calculations in other Science subjects. The few that have courage and flair for science subjects chase Medicine, Nursing and other medically related courses as well as Engineering courses which are only available in the Universities. Therefore, if care is not taken, teaching of science subjects in primary and secondary schools may gradually go into extinction based on the observed low enrollment in science programmes at the College of Education level.

Nevertheless, science remains a significant pillar for living, growth, technological and the overall national development. Science has been presented both as a body of knowledge and process. The body of knowledge represents the current understanding of natural systems and the processes whereby that body of knowledge has been established and is being continually extended, refined, and revised (National Academic Press, 2007). National Research Council (2007) claims that both elements,



that is, science as a body of knowledge and a process, are essential as one cannot make progress in science without an understanding of both. Science is a systematic enterprise that builds and organizes knowledge in the form of testable explanations and predictions about the universe.

Science education deals with sharing of science contents and processes with individuals who are not primarily considered to be member of the scientific community in order for them to understand science and utilize such knowledge for self and other benefits. In spite of all the benefits of science, low enrollment of students into the various science programmes in the Colleges of Education may lead to non-availability of teachers to teach the subjects in the nearest future.

There are many causes of low enrollment in science programmes in colleges of education which could be traced to:

1. **Teacher:** Teacher is very important in the process of any subject in school that is why teacher must be well qualified and teach very well in schools. Teachers must be properly trained because their output will surely go a long way to influence their students, which is why (Khan, 2013) said the quality of teacher depends upon their training and preparation. According to Aina (2013), there were lack of qualified science teachers to teach science in primary schools. Teachers' method of teaching is very important in teaching and learning process, that is why for any teacher to teach well he or she should be able to use appropriate method of teaching at the appropriate time and lesson. Where teachers are not teaching well either by not using good method or not committed to his or her duty, students will lose interest in such teacher and in the subject. For students to learn very well and create interest in science it must be taught with good instructional materials. This aids the teacher from teaching and also students to learn as confirmed by (Aina, 2012) that instructional materials are very important in teaching and learning of science if adequately used. Where these are absent it will affect students' performance and eventually reduce enrolment in science.
2. **Instructional materials:** There are no enough science equipment, no good science laboratories, science textbooks are difficult for students to understand.
3. **Subject matter:** Science subjects have been tagged to be too difficult to learn, physics is too abstract, biology is too wide, chemistry is very hard to learn, integrated science is too complex, computer is not easy to access, physical and health education is not practically tutored, mathematics is too difficult to understand and science in general is too mathematical. Unless these are simplified to create attraction, the myth surrounding science subjects will continue to put students away.
4. **Interest or motivation:** Students' interest is very germane to the choice of courses study and it must not be overlooked in schools as argued by (Hermit, 2013) that



if a child is interested in the subject matter, he will learn more. Motivation could be considered being ‘catalyst’ to learning and that is why students must be well motivated by both parents and lecturers. Students interest is very low because the economy of the nation has brought down students interest in education especially science programmes. Students are now their own advisers, counsellors and motivators. They expose themselves to what their friends do. They engage themselves on social media than academic programmes. Parents of nowadays do not encourage their children on school programmes except social media networking.

Aina and Adedo (2013) asserted the low science enrolment in Nigerian schools due to many factors among which is the lack of interest by the students. According to Taber (2017), another potential barrier to science education development is the teacher's lack of knowledge and skills in research methods. One of the critical requirements to promote and strengthen education is the training of teachers (Sarita and Dahiya, 2016). Teacher and the quality of teaching are often considered the most critical elements of student success in learning science (Koc and Yager, 2016).

Laboratory and teaching resources are lacking in many schools. Most students cannot recognize common science equipment and teaching materials. The reason is that most students have not seen this science equipment and resources as these are usually borrowed from schools in the urban centers for external examinations (Clement, Bello and Sanusi, 2017). Hence, students' enrolment in science education in these institutions has been discouraging in the recent times. Another problem is that of bad governance. Government has failed in attending to educational plights of the citizens by poor allocation in the recent time. UNESCO advocated for minimum of 26% budgetary allocation to education, but in Nigeria, nothing more than 6% has been allocated to education within the past ten years. Therefore, the meagre amount given to purchase of science equipment has never been enough (Ogundiya, 2010). According to Aina, *et al.* (2017), lack of good governance include the conduct of a comprehensive management wherein all the critical stakeholders are allowed to have a say in the decision- making process, but this has not been allowed (Odo,2015). According to Aina, *et.al* (2017), lack of good governance in Nigeria causes poor infrastructure and lack of fund for research in science education. Also, teachers who are the critical variable in science learning are severely affected, they lack adequate teaching knowledge, besides; there are no adequate laboratory equipment and other educational resources which lead to loss of interest among the students and the high attrition rate. Government is therefore the principal cause of this low enrolment. Evidence and observation show that Nigeria as a sovereign nation since her independence in 1960 has been having leadership problem that affected the Nigeria education system which includes science education.

The low enrollment of students into science programmes in colleges of education, and most especially in science programmes is a significant challenge that requires collaborative efforts from various stakeholders, including the community. Community, according to Hamilton-Ekeke (2023), is a cluster of families built on past wisdom, enhanced by present, inspired by hope for better future, hence the community voices should be listened to if community wellness is to be promoted.



It should be noted that communities struggled hard to win the heart of government for siting the Colleges of Education into the community. The Colleges succeed in boosting the development and growth of the community, there is a substantial economic growth, aggravated increase in the population of the community brings more developmental benefits, members build more houses for rentage, many indigenes secure employment in the colleges, religious centres are populated by the students whereby the communities derive much more benefits, many indigenes who could have remained illiterates or remain secondary school leavers are motivated by what they see around and thus advance their educational pursuits, there are several cases of immediate or future marriages between the students and the indigenes etc. Definitely, if the college of education is plagued by natural death as a result of low enrollment, the community will suffer! Therefore, community resources should be harnessed in ameliorating the low enrollment in colleges of education, especially, the observed low enrolment in science programmes.

Community resources are resources that enhance or facilitate the lives of people in the community. These resources are an integral part of every individual's development. Some examples of community resources are factories, educational institutions, cinema halls, libraries, religion places, hospitals, community centers, parks, and most especially the active human involvement of community stakeholders in enhancing academic programmes. It would be of great ideas to make use of these resources in education as it develops a sense of value and belonging among students. Teachers can use community resources to help students develop their social skills and prepare them for their future ambition. Using community resources in teaching can enrich the learning experience for students. Their knowledge with the regard to the community will provide students with real-life opportunities for learning. It expands the spectrum of knowledge of students and helps them understand the functioning of different institutions in the community. It helps them to be responsible and take an initiative to bring about positive changes in the society they live in. It enables them to get exposed to different ideas and facilitates the formation of an inclusive atmosphere. Also, as they encounter different institutions and professionals, they would ignite an interest in certain professions and will be inspired to pursue that. Community resources would assist in picking up democratic traits and aid in understanding democracy in a broader sense. This would empower students and these experiences will help them in developing their own ideas.

The focus of this position paper is to sensitize the public to the imminent danger facing science education in colleges of education in Nigeria, especially the Federal College of Education (Special), Oyo, and to suggest what the community of domicile could offer to ameliorate the great challenge.

The College of Education (Special), Oyo is a specialized teacher institution for taking care of the students with special needs. It is very unfortunate that the



problem of low enrollment is badly affecting the institution as some evidences are displayed in the following tables showing registration summary for seven (7) sessions.

Table 1: Admission quota for the 2016/2017 to 2021/2022 academic session for science programmes at Federal College of Education (Special), Oyo

Department	Quota
Biology	350
Chemistry	200
Physics	100
Computer	200
Physical and Health Education	150
Mathematics	200
Integrated Science	200
Grand Total	1,400

Table 1 shows the quota or number of expected students who could be accommodated in each of the science programmes for those years. This is to say that the college has adequate capacity for admitting that number of students for the various science programmes. However, Table 2-8 show what obtained in the past seven sessions.

Table 2: Registration summary of Federal College of Education (Special), Oyo (Science Programmes) for Year 2016/2017

S/N	Dept	M	F	TOTAL
1.	Bio	19	123	142
2.	Che	16	63	79
3.	Csc	40	44	84
4.	Isc	7	57	64
5.	Mat	15	22	37
6.	Phe	12	15	27
7.	Phy	19	18	37
Total		128	342	470



Table 2 shows that while the college has capacity for 1,400 science students, only 470 were admitted, leaving a shortage of 930.

Table 3: Registration summary of Federal College of Education (Special), Oyo (Science Programmes) for Year 2017/2018

S/N	Dept	M	F	100
1.	Bio	28	147	175
2.	Che	20	73	93
3.	Csc	42	40	82
4.	Isc	15	59	74
5.	Mat	14	12	26
6.	Phe	8	7	15
7.	Phy	13	14	27
Total		140	352	492

Table 3 shows that out of the 1,400 expected, only 492 were admitted, leaving a shortage of 908.

Table 4: Registration summary of Federal College of Education (Special), Oyo (Science Programmes) for Year 2018/2019

S/N	Dept	M	F	100
1.	Bio	15	166	181
2.	Che	20	87	107
3.	Csc	54	38	92
4.	Isc	7	83	90
5.	Mat	13	18	31
6.	Phe	15	17	32
7.	Phy	13	8	21
Total		137	417	554



Table 4 shows that out of 1,400 expected, the students admitted were 554, leaving a shortage of 846.

Table 5: Registration summary of Federal College of Education (Special), Oyo (Science Programmes) for Year 2019/2020

S/N	Dept	M	F	100
1.	Bio	25	179	204
2.	Che	23	124	147
3.	Csc	60	50	110
4.	Isc	6	81	87
5.	Mat	14	18	32
6.	Phe	19	21	40
7.	Phy	16	21	37
Total		163	494	657

Table 6 shows that out of the 1, 400 expected science students, only 657 got admitted, leaving a shortage of 743.

Table 7: Registration summary of Federal College of Education (Special), Oyo (Science Programmes) for Year 2020/2021

S/N	Dept	M	F	100
1.	Bio	29	275	304
2.	Che	10	67	77
3.	Csc	56	29	85
4.	Isc	4	25	29
5.	Mat	15	14	29
6.	Phe	6	7	13
7.	Phy	8	9	17
Total		128	426	554



Table 7 shows that out of the 1,400 candidates expected, only 554 were admitted, leaving a shortage of 846.

Table 8: Registration summary of Federal College of Education (Special), Oyo (Science Programmes) for Year 2021/2022

S/N	Dept	M	F	100
1.	Bio	44	241	285
2.	Che	9	58	67
3.	Csc	37	24	61
4.	Isc	4	26	30
5.	Mat	14	19	33
6.	Phe	6	8	14
7.	Phy	17	9	26
Total		131	385	516

Table 8 shows that out of the 1,400 candidates expected, only 516 students were admitted, leaving a shortage of 884.

Source: Registry Department (Admission and Academic Board Division) of the Federal College of Education (Special), Oyo

The observed shortage in the admission quota here is alarming. Therefore, something must be done urgently to ameliorate the challenge. Several studies in the past have traced the reduction on enrollment to the government and focused on government alone to solving the problem, yet the problem is aggravating. Therefore, this study shifted attention on the community of domicile of the college by suggesting that community resources should be harnessed to ameliorate the problem.

Recommendations

Here are some ways to harness community resources in ameliorating this problem:

- i. Orientation of community officials, traditional chiefs, family heads, and other stakeholders, sensitizing them to the imminent danger posed by low enrolment
- ii. House to house campaign and enlightenment about the various benefits of science education in Colleges of Education



- iii. Involvement of school heads in the campaign in favour of science education in colleges of education
- iv. Philanthropists' sponsorship of willing students to study science education in college of education
- v. Scholarships Awards to brilliant students who opt to study science education in college of education
- vi. Local Government Assisted Sponsorship of regular laboratory experiments in the college.
- vii. Collaboration with local schools: Engage with local primary and secondary schools in the community to raise awareness of the importance of science education.
- viii. Organizing science fairs, workshops, and seminars that expose students to various scientific concepts.
- ix. Encouraging secondary schools to prioritize science education and promote science-related extra-curricular activities.
- x. Engaging local science professionals: Reaching out to scientists, researchers, and professionals in science-related fields within the community. Invite them to speak to secondary school students and provide mentorship to aspiring science education students.
- xi. Encouraging successful indigenes to provide support to science programmes in colleges of education by volunteering as guest lecturers, donating resources, and offering internships.
- xii. Creation of science clubs and initiatives: Establish science clubs and initiatives in the community to provide additional support to science programmes in colleges of education. These clubs can organize science-related activities such as field trips, experiments, and mentorship programmes.
- xiii. Host community events: Let there be host community events that showcase the importance and relevance of science education. This can include science exhibitions, talks, and demonstrations. These events can help to inspire young people and create awareness of the opportunities that science education can provide.
- xiv. Encouraging local businesses, organizations, and individuals to provide supports for students pursuing science programmes in colleges of education. This can help to alleviate the financial burden on students and incentivize them to pursue science education.
- xv. Let the community organize an annual special recognition and awards to excelling science students of the college of education during graduation.



Conclusion

In conclusion, harnessing community resources is a crucial step towards ameliorating the low enrolment of students into science programmes in colleges of education. By working together, stakeholders can create a supportive environment that inspires young people to pursue science education and equips them with the skills and knowledge they need to succeed. Through active involvement in the affairs of the college, the community could gradually ameliorate the low enrolment into science programmes. This effort is in alignment with the theme of this conference: Creating connections, building bridges: Initiating paradigm shift in education; hence, rather than focusing on the government for solution to all problems, this paper shifts our attention to the community where the college is domicile, perhaps, the desired solution to the problem of low enrolment would be totally ameliorated.

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CHAPTER 35

USING ANIMATED STORYTELLING TO IMPROVE PUPILS KNOWLEDGE ON SEXUAL EDUCATION

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Abstract

The children's innocence should be protected at all costs. When it comes to sexual abuse, this innocence can be shattered in a single moment, leaving lasting scars for a lifetime. It is the responsibility of school, teachers, parents, government, non-governmental organization and the community to give adequate knowledge about sexual matters to the child, to be able to recognize the signs when abuse may be occurring. However literature has shown that teachers have not been carrying enough responsibilities in this regard due to lack of knowledge of sexual education on the part of the pupils.

The study is a quantitative research, adopted a pretest-posttest, control group quasi experiential design with 2x2x2 factorial matrix. The total participants were 94 pupils, 44 pupils' were from private (47%), while 50 pupils' were from public school (53%). Four schools were selected randomly, two experimental, and two control (Conventional methods). Four instruments were used. Instructional Guide for Teachers on Animated Storytelling, Five lessons Animated Video Package, Instructional Guide for Teachers in Conventional and Achievement Test on Sexual Education. The reliability test was conducted using KR20 yielding a co-efficient of 0.71. Analysis of Covariance (ANCOVA) with Scheffe's post-hoc test was adopted at 0.05 level of significance.

The findings of the study revealed that there was a significant main effect of treatment on pupils' knowledge of sexual education ($F_{(1,85)} = 10.70; P < 0.05; \eta^2 = 0.11$), there was no significant main effect of gender on pupils' knowledge of sexual education ($F_{(1,85)} = 0.024; P > 0.05; \eta^2 = 0.00$), there



was a significant main effect of school type on pupils' knowledge of sexual education ($F_{(1,85)} = 12.23; P < 0.05; \eta^2 = 0.13$), there was no significant interaction effect of treatment and gender on pupils' knowledge of sexual education ($F_{(1,85)} = 1.15; P > 0.05; \eta^2 = 0.01$), there was a significant main effect of treatment and school type on pupils' knowledge of sexual education ($F_{(1,85)} = 4.54; P < 0.05; \eta^2 = 0.05$), there was no significant interaction effect of gender and school type on pupils' knowledge of sexual education ($F_{(1,85)} = 0.14; P > 0.05; \eta^2 = 0.002$), effect of treatment, gender and school type on pupils' knowledge of sexual education ($F_{(1,85)} = 2.10; P > 0.05; \eta^2 = 0.02$). This implies that those exposed to Animated Storytelling performed better than those exposed to the conventional method. The researches prove that Animated Storytelling strategy is effective in improving pupils' knowledge of sexual education.

It was therefore recommended that Animated Storytelling should be adopted by both public and private school teachers to improve the quality of pupils' knowledge of sexual education. Curriculum planner should include sexual education in to the school curriculum and lay emphasis on the use of appropriate method such as animated storytelling. Parent should also find time to look for animation related stories on sexual education to improve the pupils' knowledge of sexual education.

Introduction

Children are innocent beings who are often refers to by parents as well as the society as the future change agent. They are very vulnerable to their environment and heavily rely on adult for upbringing, direction and instructions even before they begin to walk. As children learn to walk and talk, they also begin to learn about their bodies. They express their natural sexual curiosity through self-stimulation from a very young age. During this period, exploration and discovery that goes beyond the simple “head and shoulders, knees and toes”, emerges children often realize that boys and girls have different genitals.

Sexuality is a complex domain of development that emerges and evolves through interactions between biological, psychological, and social factors. Sexual development begins in a child's very first years, and children learn and interpret messages related to sexuality that will shape their future actions and attitudes ICF (2019). Children get the majority of their sexual education from other children and from media sources, and this information may have very little to do with sexual values that parents would have loved to convey

Sexual education is a vital aspect of health education curriculum, and it provides factual knowledge to assist parents, teachers, children, and adolescents to avoid sex-related problems. Sexual education should take place across a pupil's grade levels, with material tailored to the pupil's developmental stage and cultural context. Sexual education may be provided by parents early in the family environment, but



teaching sex education is believed to be taboo, and it should remain within adults in the family until the child is developed. Therefore, the school becomes an important unit that must provide a sex education to children using an appropriate method meant for each developmental stage (Adedeji, *et al.*, 2019).

Child sexual abuse is defined as the involvement of a child in a sexual activity that he or she is not prepared for and cannot give consent to (Manyike, *et. Al.*, 2015). Child sexual abuse is one of the problems that have occurred in recent years, and it affects the physical, mental, and psychological health of a child. Prevention of sexual violence will not be optimal if only sexual education is done by parents alone, but it will be more effective if the school also supports sexual education among school-age children (UNICEF, 2016).

The need for sex education in schools is essential in the contemporary times of precocious pre-teens, teenage pregnancies, sexually transmitted infections (STIs), and child sexual abuse. While parents should provide this information, schools should also serve as an important source of sex education (Fox *et al.*, 2019). The school environment may be the only safe place for children and teenagers who experience sexual abuse, and teachers should be equipped with accurate information to prevent and correct misconceptions and reduce the stigma surrounding the sex abuse. (Saprea, 2022). The implementation of sex education in schools must provide accurate, current, and age-appropriate knowledge to empower children to make informed and responsible decisions about their sexual lives (Maqboo and Jan, 2019).

The lack of sex education, both at home and school, is a significant cause of child sexual abuse in Nigeria (Manyike, *et al.*, 2015). The National Health Demographic Survey (NDHS) (2018) indicates that 19% of women start sexual activity before the age of 15, and 57% begin before the age of 18, leading to teenage pregnancies and high rates of maternal mortality. Furthermore, children in Nigeria experience emotional, physical, or sexual abuse before the age of 18, with six out of ten children experiencing violence (UNICEF, 2016). Sex education in Nigeria must be tailored to the children's developmental stage, using methods and media that are easily understood (Maqboo and Jan, 2019).

Sex education in schools is vital to reduce teenage pregnancies, STIs, and child sexual abuse in Nigeria. Teachers should be equipped with accurate and current information to provide children with age-appropriate knowledge, skills, values, and attitudes necessary to make informed and responsible decisions about their sexual lives. Sex education should be tailored to the children's developmental stage, and school environments should be dynamic, inclusive, and comfortable for all children.

Technology is increasingly becoming a valuable tool in supporting face-to-face teaching, as it enables students to interact with learning material (Arif, 2014). Digital storytelling, which combines graphics, audio, video, and animation to tell a story, is an innovative educational tool that has been found to enhance creativity in



learners and improve their academic achievements (Benmayor, 2008; Basak, *et al.*, 2018). Using animation in education is particularly beneficial, as it simplifies complex systems, makes it easier to understand abstract concepts, and increases motivation among learners (Deborah, 2004). While animation is widely used to create visuals and audiovisuals to support learning in the classroom, there is limited literature on the use of animation for sexual education in early years (Amjad, 2012).

Gender plays a significant role in pupils' knowledge of sexual education in Nigeria, with male pupils having significantly higher knowledge scores on sexual education than their female counterparts (Ibekwe, *et al.*, 2016; Okonta and Okoh, 2021). This gender gap in knowledge may be due to cultural norms and gender roles that restrict open discussions about sexual health issues among female pupils in many Nigerian cultures (Ajuwon, *et al.*, 2017). Therefore, it is essential to explore effective approaches and methods of facilitating sexuality education in early years using innovative tools such as animation.

Research indicates that both cultural and socioeconomic factors impact pupils' knowledge of sexual education in Nigeria (Olugbenga-Bello, *et al.*, 2016; Onowhakpor and Omuemu, 2019). A study conducted by Olugbenga-Bello *et al.* (2016) found that pupils from low socioeconomic backgrounds had significantly lower knowledge scores on sexual education than those from higher socioeconomic backgrounds. To address this gender gap, it is crucial for schools to provide formal sexual education, and for teachers to receive training and resources to effectively teach sexual education. Additionally, parents and guardians also play a critical role in providing sexual education to their children, especially for female pupils who may be less likely to receive sexual education from schools (Onowhakpor and Omuemu, 2019).

Nigeria's school system consists of public and private schools, with private schools more likely to provide comprehensive sexual education than public schools due to their access to resources and qualified teachers (Guttmacher Institute, 2019; Adebowale and Olakitan, 2019). However, the government's emphasis on abstinence-only education has limited the effectiveness of sexual education in both public and private schools. In 2007, the Nigerian government developed a National Sexuality Education Curriculum for primary and secondary schools but the implementation of the curriculum has been poor due to a lack of resources and political will (Okonofua, *et al.*, 2016). Some NGOs and civil society organizations have stepped in to provide sexual education to young people. However, the lack of government support and funding for these organizations has limited their reach and impact (Guttmacher Institute, 2019).



Statement of the Problem

Sexual education encompasses more than just sex; it involves attitudes, values, and behaviours related to sexuality. It can help students understand their physical and emotional changes, develop healthy relationships, and manage their sexual health. Sexual education in schools can prevent teenage pregnancy, sexually transmitted infections, and dropouts. Children who lack sexual education are vulnerable to sexual abuse, which can have negative impacts on their psychological, physical, social, and academic well-being. Sexual abuse is most often perpetrated by males, both adults and children, known or unknown to the victim. Parents and teachers often lack knowledge and training in sexual education, and children may seek information from unreliable sources, leading to misconceptions and vulnerability to abuse. A study aimed to determine the effect of animated storytelling and conventional strategies on pupils' knowledge of sexual education in Ibadan metropolis.

Research Hypotheses

- Ho₁: There is no significant main effect of treatment on pupils' knowledge of sexual education in Ibadan metropolis.
- Ho₂: There is no significant main effect of gender on pupils' knowledge of sexual education in Ibadan metropolis.
- Ho₃: There is no significant main effect of school type on pupils' knowledge of sexual education sexual education in Ibadan metropolis.
- Ho₄: There is no significant interaction effect of treatment and gender on pupils' knowledge of sexual education in Ibadan metropolis.
- Ho₅: There is no significant interaction effect of treatment and school type on pupils' knowledge of sexual education in Ibadan metropolis.
- Ho₆: There is no significant interaction effect of gender and school type on pupils' knowledge of sexual education in Ibadan metropolis.
- Ho₇: There is no significant interaction effect of treatment, gender and school type on pupils' knowledge of sexual education in Ibadan metropolis.

Scope of the Study

The study covered knowledge of pupils' sexual education through the use of animation storytelling in Ibadan metropolis. The study covered Basic Four pupils in both Private and Public schools in Ibadan Metropolis. Children of age 8+ participated in the study.



Significance of the Study

This research highlights the importance of sexual education in lower primary schools, as it can help prevent unwanted sexual experiences and abuse, promote positive body image and acceptance of individual differences, and empower children to make informed decisions about their sexual health. The study suggests that incorporating sexual education into the school curriculum can establish a strong relationship between students, teachers, and schools, and can also help parents feel more confident about their children's safety. Sexual education can also help students understand appropriate and inappropriate behavior from others, as well as physical and emotional changes in themselves. Moreover, teaching sexual education in schools can raise awareness about sexually transmitted diseases, dispel myths surrounding sexual intercourse and menstruation, and potentially lead to a significant reduction in child abuse cases. Overall, sexual education can benefit not only students but also parents, teachers, schools, and society at large.

Theoretical Background

Multimedia Learning Theory

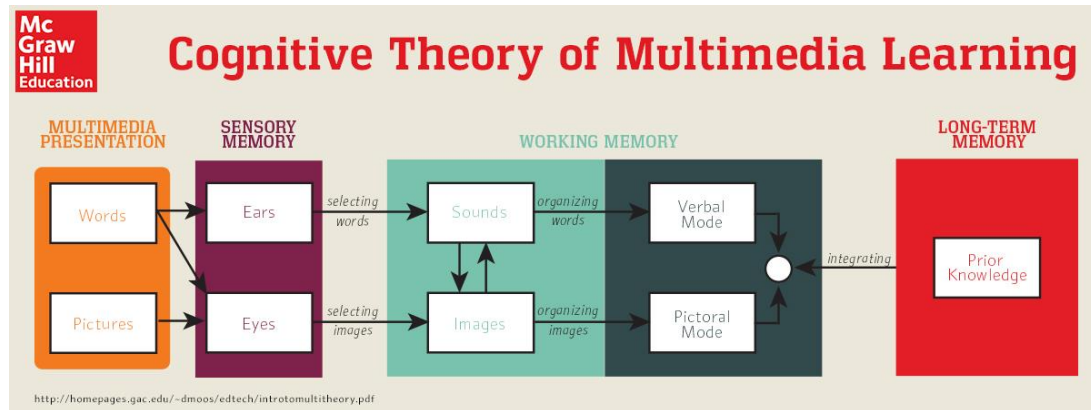
The Multimedia Learning Theory (MLT) proposed by Richard Mayer in 1997 explains how people learn from multimedia presentations that combine visual and auditory elements. According to Mayer, people have two channels for processing information: a visual/pictorial channel and an auditory/verbal channel. MLT emphasizes that multimedia presentations that integrate both visual and auditory elements improve learning compared to presentations that only use one channel. Mayer argues that this is because the human brain processes information better when it receives information through multiple channels simultaneously. (Mayer, 1997).

MLT is based on three assumptions: the Dual-Coding Principle, the Cognitive Load Theory, and the Multimedia Principle. The Dual-Coding Principle states that people can process information using both visual and auditory channels, and that learning improves when both channels are used together. The Cognitive Load Theory suggests that people have a limited capacity for processing information and that the cognitive load should be minimized to avoid overloading learners. The Multimedia Principle suggests that learning improves when information is presented through multiple channels, such as visual and auditory, rather than a single channel (Mayer, 1997).

Overall, the MLT provides a framework for designing effective multimedia presentations that can improve learning outcomes. By incorporating visual and auditory elements, minimizing cognitive load, and presenting information through



multiple channels, designers can create effective and engaging multimedia learning experiences for learners.



Methodology

Research Design

This study adopted a pretest – posttest, control group quasi-experimental research design.

The design is presented as

$O_1 \quad X_1 \quad O_2 \dots E$

$O_3 \quad X_2 \quad O_4 \dots C$

Where O_1 and O_3 represent the pre-test measures

O_2 and O_4 represent the post-test measure

X_1 represents Animated Storytelling strategy

X_2 represents Conventional Method

E represents Experimental Group

C represents Control Group

The study adopted a 2x2x2 factorial matrix which is presented in Table 3.1:

2x2x2 Factorial Design

Independence	School type	Gender	
Experimental	Public	Male	Female
	Private		



Conventional Method	Public		
	Private		

Variables of the Study

Independent variable

One independent variable (method of teaching) manipulated at two level

- i. Animated storytelling method
- ii. Conventional method

There are two moderator variables namely

- i. Gender manipulated at two levels
 1. Male
 2. female
- ii. School type manipulated at two level
 1. Public
 2. Private

Selection of Participants

The population of the study consisted of all primary four pupils in Ibadan metropolis. Two local governments, Ibadan North Local government and Lagelu Local government were randomly selected from Ibadan metropolis. Two schools (One public and one private) were purposely selected given total number of four schools.

The schools were purposely selected based on the following criteria

- i. The school must have at least 20 pupils in their primary four
- ii. The school must have the ICT facilities that will take care of the animated story video.
- iii. The teacher must be willing to participate in the study.

In each school primary four pupils are expected to participate. We have a total of 96 pupils from the sample of the study.



Instrumentation

The following instruments were used to collect the data

- i. Script for animation development
- ii. Instructional guide for teachers on animated storytelling.
- iii. Five lessons animated video package
- iv. Instructional guide for teachers on conventional method
- v. Achievement test on Sexual Education

Method of Data Analysis

Descriptive statistics of frequency count, and percentage, were used to analyse the demographic data while the mean and standard deviation was used to answer the research questions. To test the hypotheses, Analysis of Covariance (ANCOVA) with Scheffe's post-hoc test were adopted, at 0.05 level of significance. Charts and figures were used to represent the data.

Results

Demographic Data Analysis

Table 1: Pupils' Gender

Gender	Frequency	Percentage
Male	48	51
Female	46	49
Total	94	100

Table 1 shows the distribution of pupils' gender. The table shows that there are 48 or (51%) male pupils while there are 46 female pupils which stand for 49% of the sampled participants.

Table 2: School type

School type	Frequency	Percentage
Private	44	47
Public	50	53
Total	94	100



Table 2 shows the distribution of pupils' school type. The table shows that there are 44 pupils from private school which accounted for 47%, also there are 50 pupils from public school which accounted for 53% of the sampled participants.

Testing of Null Hypothesis

Research Hypotheses

H₀₁: There is no significant main effect of Treatment on pupils' knowledge of sexual education in Ibadan metropolis.

Table 3: Summary of Analysis of Covariance (ANCOVA) Showing the Main Effect of Treatment on pupils' knowledge of sexual education

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1022.572 ^a	8	127.821	14.085	.000	.570
Intercept	781.967	1	781.967	86.170	.000	.503
PRS	88.737	1	88.737	9.778	.002	.103
Treatment	97.127	1	97.127	10.703	.002	.112
Gender	.218	1	.218	.024	.877	.000
School type	110.963	1	110.963	12.228	.001	.126
Treatment * Gender	10.398	1	10.398	1.146	.287	.013
Treatment * School type	41.165	1	41.165	4.536	.036	.051
Gender * School type	1.285	1	1.285	.142	.708	.002
Treatment * Gender * School type	19.042	1	19.042	2.098	.151	.024
Error	771.354	85	9.075			
Total	32865.000	94				
Corrected Total	1793.926	93				
a. R Squared = .570 (Adjusted R Squared = .530)						



Table 3 shows that there was a significant main effect of treatment on pupils' knowledge of sexual education ($F_{(1,85)} = 10.70; P < 0.05; \eta^2 = 0.11$). The effect size accounted for 11%, therefore, the null hypothesis 1 was rejected. In order to determine the magnitude of significant main effect across the treatment groups, the estimated marginal means of the treatment groups is presented in Table 4.

Table 4: Showing the Estimated Marginal Means Score of pupils' knowledge of sexual education across all Treatment Groups

Treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Animated story telling	19.38	.445	18.50	20.27
Conventional Strategy	17.04	.513	16.02	18.06
Intercept				
Pre-score Knowledge	13.14	-		
Post-score knowledge	18.21	.320		

Table 4 shows that pupils who were exposed to Animated story telling strategy had the highest mean score ($\bar{X} = 19.38$), while those in the conventional strategy group had the lowest mean score ($\bar{X} = 17.20$). The table also reveals that the pupils' knowledge of sexual education at post-test ($\bar{X} = 18.21$) is higher than their knowledge at the pre-test score ($\bar{X} = 13.14$). The significance of this is that those in animated story telling strategy performed better than those in the conventional strategy.

H₀₂: There is no significant main effect of gender on pupils' knowledge of sexual education in Ibadan metropolis

Table 3 reveals that there is no significant main effect of gender on pupils' knowledge of sexual education ($F_{(1,85)} = 0.024; P > 0.05; \eta^2 = 0.00$). Therefore, hypothesis 2 was not rejected.

H₀₃: There is no significant main effect of school type on pupils' knowledge of sexual education in Ibadan metropolis

Table 5 shows that there was a significant main effect of school type on pupils' knowledge of sexual education ($F_{(1,85)} = 12.23; P < 0.05; \eta^2 = 0.13$). Therefore, the null



hypothesis 3 was rejected. In order to determine the magnitude of significant main effects of school type, the estimated marginal means is presented in Table 5.

Table 5: Showing the Estimated Marginal Means Score of pupils' knowledge of sexual education by school type

School Type	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Private	19.722 ^a	.556	18.617	20.828
Public	16.702 ^a	.519	15.671	17.733

Table 5 shows that private school pupils who participated in the study had a higher mean score ($\bar{X} = 19.72$) than public school pupils who participated in the study ($\bar{X} = 16.72$).

H₀₄: There is no significant interaction effect of Treatment and gender on pupils' knowledge of sexual education in Ibadan metropolis.

Table 3 reveals that there is no significant interaction effect of treatment and gender on pupils' knowledge of sexual education ($F_{(1,85)} = 1.15; P > 0.05; \eta^2 = 0.01$). Therefore, hypothesis 4 was not rejected.

H₀₅: There is no significant interaction effect of treatment and school type on pupils' knowledge of sexual education in Ibadan metropolis

Table 3 shows that there was a significant main effect of treatment and school type on pupils' knowledge of sexual education ($F_{(1,85)} = 4.54; P < 0.05; \eta^2 = 0.05$). Therefore, the null hypothesis 5 was rejected. In order to determine the magnitude of significant main effects of treatment and school type, the estimated marginal means is presented in Table 6.

**Table 6:** Showing the Estimated Marginal Means Score of treatment and school type

Treatment	School type	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
experimental group	Private	20.212 ^a	.734	18.753	21.670
	Public	18.555 ^a	.619	17.324	19.786
control group	Private	19.233 ^a	.768	17.705	20.760
	Public	14.848 ^a	.753	13.351	16.346

Table 4.6 shows that private school pupils in experimental group who participated in the study had a higher mean score ($\bar{X} = 20.21$) than public school pupils ($\bar{X} = 18.56$), while those in the control group who are in private school also had an higher mean score ($\bar{X} = 19.23$) than those in public school ($\bar{X} = 14.85$). However, the table shows that pupils.

H0₆: There is no significant interaction effect of gender and school type on pupils knowledge of sexual education in Ibadan metropolis

Table 4.3 reveals that there is no significant interaction effect of gender and school type on pupils' knowledge of sexual education ($F_{(1,85)} = 0.14; P > 0.05; \eta^2 = 0.002$). Therefore, hypothesis 6 was not rejected.

H0₇: There is no significant interaction effect of treatment, Gender and school type on pupils knowledge of sexual education in Ibadan metropolis

Table 4.3 also reveals that there is no significant interaction effect of treatment, Gender and school type on pupils' knowledge of sexual education ($F_{(1,85)} = 2.10; P > 0.05; \eta^2 = 0.02$) Therefore, hypothesis 7 was not rejected.

Conclusion

This study investigated the animated storytelling and conventional method on pupils' knowledge of sexual education. It can be concluded that from the study that when animation with storytelling is used to teach sexual education, it fosters the knowledge of sexual education than when exposed to conventional method that is teacher-centred.



Furthermore, the study has revealed that animated storytelling strategy helps that pupils to have more knowledge about sexual education, which include their part of the body, self-esteem, care of the body, physical changes in the body (Puberty) and necessary safety education.

Recommendations

Based on the findings of this study, the following recommendations were made:

- i. Sexual education should be introduced to pupils very early from preschool to allow them to have basic knowledge of part of the body.
- ii. Sexual education should be included in our curriculum as a subject and the subject should be taught by teachers who are trained in that aspect.
- iii. Public schools should be provided with basic facility that will enhance the teaching of sexual education with the use of animated storytelling.
- iv. Proper training and awareness should be done on the use of animated storytelling in schools especially in our public school.

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CHAPTER 36

CLASS SIZE AND EFFECTIVE CLASSROOM MANAGEMENT IN JUNIOR SECONDARY SCHOOLS IN ADO-EKITI, NIGERIA

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Abstract

The study examined influence of class size on effective classroom management for sustainable development in Social Studies in junior secondary schools in Ado-Ekiti. The study determined relationship between class size, teachers' classroom management and classroom instruction. The study adopted the descriptive survey research design. The sample for this study consists of 50 teachers from the selected secondary schools in Ekiti State using a multi stage sampling procedure. Face and content validity of the instrument was ensured. The reliability of the instrument was determined through test-retest method and a coefficient value of 0.76 was obtained, which is considered adequate for the reliability of the instruments. The data collected for the study were analysed using descriptive and inferential statistics. The research question was answered using frequency mean and standard deviation. The two research hypotheses postulated were tested using Pearson's Product Moment Correlation Analysis. All hypotheses were tested at 0.05 level of significance. The findings revealed significant relationship between class size and classroom management. There was also a significant relationship between class size and classroom instruction. The study recommended that the State Ministry of Education should embark on periodic supervision of schools by ensuring compliance to minimum standard class size for effective teaching-learning process. In addition, school administrators should ensure high level of instructional supervision through routine visits to classes in order to monitor the class size in line with approved standard and subsequently enhance students' academic performance.



Keywords: *Class size, Classroom management, Effectiveness, Teachers, Sustainable development*

Introduction

The discipline of Social Studies has come to stay in the Nigerian educational scene due to its relevance in holistic child development. It has also traversed several stages of reform and improvement over the past thirty years before reaching the present state, where it is in the Universities and Colleges of education curricula for preparing teachers for teaching it in schools (Ikwumelu, Bassey and Oyibe, 2015). Social Studies, being a virile subject, particularly in junior secondary school, is expected to assume more complexities in scope and dimension just as the nation's urgent and stressful human problems have to be tackled and resolved. The Social Studies curriculum, as it is, needs to be made more relevant to the needs of the students in particular and Sustainable Development Goal (SDG). This however, can only be achieved where teacher-students ratio allows for effective classroom management and delivery of instruction to facilitate effective teaching-learning in schools.

In the recent years, the performance of students in school subjects like Social Studies, especially at junior secondary school level has become an issue of national discourse. One of the observed contributing factors to the poor academic performance may be central to the astronomical increase in school population which also increases the class sizes particularly in public schools. According to Ajani and Akinyele (2014), class size has become a phenomenon often mentioned in the educational literature as an influence on student's feelings and achievement, on administration, quality and school budgets. Educators universally have spotted out class size as important and desirable attribute of effective educational system (Adimonyemma, Akachukwu and Igboabuchi, 2018). Din. (1999) stated that small size classes are regarded as a better educational environment by educators, educational administrators, parents and government officials. Many parents and educators believe that small class size leads to more effective teaching and improves student achievement, Practical experience points to the fact that small classes are easier to manage, easier for teachers to provide individualized help to students, they facilitate teaching effectiveness, and above all mean less work for teachers. These seem to be sufficient reason for any teacher to prefer teaching small classes. The very high student/pupil-teacher ratios common in some developing countries make it virtually impossible for teachers to deliver effectively (Asodike and Onyeike, 2016).

Class size is almost an administrative decision over which teachers have little or no control. Most researchers start from the assumption that the size of the class would prove a significant determinant of the degree of success of students. Many studies have reported that under ideal situation, class size itself appears to be an important factor to students' performance. According to Pritchard cited by Uhrain



(2016) teachers assigned into smaller classes reported that students received more individualized attention, while teachers got to know individual students better and kept track of individual student progress. In turn, students became more engaged because of this conducive and personalized learning environment. Additionally, teachers spent less time on classroom management, which offered additional instructional time for all students in the classroom. In a study conducted by Blatchford, Bassett, and Brown (2011) at both the primary and secondary school level it was found that in smaller classes led to pupils receiving more individual attention from teachers, and having more active interactions with them, which resulted in a high level of student engagement compared with lower level of student engagement in a larger class. Englehart (2007) and Fan (2012) confirmed that in smaller classes, time spent on classroom management was decreased which led to improvement in academic achievement.

Affirming the effect of classroom management, Lazear cited by Eboatu and Ehirim (2018) asserted that smaller classes have less number of disruptions thereby engendering better student/teacher engagement and better student learning than larger classes. Adding more students to a class increases the number of disruptions and decreases the amount of time during which learning can take place because the teacher spends time dealing with these students that cause disruptions. Viewed from another perspective, Hattie (2009) argued that not all interactions between student and teacher will result in improved learning; rather effective interaction is what is needed and which only smaller class sized can achieved. In addition, Beaudoin, Lončarić and SkočićMihić, (2017) observed the number of students in the class displaying problem behaviour as impediment to classroom management in schools across the world these problem behaviours can influence a teacher's perception of their ability to manage the classroom.

Lamenting the implication of large class size on classroom instruction in Nigeria public schools, Adimonyemma, Akachukwu and Igboabuchi (2018) stressed that class size is becoming increasingly unmanageable, putting teachers in an impossible position of giving individual student required attention. They stressed further that the teachers' eye contact with the students in class has become so reduced that some of the poorly motivated students can form number of committees at the back of the class while teaching is going on to engage in non-school discussion. Thus, regular assignments and home works are dreaded by teachers considering the staggering number of books to mark and to record. Hattie. (2009). Agreed that the relationships between teachers and students have the greatest influence on students' educational achievement. The finding implied that teachers faced difficulties in teaching huge classes and that students lacked adequate learning resources to support their academic excellence.

Social Studies in one of the Universal Basic Education (UBE) core school subject which can contribute to nation building efforts in Nigeria according to Ezudu



and Ezegebe (2005). Therefore, Social Studies as a subject is expected to ensure acquisition of relevant body of knowledge which can develop in students, positive values, attitude and skills. Hence, Ezudu and Ezegebe (2005) posited that the objectives of Social Studies are meant to achieve the national objectives in Nigeria. Consequently, Social Studies as an integrated holistic approach to learning offers effective citizenship training needed for national cohesion.

In the view of Titus and Adu (2017) Social Studies as an encompassing subject in the school curriculum is designed to produce well informed citizens who appreciate the culture of the people and the ethos of governance within the society. Social studies education is hoped to be of immense value to the students because of the totality of the education. The subject helps to train the students to think deeply and critically and assess both economic and social issues in the society as they arise (Titus and Adu, 2017). Therefore, because of the multi-disciplinary nature of social studies, it enables the students to formulate sound judgment, draw reasonable conclusions and make the right decisions on their day to day activities.

According to Ezudu and Ezegebe (2005), the implementation of Social Studies curriculum in Junior Secondary School are faced with myriad of problems which include non-availability and use of instructional materials, inadequate of qualified teachers, inappropriate use of teaching method among others. However, the major problem remains how to facilitate effective classroom management and instruction for better learning outcome. This remains a subject of concern among school teachers as there is no clear consensus in the educational research literature whether increasing average class size will have an effect on students' performance particularly in Social Studies. In this regards, some researchers have suggested that class size can have an impact on student standardized achievement scores. In the view of Akabue cited in Osim, Chika, Uchendu, Isaac and Ubi (2012), class size problem is like a vicious cycle that leads to teachers' poor work quality, which results in students' poor learning outcomes and finally culminates in turning out half-baked products into the tertiary institutions and the labour markets. Bernard and Nestory (2022). Stated that the teacher who is the classroom manager should therefore, have the number of students he/she can effectively control, supervise and teach at any given period. It is often perceived that smaller classes have less number of disruptions thereby engendering better student/teacher engagement and better student learning than larger classes (Kenni 2020). Wang and Calvano (2022), in their opinion, agreed that class size may also influence teachers' interpersonal styles, which in turn may affect their interactions with the students. For example, class size impacts how much time an instructor devotes to understanding and addressing the needs and interests of individual students. It is on this note that Asiyai and Ajudeonu (2010) posited that academic performance of pupils depends on the effectiveness of instruction provided by teachers. This can only be achieved in a conducive classroom with a manageable size



Statement of the Problem

In pursuit of sustainable development goal in world globally and in Nigeria in particular, researching into the right ratio of teachers to students is critical for the success of schools and the academic achievement of students, particularly in Social Studies. This is because class size impacts on classroom management, classroom instruction, and the academic achievement of the students. It appears that the teacher-student ratio in secondary schools nowadays exceed the maximum class size of 30 as stipulated by the National Policy on Education (2004). It appears that if the class size of the class is too large the management of the classroom may become a serious burden or herculean task for the teacher during the teaching and learning of Social Studies since majority of students may likely offer the subject.

Close observation revealed that most of the classrooms in secondary schools seem to be overcrowded; as a result it may not be appropriate for effective classroom management at improving students' participation and learning outcomes to enhance national technological growth with the view of "Sustainable Development Goals" (SDG) in mind. It is against this backdrop that this study is designed to examine the influence of class size on teacher's classroom management in Social Studies in Ado-Ekiti Nigeria.

Research Question

The following research question has been raised in the study

1. What are the benefits of smaller class sizes over large class sizes?

Hypotheses

The following research hypotheses have been postulated in this study

1. There is no significant relationship between class size and classroom management in Social Studies.
2. There is no significant relationship between class size and classroom instruction in Social Studies.



Methodology

The study adopted the descriptive survey research design. The sample for this study consists of 50 teachers from the selected secondary schools in Ado-Ekiti, Ekiti State a multi stage sampling procedure was used for the study. First stage, five schools were selected using simple random sampling technique and at second stage, ten teachers were selected from each of the schools using stratified random sampling technique (5males and 5 females). A research instrument titled “Class Size and Sustainable Classroom Management in Secondary Schools (CSSCMSS)” was used to collect data for this study. The CSSCMSS is divided into two sections: A and B, Section ‘A’ obtained information about the teachers’ socio-demographic data such as gender, years of experience and highest qualification status. Section B consists of 7 structured items on variables highlighted for the study such as what are the benefits of smaller class sizes over large class sizes, using Likert Scale scoring format ranging from Strongly Agree – 4, Agree – 3, Strongly Disagree –2 and Disagree –1. The face and content validity of the instrument was ensured as copy was given to an expert in the field of Test Measurement and Evaluation so as to ensure the appropriateness and correctness of the instrument to measure what it supposed to measure. The reliability of the instrument was determined through test-retest method and a coefficient value of 0.76 was obtained. This is considered adequate for the reliability of the instrument. The data collected for the study were analyzed using descriptive and inferential statistics. The research question was answer using frequency counts and percentages, mean and standard deviation. The two research hypotheses postulated were tested using inferential statistics involving Pearson’s Product Moment Correlation Analysis. All hypotheses were tested at 0.05 level of significance.

Results

Question 1: What are benefits of smaller class sizes over large class sizes?

Table 1: Benefits of smaller class sizes over large class sizes

S/N	ITEMS	SD	Mean
1	I find it easier to manage students’ behaviour in a small class size	3.32	.587
2	Small class sizes encourage the use of group activities	2.94	.793
3	Smaller class size creates a more positive learning environment for students	3.10	.814
4	Smaller classes allow more time for teacher to spend on Social Studies skills which can increase student achievement	3.00	.782



5	It is easier for me to provide individualized instruction in a small class size	3.22	.790
6	Smaller classes benefit all students because of individual attention from teacher in a Social Studies lesson	2.86	.756
7	Smaller classes provide students with the best possible learning environment for achievement in Social Studies	3.20	.606

Table 1 shows that the mean rating of benefits of smaller class sizes over large class sizes ranges from 2.86 – 3.32. More of the respondents agreed that it is easier to manage students' behaviour in a small class size (mean=3.32) and that provide individualized instruction in a small class size (mean = 3.22). They also agreed that smaller class size creates a more positive learning environment for students (mean = 3.10) and least agreed that Smaller classes benefit all students because of individual attention from teacher in a Social Studies class. However, using a cut-off mean score of 2.50 for the rating scale, all the items had mean scores above the cut-off point. This implies that easier way of managing students' behaviour, encourage the use of group activities, enhanced positive learning environment for students, allow teachers spending for more time for increased students' achievement, provision of individualised instruction, enhance individual attention from teacher in a Social Studies class and provide students with the best possible learning environment for achievement in Social Studies are the benefits of smaller class sizes over large class sizes.

Hypothesis 1: There is no significant relationship between class size and classroom management in Social Studies.

Table 2: Pearson Correlation of class size and classroom management

Variable	N	Mean	SD	r_{cal}	r_{table}
Class size	50	64.62	4.25	0.591*	0.288
Classroom management	50	21.64	1.75		

* $p < 0.05$

Table 2 shows that $r_{cal}(0.591)$ is greater than $r_{table}(0.288)$ at 0.05 level of significance. The null hypothesis is rejected. This implies that there was a significant relationship between class size and classroom management. The relationship between class size and classroom management is moderate and statistically significant in a positive direction.



Hypothesis 2: There is no significant relationship between class size and classroom instruction in Social Studies.

Table 3: Pearson Correlation of class size and classroom instruction

Variable	N	Mean	SD	r_{cal}	r_{table}
Class size	50	64.62	4.25	0.795*	0.288
Classroom instruction	50	21.58	1.68		

* $p < 0.05$

Table 3 shows that $r_{cal}(0.795)$ is greater than $r_{table}(0.288)$ at 0.05 level of significance. The null hypothesis is rejected. This implies that there was a significant relationship between class size and classroom instruction. The relationship between class size and classroom instruction is high and statistically significant in a positive direction.

Discussion

The study showed that a better way to manage students' behaviour, encourage the use of group activities, enhanced positive learning environment for students, allow teachers spending for more time for increased students' achievement, provision of individualized instruction, enhance individual attention from teacher in a Social Studies class and provide students with the best possible learning environment for achievement in Social Studies were the benefits of smaller class sizes over large class sizes. The finding agrees with the study of Asiyai and Ajudeonu (2010) who posited that academic performance of pupils depends on the effectiveness of instruction provided by teachers which can only be achieved in a conducive classroom with a manageable size.

The study showed that there was a significant relationship between class size and classroom management. This in agreement with the findings of Uhrain (2016), Englehart (2007) and Fan (2012), Eboatu and Ehirim (2018) who asserted that smaller classes have less number of disruptions thereby engendering better student/teacher engagement, better learning and improvement in academic achievement of students.

The study showed that there was significant relationship between class size and classroom instruction. This implies that moderate class size will enhance the quality of instructional delivery. The finding is in consonance with the outcome of the study of Adimonyemma, Akachukwu and Igboabuchi (2018) that class size affects teacher's ability to manage the instructional process.



Conclusion and Recommendations

From the findings of this study, it was concluded that small class size enhanced effective teaching – learning, classroom management and quality classroom instruction, all which eventually increases students’ academic performance. Sequel to the findings of the study, the following recommendations were made.

1. The education stakeholders (e.g. government, NGOs, philanthropists, school administrators and parents) should show greater commitment to the provision of classroom facilities in public secondary schools in order to reduce overcrowding resulting from growing school enrolment for enhanced instructional process and students’ academic performance in schools.
2. The State Ministry of Education should embark on periodic supervision of schools by ensuring compliance to minimum standard class size for effective teaching-learning process.
3. School administrators should ensure high level of instructional supervision through routine visits to classes in order to monitor compliance with the standard in class size and subsequently enhance students’ academic performance.

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CHAPTER 37

MANAGING THE KEY PERFORMANCE INDICATORS AMONG ACADEMIC STAFF IN NIGERIA UNIVERSITIES

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Abstract

The dynamics of managing the performance of intellectuals in the evolving global knowledge economies is becoming apparent and pronounced. The Key Performance Indicators (KPIs) seem unpopular among other members of the university community and the academic staff seems not to be exploring in full, the performance indicators that measure their productivity. Hence, the important performance metrics for the academic staff at Nigerian universities were examined in this paper. To gather information, a thorough literature review was conducted. We conducted many searches across websites and databases. Concepts, beliefs, observations, and reports were gathered, noted, evaluated, and discussed; conclusions were drawn as a result. A review of the literature on the particular key performance indicators used in the university system and their significance was conducted. In addition, the theoretical underpinnings of KPIs were advocated in relation to the employment position of an academic staff member in a university. Within the Nigerian university system, KPI management techniques for academic personnel were proposed. The conclusion drawn from the aforementioned is that managing the KPIs of academic staff in Nigerian universities is essential to their performance in all facets of performance expectations. Advancements were made regarding the encouragement of the supply of an accommodating work environment for the academic personnel.

Keywords: Key Performance Indicators (KPIs), Academic staff, Nigerian universities, Goal-setting, Performance management

Introduction

In today's rapidly changing world, the importance of measuring and tracking performance cannot be overstated. Key Performance Indicators (KPIs) are widely recognized as one of the most effective ways to measure performance in any



organization, including academic institutions. The purpose of this essay is to discuss the plausible strategies that could be deployed in managing KPIs among academic staff in Nigeria universities, having implications for educational managers.

Academic institutions in Nigeria, like in most other countries, are expected to deliver quality education to their students. To achieve this, they must have a clear understanding of their objectives and goals, as well as the measures they will use to assess their performance (Adetoro and Adejumo, 2017). In Nigeria universities, the academic staff is a critical component of the education system, and their performance has a significant impact on the quality of education provided to students. Therefore, it is essential to manage KPIs among academic staff to ensure that they are performing optimally. KPIs are specific metrics used to measure performance against predefined objectives or goals (Okunola and Oladipo, 2018). In academic institutions, KPIs are used to measure the performance of academic staff against specific objectives such as research output, teaching quality, student satisfaction, and community engagement. By setting and monitoring KPIs, academic institutions can ensure that their staff is working towards their goals and objectives and continuously improving their performance (Ikeije and Ezejiofor, 2016).

The Importance of Managing KPIs among Academic Staff in Nigeria Universities

Managing KPIs among academic staff in Nigeria universities is critical for several reasons. Firstly, KPIs provide a clear understanding of the institution's objectives and goals. By setting specific metrics, academic institutions can communicate their priorities to academic staff, ensuring that everyone is working towards the same goals (Ofogebu and Onyishi, 2019; Fapohunda, 2015). KPIs also provide a clear picture of the progress being made towards achieving these goals, allowing academic institutions to identify areas that need improvement (Abdulkareem Yusuf and Ogbudinkpa, 2017). Secondly, managing KPIs among academic staff in Nigeria universities ensures that performance is measured objectively (Girma, Lodesso and Sorsa, 2016). Academic institutions can use KPIs to evaluate the performance of academic staff without bias or subjectivity. This ensures that promotions, bonuses, and other rewards are based on performance and merit, rather than personal relationships or other factors.

Thirdly, managing KPIs among academic staff in Nigeria universities helps to identify areas that need improvement. Measuring performance against specific metrics, academic institutions can identify areas where academic staff is struggling and provide support and resources to help them improve. This can help to improve the overall performance of academic staff and enhance the quality of education provided to students (Igbojekwe and Ugo-Okoro, 2015). Furthermore, managing KPIs among



academic staff in Nigeria universities ensures accountability. By setting specific metrics, academic institutions can hold academic staff accountable for their performance. This helps to create a culture of accountability where academic staff is motivated to perform at their best and take responsibility for their performance (Omojola, 2019). This can improve overall performance, enhance the reputation of the institution, and create a more transparent and effective system for assessing performance.

Key Performance Indicators for Academic Staff in Nigeria Universities

Key Performance Indicators (KPIs) for academic staff in Nigerian universities can vary depending on the institution's objectives and goals. However, there are commonly used KPIs in the academia and these include research output, teaching quality, community service, and professional development.

Research Output

Research output is one of the most important KPIs for academic staff in Nigerian universities. It is measured by the number of research papers published in peer-reviewed journals, books, book chapters, conference proceedings, and other academic publications. This KPI helps to measure the quality and impact of an academic staff's research, as well as their contribution to the knowledge and development of their field (Daramola, 2015; Owolabi, 2018). Research output is a critical key performance indicator (KPI) among Nigerian academic staff as it helps to measure the quality and quantity of academic research produced by academic staff. The KPI is crucial in assessing academic staff's contribution to knowledge production and dissemination and their research capacity building in the university. Research output is measured using various metrics such as the number of publications in peer-reviewed journals, the number of citations, the impact factor of journals, the h-index of the researcher, and the number of research grants secured (Ogundipe and Omole, 2014). The KPI has become even more important in recent years, as universities in Nigeria strive to increase their global rankings and compete with other universities worldwide.

One of the challenges facing research output as a KPI among Nigerian academic staff is the lack of access to up-to-date research resources and tools. Many Nigerian universities lack access to academic journals and databases, making it difficult for academic staff to carry out research and publish in high-impact journals (Chukwuemeka, Chekwubechukwu and Obuteaku, 2018). This limitation also affects the citation rate of Nigerian academic staff, as researchers in developed countries may have more access to research resources and tools, leading to higher citation rates. To encourage and support research output as a KPI among Nigerian academic staff,



universities should provide more access to research resources and tools, offer research grants and incentives, and prioritize research funding (Abubakar, Haruna and Abdu, 2022). Additionally, mentorship and collaboration with international researchers can help to improve research quality and impact, and increase citation rates for Nigerian academic staff.

Teaching Quality

Teaching quality is another important KPI for academic staff in Nigerian universities. It is measured by student feedback, teaching evaluations, and course completion rates. This KPI helps to ensure that academic staff is providing high-quality education to students, and it can be used to identify areas where academic staff may need additional support or training (Uche & Igbokwe, 2018). Teaching quality is another essential key performance indicator (KPI) among Nigerian academic staff as it measures the effectiveness of academic staff in imparting knowledge and skills to students. The KPI is crucial in ensuring that students receive high-quality education and graduate with the necessary skills and competencies to succeed in their careers (Oduwole and Bamiselu, 2020). Teaching quality can be measured using various metrics such as student feedback, student retention rates, graduation rates, and teaching awards received by academic staff. Nigerian universities have implemented several measures to improve teaching quality, including training programs for academic staff, the adoption of technology-based teaching tools, and the establishment of teaching and learning centers (Stirruph and Omade, 2021).

However, one of the challenges facing teaching quality as a KPI among Nigerian academic staff is the lack of adequate teaching resources and infrastructure. Many Nigerian universities lack modern teaching facilities, making it difficult for academic staff to deliver high-quality lectures and practical sessions. This limitation also affects the quality of student learning and may lead to poor academic performance. Despite the challenges, some Nigerian academic staff are excelling in teaching quality (Igbojekwe and Ugo-Okoro, 2015).

To encourage and support teaching quality as a KPI among Nigerian academic staff, universities should invest in modern teaching facilities and infrastructure, provide training and development programs for academic staff, and prioritize teaching and learning in university policies and strategies. Additionally, student feedback and evaluation should be regularly conducted to assess teaching quality and identify areas for improvement.

Community Service

Community service is another important KPI for academic staff in Nigerian universities. It is measured by the number of community outreach programs, public



lectures, and other initiatives that academic staff are involved in. This KPI helps to ensure that academic staff is actively engaged with their local community and is using their expertise to benefit society (Owoyemi and Ojo, 2020). Studies have reported (Okoroji and Eseonu, 2016) that community service is an essential key performance indicator (KPI) among Nigerian academic staff as it measures the extent to which academic staff contribute to the development of their local communities and the wider society. Community service encompasses a range of activities, including volunteering, community outreach programs, and engagement with local businesses and organizations.

Nigerian universities have recognized the importance of community service as a KPI and have implemented several measures to encourage and support academic staff in engaging with their communities. Some of these measures include providing funding for community service programs, recognizing and rewarding academic staff for their contributions to the community, and establishing partnerships with local organizations and businesses. Community service is not only beneficial to the local community but also to academic staff and their universities (Keerberg, Kiisla and Mäeltseemes, 2013; Adekalu, *et. al.*, 2018). Engaging in community service can enhance the reputation of academic staff and their universities, improve relationships with local stakeholders, and provide opportunities for research and innovation.

However, one of the challenges facing community service as a KPI among Nigerian academic staff is the limited resources and support available for community service programs. Many academic staff may struggle to balance their academic responsibilities with community service activities, and universities may not provide sufficient funding or support for such programs (Adekalu, *et. al.*, 2018; Gorski and Metha, 2016). To encourage and support community service as a KPI among Nigerian academic staff, universities should provide funding and support for community service programs, recognize and reward academic staff for their contributions to the community, and establish partnerships with local organizations and businesses (Ifedili and Ifedili, 2015; Kearney, 2015). Additionally, universities should prioritize community service in their policies and strategies and encourage academic staff to engage in community service activities that align with their research and teaching interests.

Professional Development

Professional development is also an important KPI for academic staff in Nigerian universities. It is measured by the number of professional development courses, workshops, and conferences attended by academic staff. This KPI helps to ensure that academic staff is continually improving their skills and knowledge, staying up-to-date with the latest developments in their field, and contributing to the growth and development of their institution (Armstrong and Baron, 2005; Adeyemi and Adejumo,



2019). Professional development is an important key performance indicator (KPI) among Nigerian academic staff as it measures their commitment to continuous learning and improvement in their professional skills and knowledge (Utomi, 2019). Professional development can encompass a wide range of activities, including attending conferences and workshops, engaging in research collaborations, pursuing advanced degrees or certifications, and participating in mentoring or coaching programs (Egwu, 2017).

Nigerian universities recognize the importance of professional development as a KPI and have implemented several measures to support academic staff in their professional development efforts. Some of these measures include providing funding for professional development activities, offering sabbatical leave to pursue advanced degrees or research projects, and establishing mentoring or coaching programs (Ogbuabor, Eze and Agu, 2020). Professional development is beneficial not only to academic staff but also to their universities and students. Engaging in professional development activities can enhance the quality of teaching and research at universities, improve the employability and career prospects of academic staff, and provide opportunities for collaboration and innovation.

Several studies have highlighted the importance of professional development as a KPI among Nigerian academic staff. For example, a study by Ogbuabor, *et al.*, (2020) found that professional development significantly impacted the job satisfaction and productivity of academic staff at Nigerian universities. The study recommended that universities should prioritize professional development in their policies and strategies to improve the performance and job satisfaction of academic staff. Another study by Adeyemi and Adejumo (2019) found that mentoring and coaching programs were effective in supporting the professional development of academic staff at Nigerian universities. The study recommended that universities should establish mentoring and coaching programs to support the professional development of academic staff.

To encourage and support professional development as a KPI among Nigerian academic staff, universities should provide funding and support for professional development activities, offer sabbatical leave to pursue advanced degrees or research projects, establish mentoring or coaching programs, and prioritize professional development in their policies and strategies.

Theoretical Framework on KPIs among the Nigerian Academic Staff

The use of key performance indicators (KPIs) to measure and manage the performance of academic staff in Nigerian universities can be understood through



several theoretical frameworks (Locke & Latham, 2002). Below are some theoretical frameworks that can be applied in the context of KPIs among Nigerian academic staff:

Goal-Setting Theory: This theory suggests that setting specific and challenging goals for employees can lead to improved performance. The use of KPIs as specific and measurable targets for academic staff can be seen as an application of this theory. The Goal-Setting Theory is highly relevant to the use of key performance indicators (KPIs) among academic staff in Nigerian universities. The theory suggests that setting specific and challenging goals can lead to improved performance and that feedback and monitoring of progress towards those goals are also important factors in motivating individuals to achieve them (Locke and Latham, 2013; Shaiza and Giri, 2016). In the context of Nigerian universities, KPIs can serve as specific and measurable targets that academic staff can strive to achieve. By setting challenging yet achievable goals and providing regular feedback and progress monitoring, KPIs can motivate academic staff to perform better and improve their overall productivity (Chetty, 2019; Lunenburg, 2011).

Several studies have highlighted the relevance of the Goal-Setting Theory to the use of KPIs among academic staff in Nigerian universities. For instance, in a study by Ofoegbu and Onyishi (2019) on the impact of KPIs on academic staff performance in Nigerian universities, the authors found that the use of KPIs significantly improved the performance of academic staff. The study concluded that the adoption of the Goal-Setting Theory was instrumental in the success of the KPIs as a performance management tool. Similarly, a study by Ikeje and Ezejiofor (2016) found that the use of KPIs in Nigerian universities could improve the quality of education and enhance the productivity of academic staff. The study recommended the adoption of the Goal-Setting Theory to ensure that the KPIs set were specific, challenging, and achievable. In addition to these studies, other research has also highlighted the relevance of the Goal-Setting Theory to the use of KPIs in various organizational contexts, including healthcare, government agencies, and private corporations (Locke and Latham, 2002). These studies suggest that the principles of the theory are applicable across different settings and can lead to improved performance.

Performance Management Theory: This theory suggests that performance management systems, which include the use of KPIs, can be used to motivate and manage employee performance. This theory suggests that the use of KPIs can provide a clear direction for academic staff and help them to focus on the most important aspects of their work. Performance management theory is highly relevant to the use of key performance indicators (KPIs) among academic staff in Nigerian universities (Nwokocha and Egwuonwu, 2015). Performance management theory is a systematic approach to managing individual and organizational performance, which involves setting objectives, monitoring progress, and providing feedback to improve performance. In the context of Nigerian universities, performance management theory



can provide a framework for implementing KPIs that are aligned with the goals of the institution and the performance expectations of academic staff. By setting specific and measurable KPIs, monitoring progress, and providing feedback to academic staff, performance management theory can help to improve their performance and productivity (Awan, *et. al.*, 2020; Njagi and Muna, 2021).

Several studies have highlighted the relevance of performance management theory to the use of KPIs among academic staff in Nigerian universities. For instance, in a study by Daramola and Ayoade (2018) on the impact of performance management on the performance of academic staff in Nigerian universities, the authors found that the use of performance management practices, including KPIs, led to improved performance among academic staff. In the same vein, a study by Nwokocha and Egwuonwu (2015) found that the use of performance management practices, including KPIs, could enhance the productivity of academic staff in Nigerian universities. The study recommended the adoption of performance management theory as a framework for implementing KPIs in Nigerian universities. In addition to these studies, other research has also highlighted the relevance of performance management theory to the use of KPIs in various organizational contexts, including healthcare, government agencies, and private corporations (Armstrong and Baron, 2004). These studies suggest that the principles of the theory are applicable across different settings and can lead to improved performance.

Undoubtedly, Goal-Setting and performance management theories are highly relevant to the use of KPIs among academic staff in Nigerian universities. By adopting the principles of the theories, Nigerian universities can set specific and measurable KPIs, monitor progress, and provide feedback to academic staff to improve their performance and productivity.

Interestingly, these theoretical frameworks provide a basis for understanding the use of KPIs among academic staff in Nigerian universities. By applying these frameworks, Nigerian universities can develop effective strategies for managing the performance of their academic staff and improving the quality of education they provide.

Educational Management Strategies for Managing Key Performance Indicators among Nigerian Academic Staff

Effective educational management strategies are essential for ensuring the successful implementation and management of key performance indicators (KPIs) among academic staff in Nigerian universities. Below are some educational management strategies that can be used to facilitate the effective implementation and management of KPIs in Nigerian universities:



1. **Establish Clear Expectations:** Universities should establish clear expectations for academic staff regarding KPIs. This should be done through the development of performance indicators that are aligned with the university's mission and goals (Alabi, 2019).
2. **Provide Adequate Training:** Academic staff need adequate training to understand the KPIs and how they can be achieved. This can be achieved through workshops, seminars, and conferences that focus on professional development.
3. **Offer Incentives:** Universities should offer incentives to academic staff who meet or exceed the KPIs. These incentives can include promotions, bonuses, and recognition.
4. **Regular Assessment:** Regular assessment of the KPIs is essential to ensure they are on track. This should be done through regular evaluations of academic staff and their work.
5. **Feedback and Support:** Providing feedback and support to academic staff can help them improve their performance and meet their KPIs. This can be done through mentoring and coaching programs, as well as performance evaluations.
6. **Collaboration and Communication:** Collaboration and communication among academic staff, departments, and faculties can facilitate the sharing of best practices and knowledge, which can help achieve the KPIs.
7. **Use of Technology:** The use of technology, such as learning management systems, can help track and manage KPIs, as well as provide resources and support for academic staff.

These educational management strategies can help Nigerian universities successfully implement and manage KPIs among academic staff. By establishing clear expectations, providing adequate training, offering incentives, regular assessment, feedback and support, collaboration and communication, and the use of technology, Nigerian universities can create a culture of continuous improvement and performance excellence.



Conclusion

In conclusion, managing KPIs among academic staff in Nigeria universities is essential for ensuring that the institution's objectives and goals are achieved, providing an objective means of measuring performance, identifying areas that need improvement, and ensuring accountability. By setting specific metrics and measuring performance against these metrics, academic institutions can improve the quality of education provided to students, enhance the reputation of the institution, and create a more transparent and effective system for assessing performance.

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CHAPTER 38

THE INFLUENCE OF PARENTS' EDUCATIONAL LEVEL, PEER GROUP AND GENDER ON ENGLISH PROFICIENCY AMONG JUNIOR SECONDARY SCHOOL STUDENTS IN IBADAN, NIGERIA

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Abstract

This study aims to investigate the influence of parents' educational status, peer group and gender on English language proficiency among junior secondary school students in Ibadan, Nigeria. Data was collected from a random sample of 100 students drawn from 5 public junior secondary schools in Ibadan North Local Government Area. The interaction mindset questionnaire, used to get information on the influence of peer group influence on English language proficiency. The structured questionnaire used for data collection was made up of four sections: demographic information, parents' educational status, peer group influence, and English language proficiency test. The study adopted descriptive research design of correlation type. Data was analysed using the correlation and regression analysis. The results showed that there was a significant influence of parental educational status, peer group, and gender on English language proficiency among junior secondary school students in Ibadan, Nigeria. The implications of these findings were discussed and recommendations were made.

Keywords: *English proficiency, Parents' educational level, Peer group, Gender, Junior secondary school students in Ibadan*



Introduction

Language is a central element to learning, as one cannot communicate understanding of a certain subject if there is no comprehension of language in any form. Language proficiency is the ability of an individual to use language with a level of accuracy which transfers meaning in production and comprehension. Abdullah and Seyed (2012) stated that in the sixties, language proficiency was classified as the ‘four skills’, which are listening, speaking, reading and writing, especially for curriculum design and testing (Stem, 1991). Stem (1991) assumed that language proficiency range is from zero to full bilingual proficiency. Stem (1991) offers five language proficiency levels; (1) elementary proficiency; (2) limited working proficiency; (3) minimum professional proficiency; (4) full professional proficiency; and (5) native or bilingual proficiency. Developing proficiency in any language starts with word learning. By the time they are twelve months old, children learn their first words and by the time they are 36 months, they know over 900 words with their utterances intelligible to people who interact with them the most (Bloom and Lori, 1998; Owens 2016). In recent times, there has been a rise in the need to enhance second language (L2) by students who desire to study in foreign countries. This is the case with Nigerian youths who travel to especially, English-speaking countries like America, Canada, the United Kingdom, to mention but a few. Even when language is not their primary goal for travelling, they are exposed to unfamiliar linguistic codes and practices in various degrees. According to Chandara 2016, English has come to be the international language and the language of global communication, due to various reasons which are political, economic and technical.

Globalization has made English a compulsory ingredient of a successful personality as it is an important tool in international communication all over the world. But high proficiency in spoken and written English is regarded as principal prerequisite qualification. So, English is still the number one language in the entire world, not only for employment but also for students who desire to study in tertiary institutions, especially in countries like Nigeria where English is the official language. Despite the importance of English language, it has been observed secondary students still have challenges with their English proficiency. This study therefore, looked at four factors that could influence English proficiency among early adolescents in public secondary schools; including: parents’ educational level, peer group and gender.

The development of any child is greatly influenced by the social environment, which include family, school and community. The roles of parents and other caregivers who serve as the first teachers of children cannot be over-emphasised, and this continues even when they start school. In addition, parents need to become collaborative partners with teachers in order to provide an environment that assists their children’s performance at school. Previous studies, (Kalayci and Oz 2018,



Panferov 2010) suggested that parental involvement has considerable effect on children's L2 learning and development. Children learn their first set of words from the home, mostly from the parents and this is where parents educational level is important especially in the learning of English language (L2). The importance of reasonable level of educational is getting greater in the society in which for a successful, proved and invariable future it is needful to have skills and education in high levels. Besides the school, the most prominent source of children's learning, support and encouragement is the home (Jalili, 2017). It is easy for any child to learn their mother tongue (L1) from the parents even when they are uneducated and the mother tongue can also be learnt from the immediate environment. Learning of the English language at home requires that the parents have a considerable level of education, this is because parents who are educated in Nigeria especially, communicate with the children with the English language and this goes a long way to help the child in the mastery of the English language. The child being adequately equipped from home, finds English learning in school easier and this leads to proficiency in the L2.

Another factor of interest which could influence proficiency in the English language among junior secondary school students is the peer group. In recent years, attention has been drawn to the value of peer influences and interactions as facilitators of language development. Emerging evidence suggests that peers make significant contributions to one another's language skills (Justice et al. 2011 and Yoshikawa, 2014). However, it is unclear how peer interaction benefits children with varied language skill levels. While some suggest that children with high baseline language skills benefit more significantly from peer interactions, others suggest that children with lower baseline language skills show largest gains (Masburn, *et al.* 2009; Schechter and Bye, 2007). Peer relations or friendships, are an essential element in human lives across cultures. By middle childhood (around the age of 10), it is estimated that more than 30% of a child's interaction entail peers, and the portion increases as the child grows (Gifford-Smith and Brownell, 2003). It is often believed that positive peer relationships, such as supportive, benevolent, and mutually respectful relationships, foster children's adaptive and prosocial behaviours as well as learning and problem-solving skills. social theory, for instance, predicts that observational learning can be facilitated if a learner can observe friends with positive relationships (Berndt, 2002). The influence of peers on students' learning and achievement has long been of interest to parents, educators and researchers. Classroom decisions about how grouping of students, whether through formal tracking or informal reading activities, are often guided by beliefs about how students interact and learn from each other (Cooc and Kim, 2016). Bartam (2016) argues that teenage peer pressure often works against success in language learning and that it may produce negative attitudes, often because of the performance element involved in language learning, which may engender feelings of embarrassment or insecurity. In second language learning, peer pressure often undermines the goals set by parents and



teachers. Peer pressure often reduces the desire of the student to work towards native pronunciation, because the sounds of the target language may be regarded as strange.

Gender is another factor considered for this study, as influencing language proficiency. More recently, differences in favour of females have been found in variety and frequency of language learning strategy use, positive attitude towards learning an L2. Some general trends have also been found about the differences between females and males regarding their speech: in pronunciation, females often speak more slightly 'correctly' than males; in vocabulary, some words are more used by males than females; and in conversation and speaking behaviour, females seem to be more cooperative than interruptive (Baker and Hengeveld, 2012). Moreover, females speak without stress and pause, while males' speech contains so many interruptions, wrong pronunciation, and grammar (Nashab and Motlagh, 2017).

Purpose of the Study

The main objective of this paper was to investigate the influence of parents' educational level, peer group and gender on English language proficiency among junior secondary school students in Ibadan, Nigeria. Specifically, it:

- a. investigated the relationship between parents' educational level and English language proficiency among junior secondary school students in Ibadan, Nigeria
- b. determined the relationship between peer group and English language proficiency among junior secondary school students in Ibadan, Nigeria
- c. examined the relationship between gender and English language proficiency among junior secondary school students in Ibadan, Nigeria
- d. investigated the joint contribution of parents' educational level, peer group and gender on English language proficiency among junior secondary school students in Ibadan, Nigeria
- e. examined the relative contribution of parents' educational level, peer group and gender on English language proficiency among junior secondary school students in Ibadan, Nigeria.

Research Hypothesis

The following research hypothesis were tested at 0.05 level of significance.

1. There will be no significant relationship between parents' educational level and English language proficiency among junior secondary school students in Ibadan, Nigeria.



2. There will be no significant relationship between peer group and English language proficiency among junior secondary school students in Ibadan, Nigeria.
3. There will be no significant relationship between gender and English language proficiency among junior secondary school students in Ibadan, Nigeria,

Research Questions

1. What is the joint contribution of parents' educational level, peer group and gender on English language proficiency among junior secondary school students in Ibadan, Nigeria?
2. What is the relative contribution of parents' educational level, peer group and gender on English language proficiency among junior secondary school students in Ibadan, Nigeria?

Methodology

The study adopted the descriptive design of correlational type, concerned with measuring the degree between two or more variables for the purpose of making predictions of the independent variables on the dependent variable, English language proficiency among junior secondary school student in Ibadan, Nigeria. The population of this study comprised of all junior secondary school students in Ibadan, Nigeria. The sample consisted of 100 students selected from schools in Ibadan

Question on grammar, vocabulary development and phonics, which were extracted from past question National Examination Council (NECO). The interaction mindset questionnaire, used to get information on the influence of peer group influence English language proficiency. This was adapted and revalidated through a pilot test with a reliability of 0.76. The survey took a form of a 5-likert scale (1= strongly disagree; 2=disagree; 3=undecided; 4= agree; 5= strongly agree). Parents' educational level and gender information were gotten from the demographic section. Data was analysed, using correlation and regression analysis at 0.05 level of significance.

Results

Hypothesis One: There will be no significant relationship between parents' educational level and English language proficiency.

**Table 1:** Descriptive Statistics and Correlations among the variables

S/N	1	2	3	4	Mean	SD
ParEduca	1				43.48	10.47
Peergroup	.019	1			20.54	2.50
Gender	.036	.395**	1		23.68	3.04
EngProfic	.210**	.313**	.134**	1	67.02	3.25

The results from Table 1 showed that there was significant relationship between parents' educational level and English language proficiency of the participants. $r = 0.210$, $df = 234$ and $p < 0.05$ and since $p < 0.05$ the researcher concluded that there was significant relationship between parents' educational level and English language proficiency of the participants.

Hypothesis Two: There will be no significant relationship between gender and English language proficiency of the participants.

The results from Table 1 showed that there was significant relationship between gender and English language proficiency of the participants. $r = 0.313$, $df = 234$ and $p < 0.05$ and since $p < 0.05$ the researcher concluded that there was significant relationship between peer group and English language proficiency of the participants.

Hypothesis Three: There will be no significant relationship between peer group and English language proficiency of the participants.

The results from Table 1 showed that there was significant relationship between peer group and English language proficiency of the participants. $r = 0.134$, $df = 234$ and $p < 0.05$ and since $p < 0.05$ the researcher concluded that there was significant relationship between gender and English language proficiency of the participants.

Research Question One

What is the joint contribution of parents' educational level, gender and peer group on English language proficiency of the participants?

**Table 2:** Joint contribution of the independent variables

R = 0.439	R – Square = 0.192	Adj. R Square = 0.176	Std. Error of the Estimate = 4.50979		
Regression ANOVA Table					
Variables	Sum of Squares	Df	Mean Square	F	Sig
Regression	1433.476	3	477.825	18.44	0.000
Residual	6020.115	232	25.949		
Total	7453.591	235			

Table 2 shows that there was the joint contribution of the independent variables (parents' educational level, gender and peer group on English language proficiency among the participants; $R = 0.439$, $p < .05$). The table further reveals 17.6% ($\text{Adj. } R^2 = 0.176$) of the variance on English language proficiency among participants were accountable for by the linear combination of the independent variables. The ANOVA results from the regression analysis show a significant contribution of the independent variables on English language proficiency among the participants.

Research Question Two

What is the relative contribution of parents' educational level, gender and peer group on English language proficiency of the participants?

Table 3: Relative Contribution of the Independent Variables on the Dependent Variable

Model	Unstandardized	Coefficients	Standardized	T	Sig
	B	Std Error	Beta		
Constant	13.326	2.369		5.625	0.000
Parents' Educational Level	0.185	0.053	0.194	3.494	0.001
Gender	0.115	0.019	0.345	5.948	0.000
Peer Group Influence	0.531	0.071	0.274	3.924	0.000



Table 3 above shows that all three independent variables significantly contribute to English language proficiency among the participants used for the study in Nigeria. The variables include the following: parents' educational level, gender and peer group influence ($\beta = 0.194$, $t = 3.494$, $p < 0.05$); gender ($\beta = 0.345$, $t = 5.948$, $p < 0.05$) and finally followed by the peer group influence ($\beta = 0.274$, $t = 3.948$, $p < 0.05$). It was observed that gender was the most potent contributor to English language proficiency among the participants.

Results and Discussion

The result of the first hypothesis revealed that there was a significant relationship between parents' educational level and English language proficiency of the participants. The null hypothesis was therefore rejected. This is supported by the study of Jalili (2017) which proved that children whose mothers have university education have higher level of English proficiency. But there was no significant difference of English proficiency level between children whose father have university education and those whose father do not have university education. Similarly, a study in some European countries (Sweden, Croatia, Poland, Italy, Spain, the Netherlands and England) came to the conclusion that children's perception of the target language such as English is affected by parents' educational levels (Butler, 2013).

The findings of the second hypothesis showed that there was significant relationship between gender and English language proficiency of the participants, the null hypothesis was therefore rejected. This is consistent with Lasekan (2018) who carried out a study to determine the level of English proficiency between male and female undergraduate students. The findings of the study suggested female students have higher proficiency than the male students. Furthermore, the study by Karthigeyan and Nimala (2012) observed that female students had higher proficiency in listening, speaking, reading and writing. Beiser and Hou (2000) also observed the same trend in their study. However, he observed difference in English proficiency between male and female late immersion students was insignificant. This is plausible because these group of students have the shortest period of English immersion (6-18 months). As a result of that, it might be difficult to find any difference in their level of English proficiency within this short period.

The result of the third hypothesis showed that there was significant relationship between peer group and English language proficiency of the participants. The null hypothesis was therefore rejected. This is consistent with the study of Baker and Hengeveld (2012) that revealed that in pronunciation, females often speak more slightly 'correctly' than males; in vocabulary, some words are more used by males than females; and in conversation and speaking behaviour, females seem to be more cooperative than interruptive. Similarly, Bi, Mengyu, Diying and Liandi (2019) reviewed the effectiveness of peer assessment for learning and it also suggested that



peer collaboration can promote students' learning enthusiasm. Also, assigning students with similar proficiency level into one group to achieve a better validity in peer assessment. Furthermore, Piker (2013) found that although children were more likely to interact with one another in a classroom than with an adult teacher, these interactions were fleeting than transient; limiting the benefits that children could obtain had the interaction included more complex interactions with their peers. Palermo, et al. (2014) found that children's engagement in positive interactions with peers, influenced their development of letter-word skills only through influencing English oral proficiency and a child's learning behaviours but positive peer interactions evidenced no direct effects on letter-word skills.

Recommendations

Based on the findings of this study, the following recommendations were made.

1. The Nigerian government should make education accessible to all citizens, as this will go a long way to positively affect the future of the nation. When people are educated, they would want their children to be educated.
2. Teachers in secondary schools to ensure that students become proficient in English language because it is a global language for communication, which is required for economical, industrialisation and political growth.
3. Parents, teachers and counsellors should supervise students on their choice of peer groups. Peer groups greatly influences language proficiency in students, and academic performance as a whole.
4. Male students should be encouraged by teachers and parents in the proper usage of the English language, so they can become as proficient as their female counterparts.

Conclusion

Language is a very aspect of human existence; hence it is important that to become in any language of communication. English language as Nigerian's lingua franca is used in all schools, but its proficiency can be influenced by various factors, especially parents' educational level, gender and peer group.

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CHAPTER 39

CONTINUANCE INTENTION TO USE THE E-ADMINISTRATION INFORMATION PORTAL BY NON-TEACHING STAFF IN SELECTED UNIVERSITIES, IN SOUTHWEST, NIGERIA

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Abstract

Electronic administration or e-administration is increasingly being recognized as an important phenomenon in this 21st century and its place in society both at the public and private levels cannot be downplayed. Of close attention is how these platforms are adopted and used in academia due to academia's role in shaping the overall development of the society, particularly the administrative activities of the non-teaching staff in universities since much has not been done to find out the continuance intention to use the e-administration information portal by non-teaching staff in universities. This study, therefore, investigates the continuance intention to use the e-administration of information portal of senior non-teaching staff in selected universities in southwest, Nigeria. The study's design was a correlational survey using simple random sampling to select three hundred and fifty-two (352), senior non-teaching staff, in the selected universities. A standardized questionnaire was used for data capturing while data were analyzed using the descriptive statistics of frequency counts, percentages, means, and standard deviation for the research questions and the Pearson Product Moment Correlation was used for the hypothesis. Findings revealed that the continuance intention of senior non-teaching staff to use the e-administration information portal is positive ($x = 3.13$), the university portal is one of the most utilized e-administration tools (83.4%), while there was an inversely significant relationship between continuance intention to use and use of the e-administration information portal ($r = -.254$; $p < 0.05$; $N = 320$). It was recommended among others that the university management should ensure that more administrative services be incorporated into the e-administrative system to ensure that there is a seamless execution of day-to-day activities among non-teaching staff.



Keywords: *University administration, Information systems, Continuance intention to use, e-administration portals, e-governance*

Introduction

The condition of universities in Nigeria seems to be poor in terms of keeping up with ICT initiatives in keeping records and administration. This may be partially a result of the use of traditional and outdated office equipment in data collection, processing, storage, retrieval and dissemination. The consequences of this may include delay in information dissemination, mistakes in computations, inadequate communication, etcetera. The prevalent use of traditional administrative techniques may be responsible for the reason universities in Nigeria find record keeping, storage, and dissemination a bit difficult causing delays in the ways supposed quick data such as receipts, transcripts, and memos are generated and disseminated.

Therefore, it is expected that if ICT is used in the general administration of Nigerian universities, it will help demystify the obstacles of modern-day university administration. The application of ICT in university will improve managerial work, decrease work-related stress, and enhance students' academic performance. The protuberant function of ICT could be seen in advancing knowledge and skills essential for effective functioning in the contemporary world. There is, therefore, the need to incorporate ICT in universities for effective management. One such way in which ICT could be effectively infused in universities is for governance or administrative activities which is referred to as e-administration.

Electronic administration (e-administration) has become an essential device for the success and development of both public and private institutions. The importance and impact of e-administration cannot be over-emphasised, nor can it be downplayed in this 21st century because the contemporary world is advancing in the use of information and communication technologies. It assists in improving transparency, providing speedy dissemination of information, and as such improving administration.

Dairo (2014) explained e-administration as the conveyance of management information systems and decisions making online, through electronic platforms or the internet. This infers that the e-administration will enhance an amiable connection among university stakeholders. The author also noted that the e-administration provides a large opening for serving the university community in a better way as ICT promises lots of advantages in the administration process but at the same time necessitate efforts for changing process, erecting infrastructures, and capacity enhancement. According to Ogbonna (2011), e-administration has been described as the variety of electronic data-based services with the support of participatory components to accomplish managerial administration objectives.



Furthermore, the most essential anticipated advantages of the e-administration in developing countries include increased accessibility, inclusivity and flexibility in government service delivery and improved value for money (Osakede, Ijimakinwa, Arijenwa, Adesanya and Ojo, 2017). The purpose is to also use the internal running and nexus among numerous university management departments and units. In order to make sure that the staff and students have access to the numerous components of the e-administration, information portals are created (Oyewole, Omotayo and Nwobu 2018).

Therefore, the e-administration information portals can essentially be considered a university management innovation and groundbreaking phenomenon for transforming the university into a more staff-centric and efficient organisations. Simply put, the e-administration information portal is a platform that makes it possible for university management to render services electronically. The e-administration information portal can also be described as a platform built and maintained by the government which brings information together and presents numerous functions such as search engines, news, email, entertainment news and many different applications for the purpose of giving information, exchanging information and transactional processing.

Statement of the Problem

The benefits arising from the use of the e-administration information portal by non-teaching staff in universities for administrative activities cannot be overemphasised. These benefits include centralised information access from anywhere, an increase in student enrollment ratio, providing quality e-services, increase transparency, less paperwork, time-saving, etcetera. Universities that have incorporated e-governance services have found the communication and information retrieval easier, guaranteed and secured. The e-administration is increasingly being recognised as an important phenomenon in this 21st century and its place in the society both at the public level and private level cannot be downplayed, however, not much has been done to determine the continuance intention to use and the actual usage of the e-administration information portal by non-teaching staff in universities. Therefore, there seems to be a dearth of literature and empirical research on the e-administration information portal. The literature search revealed that most of the studies that have been carried out on the continuance intention to use the e-administration were done outside the African continent and the majority did not study non-teaching staff in universities. Thus, there seems to be a dearth of literature on e-administration within the Nigerian context.

In addition, previous work conducted by Cheri and Abdullahi (2018) revealed that universities in Nigeria are still finding it difficult to use the e-administration platforms effectively and this can lead to delays in information dissemination,



mistakes in computations, inadequate communication etcetera. This situation left most Nigerian universities in a pathetic and deplorable state. Also if the situation remains like this, Nigerian universities would not be able to progress and compete globally. This research is important now because the role of e-administration for administrative activities is rapidly becoming one of the most important and widely discussed issues in the contemporary world. This is why universities like all other institutions of learning have to effectively incorporate themselves into the new dimensions. Therefore, this study seeks to examine the continuance intention to use the e-administration information portal by non-teaching staff of three federal universities in Oyo, Osun and Ondo states, Nigeria.

Objectives of the Study

The general objective of this study is to examine the continuance intention to use the e-administration information portal by non-teaching staff from selected universities. The specific objectives of this study are to:

- i. determine the use of e-governance information portal (types, purpose and frequency) by non-teaching staff in three federal Universities in Nigeria.
- ii. find out the continuance intention to use the e-administration information portal by non-teaching staff in three federal Universities in Nigeria.
- iii. identify the perceived challenges to using the e-administration information portal by non-teaching staff in the selected universities.
- iv. determine the relationship between continuance intention and use of the e-administration system by non-teaching staff in the selected universities.

Literature Review

Abasilim, Gberevbie and Ifaloye (2017) were of the view that the e-administration could be carried out on a basis of Government-to-Employee (G2E) and Intra-government, Government-to-Government (G2G), Government-to-Citizens (G2C), and Government-to-Business (G2B). G2C is given the stage whereby the residents can undoubtedly access the required information about the services of the government. G2B empowers the public authority to speak with those in the private area of the economy. G2G centres around information transfer among those at the administration level at the federal, state and local. G2E explains the online communications that are made easy by the usage of a set of interactional tools amongst employees and government constituents for the purpose of providing the worker immediate access to information in regard to topics such as civil rights, benefits, policies, learning and training opportunities, and compensation. In addition, G2E



provides a way to give e-learning to employees and to encourage knowledge sharing between them. As for intra-government, it identifies with the information exchange among the various divisions in each degree of administration. The model suitable for universities is Government-to-citizens (Talpur, Jafri and Aziz, 2014).

Also, with enhanced teaching tools, it has been affirmed that speedy improvement in learning technologies has been advantageous in learning. A learner who is learning through the use of information and communication technologies (ICTs) is utilizing e-learning. With the presentation of new mechanical drives, the design of higher education programmes has changed over the previous decade. Scott (2000) upholds this view that e-learning is currently working with a more adaptable learning approach.

Judging by the fact that awareness is considered a factor impacting the adoption of the e-administration administrations, Al-Jaghoub, Al-Yaseen, and Al-Hourani (2010) reviewed the attention to 1,200 students of various faculties at the Al-Ahiyya Amman University Jordan on the e-administration administrations. Results showed that the vast majority of the respondents (75%) did not know the e-administration administrations and their websites. Discoveries additionally uncovered that 85% noticed that they had never signed on to the site to look for information. The researchers contended that since the sample comprised of youthful individuals, the majority of whom had big income and internet access, infers that they ought to in any event understand what e-administration is. The ramifications are that given that numerous different Jordanians will not have a similar degree of pay, Internet access, and effortlessness of utilization implies that they will in all likelihood have even lower mindfulness and use levels of the e-administration administrations.

Egoeze, Misra, Maskeliūnas, and Damaševičius (2018) were of the opinion that governance in higher institutions is being challenged by numerous saddles to be crossed in order to achieve seamless administration, therefore, new approaches in terms of information systems are needed. The authors affirmed that ICT is a veritable tool that enhances administrative activities in higher institutions of learning globally. The authors, therefore, investigated the ICT impact on administrative practices and services of students' records in Nigerian universities. Using a questionnaire, a survey was conducted using 200 respondents which comprise students, administrators and lecturers who were randomly selected from the selected universities. Using the analysis of variance to determine the impact of ICT on administrative practices in Nigerian universities, there was established that ICT has a positive and significant effect on administrative activities in the Nigerian universities selected.

Iloanusi and Osuagwu (2008) stated that the traditional forms of identifying and verifying people such as the use of usernames, passwords and personal identification numbers –PINs are not sufficient and effective in stemming internet frauds where privacy and security of individuals may be susceptible to theft. The study argued that the introduction of biometric identification should now be preferred since



the system is unique to an individual, permanent and hardly change. This is partly what the e-administration system, such as the ones adopted by higher institutions, can offer. Biometrics is universal and easily implemented with existing or new technologies.

Bwalya (2009) examined factors affecting the adoption of e-administration in Zambia. The research inspected two cases from Zambia where ICT has been used on the side of the e-administration drives. It has likewise surveyed the difficulties, openings, and issues along with the e-administration selection models in regard to the effective exemplification of the e-administration into the Zambian contextual climate. It has been discovered that the absence of a satisfactory ICT framework and political will, arrangement of substance in English other than local dialects, absence of lack of proper change management, and non-contextualization of the e-administration rehearses, contribute a lot to the postponement in proper the e-administration appropriation in Zambia. Out of these difficulties distinguished, the paper proposes a theoretical model which offers adjusted e-administration reception measures including a blend of electronic and participatory administrations. The proposed theoretical model is a start-point for a model which can later be imitated to incorporate a ton of Southern African Development Community (SADC) nations given the closeness in the relevant climate.

Bahruni, *et al.*, (2013) analyzed the duration goal towards the e-administration electronic applications selection in southern Malaysia. At first, information screening was led to check for mistakes in information passage and surveying the information ordinariness utilizing the skewness and kurtosis test. In light of the outcome, it shows that there is a critical relationship with a moderate level of connection between's the e-administration web architecture and residents' duration expectations. This examination derived that less unpredictable sites fundamentally identified with continuation utilization. In the event that the e-administration online applications are excessively perplexing and unstandardized, the various plans may be unfortunate for the vast majority when they need to explore the various sites to go through various exchanges.

Moreover, the discoveries uncovered a huge relationship with a solid level of connection between's the e-administration perceived ease of use, usefulness, and residents' continuation expectation to use e-governance ($r = .521$, $p < 0.01$). Consequently, this investigation is ready to demonstrate that apparent value essentially relates to an individual's plans to keep on utilizing such innovation. For sure, the e-administration online applications are data frameworks that can work on assignments and exercises as the clients' apparent advantage from them. This finding affirms the aftereffect of Suki and Ramayah (2010) that showed that the continuation aim is dictated by apparent convenience with past client experience. The outcome demonstrates that every one of the three factors does impact residents' continuation goal to utilize the e-administration electronic applications in Southern Malaysia.



Nonetheless, perceived value has the most elevated beta qualities among the three factors and it is the fundamental indicator for continuation expectation. It is then followed intently by the intricacy and web architecture. Thusly, this plainly shows that apparent convenience does essentially add to the resident duration expectation. This is upheld by the past research directed by Wang, Zhou, Huang, Hensley, Huang, Ma, Zhao, Sumer, DeBerardinis and Gao (2014) in assessing the China residents' perceived ease of use in e-governance use. The specialist tracked down that the Chinese perceived worth and advantage by utilizing such e-administration applications as they said that it is so helpful and simple to utilize such a framework when directing authority matters.

Santhanamery and Ramayah (2012) inspected the duration expectation of the e-administration administration: an investigation of assessment e-recording framework in Malaysia. E-recording is a kind of e-administration that was examined in this investigation. Examining the continuation goal of the expense e-recording framework is significant, as the more residents constantly utilize the duty e-documenting framework, the more activity, and the board cost could be decreased, to accomplish the objective of utilization by citizens in not so distant future and for the achievement of this framework. Thusly, the point of this exploration is to research the impact of trust, perceived quality of the framework, and perceived quality of information on the duration aim of the assessment e-documenting framework among citizens in Malaysia. The aftereffects of this examination were acquired from 425 citizens in Malaysia by utilizing Structural Equation Modeling (SEM) AMOS. The investigation tracked down that apparent value, trust, seen framework quality, and fulfilment affect the duration aim of an assessment e-documenting framework, while, saw data quality impacts the continuation expectation of expense e-recording framework. On other hand, trust apparent framework quality, and affirmation affects fulfilment. Moreover, fulfilment was found to intercede the connection between trust and continuation aim and saw framework quality and duration expectation. Thus, the finding of this examination infers that the full advantages and accomplishment of the e-documenting framework cannot be acknowledged without proceeding with use.

Perceived usefulness has been characterized as an individual's emotional view of the capacity of a PC to expand work execution while finishing an undertaking, which influences their apparent helpfulness subsequently indirectly affecting a client's innovation acknowledgement (Bugembe, 2010). It is characterized as 'how much an individual accepts that utilizing a specific innovation will upgrade their work execution. This follows from the meaning of the word valuable significance equipped for being utilized profitably. Inside a hierarchical setting, individuals are for the most part built up for great execution by raises, advancements, rewards, and different prizes. A framework high in saw helpfulness, thus, is one for which a client has faith in the presence of a positive use-execution relationship. Seen helpfulness discloses the client's discernment to the degree that the innovation will improve the client's



working environment execution. This implies that the client has an impression of how valuable the innovation is in playing out his work errands. This incorporates diminishing the ideal opportunity for doing the work, more proficiency, and exactness. Past investigations demonstrate that apparent helpfulness is decidedly connected with duration expectation with regard to e-text (Baker-Eveleth and Stone, 2015), texting (Wang, Ngai, and Wei, 2011) etcetera. Accordingly, saw helpfulness is a pointer that can impact the duration goal to utilize the e-administration data entrance by non-scholastic staff.

An investigation was directed by Al-Jaghoub et al (2010) on the e-administration in Jordan where they detailed in their different examinations that the greater part of their respondents among the individuals who were staff had a low degree of mindfulness about the e-administration programs and online administrations. Most of the respondents had a positive view of the e-administration data entryway of the establishment as a critical number noticed that the electronic application could bring the e-administration nearer to individuals. Others were of the assessment that the arrangement of the electronic application is a way to build the nature of administration. This means that the e-administration data entryway is seen as a vital improvement that could change admittance to data from the college organization and data correspondence between the University and their representatives and the other way around.

This verifies the accommodation of Susanto and Goodwin (2010) who noticed that the e-administration gateway is not difficult to access and simple to utilize. The more workers see that the e-administration administration is not difficult to utilize the more probable they are to utilize the assistance. The consequence of this investigation is anyway interestingly with that of Lallana and Soriano (2008) who revealed in an examination that the view of the respondents on the information access was not positive as some did not believe the public authority and found that the nature of public administrations is poor.

The apparent difficulties of the e-administration gateway incorporated an absence of mindfulness about the e-administration entryway with respect to the residents of the state and deficient exposure with respect to the public authority. Different difficulties are the low degree of ICT proficiency with respect to the residents and the flighty force supply. It would be hard for people to successfully use what they are mindful of. Also, since the e-administration gateway is ICT-driven, those in the general public, particularly the uneducated may discover it very hard to utilize it due to their powerlessness to utilize PCs or related cell phones. Besides, if the force supply isn't customary, the gadgets used to get data through the electronic application won't be fueled. This is as per the accommodation of Okwueze (2010) who noticed that a deficient electricity supply could be a clog in the wheel of effective execution of the e-administration in Nigeria.



The lack of ICT infrastructure is a crucial challenge in the implementation of e-administration in Nigerian universities. For instance, some of the offices still lack common computers and the common skills for their operation. The day-to-day administrative activities are still done in the traditional way. There is still no access to the Internet network in most public sector offices, no regular power supply and so on. All these pose a challenge to the implementation of e-administration in Nigeria's universities (Adeyemo, 2011). Therefore, the national factor is taken as a construct in this study to measure adoption factors of the e-administration by non-teaching staff in Nigerian university libraries and will be measured using government regulatory policy, power supply and ICT infrastructure

Perceived ease of use, in contrast, refers to the extent to which an individual believes that using a particular system would be free of effort. This follows from the meaning of ease: freedom from difficulty or great effort. The effort is a finite resource that an individual may assign to the various activities for which he or she is responsible. All things being equal, an application perceived to be easier to use than another is more likely to be received by users. In the framework of this study, perceived ease of use refers to the level to which users believe that their continued use of the e-administration information portal is free of effort. If a system is reasonably easy to use, individuals will be more eager to learn about its features and finally intend to continue using it. (Chiu and Wang, 2008) indicate that perceived ease of use is related to continuance intention in the context of Web-based learning.

Methodology

A survey research design of the correlational type was adopted and the population of the study comprises non-teaching staff of three federal institutions in South-west, Nigeria. These universities were selected because they all have non-teaching staff who engage in day to day administrative running of the universities and were willing to disclose their data. According to the data collected from these institutions, the total number of non-teaching staff (senior) is 4093 as presented in Table 1.

Table 1: Study population of non-teaching staff in the three selected universities

Name of Institution	Senior non-teaching staff
University of Ibadan, Ibadan	1516
Obafemi Awolowo University, Ile Ife	1597
Federal University of Technology, Akure	980
Total	4,093



A systematic simple random sampling technique was used for selecting the sample size of this study. In a systematic simple random sampling, every case of the population has an equal probability of being included in the sample. The sample size was calculated using Cochran's sample size formula as follows;

$$n_o = \frac{(Z^2 pq)}{e^2}$$

Where:

e is the desired level of precision/ margin of error= 0.05

p is the estimated proportion of the population which has the attribute in question= 0.5 (we assume half of the total population)

q is 1-p= 1-0.5= 0.5

Z value is found in the Z table= 1.96 (for 95% confidence level)

$$\text{Therefore, } n_o = \frac{((1.96)^2 * 0.5 * 0.5)}{0.05^2} = 384.16$$

To determine the population sample, we have:

$$n = \frac{n_o}{1 + (n_o - 1)/N}$$

Where N is the population size= 4,093

n_o is Cochran's sample size recommendation= 384.16

And n is the new adjusted sample size

$$\text{So, } n = \frac{384.16}{1 + (384.16 - 1)/4093} = 352$$

Therefore, for this study, the sample population consisted of 352 senior non-teaching staff at the University of Ibadan, Oyo state, Obafemi Awolowo University, Osun state and the Federal University of Technology Akure, Ondo state. In a bid to have a balanced proportion of the population across the three federal universities, individual sample sizes for the selected universities were calculated using the sample of 352. As such, 121 was allotted to the University of Ibadan and 131 to Obafemi Awolowo University, Ile-Ife and 100 to the Federal University of Technology Akure.

The instrument used in collecting the data for the study is the questionnaire titled "The continuance intention to use the e-administration information portal." This is because it is applicable to large respondents, useful for obtaining opinions and attitudes and will completely eliminate the researcher's bias (Ifidon and Ifidon 2007).



The research instrument consists of five sections. Section A contains the background information of the respondents, section B contains continuance intention to use the e-administration information portal using perceived ease of use and perceived usefulness as a construct, section C contains the e-administration tools being used, section D contains the purpose of use of the e-administration information portal, section F contains the frequency of the e-administration information portal and section E contains the challenges to use the e-administration information portal.

The reliability test of the instrument was ensured through the conduct of a pretest using the non-teaching staff of Adeyemi College of Education, Ondo state, Nigeria who are not part of the actual study sample. The result shows the overall Cronbach Alpha reliability coefficient of 0.78. Thus the measuring instrument was predicted valid for the study based on the Normality condition of $r \geq 0.70$. The collected data were analysed using the statistical package for social sciences (SPSS) version 20, a computer application software program. Immediately after the collection of the questionnaire, the questionnaires were compiled, sorted, recorded and documented to reduce the effect of missing data from the improper compilation. The data were analysed using frequency tables, means and standard deviation for research questions while Pearson's Product Moment Correlation Coefficient was used to test the hypothesis. The results were presented in tables while inferences and recommendations were drawn from them.

Results and Discussion

Questionnaire Administration and Return Rate

A total number of 352 copies of the questionnaire were administered to the senior non-teaching staff of the three selected universities in South West Nigeria. 320 copies were returned and found useful for analysis giving a response rate of 90.9%. The response rate of the administered questionnaire is shown in table 2.

Table 2: Distribution of questionnaire administration and return rate

Name of Institution	Distribution	Returns (%)
University of Ibadan	121	99(81.82%)
Federal University of Technology Akure	100	97(97%)
Obafemi Awolowo University	131	124(94.66%)
Total	352	320(90.9%)



Demographic Characteristics of the Respondents

Table 3: Distribution of senior non-teaching staff in the selected universities in South West Nigeria by demographic characteristics

Institution	Frequency	Percentages
University of Ibadan	99	30.9%
Federal University of Technology Akure	97	30.3%
Obafemi Awolowo University	124	38.8%
Highest Qualification	Frequency	Percentages
HND	59	18.4%
BSc	48	15.0%
MSc	213	66.6%
Years spent in service	Frequency	Percentages
11-15	41	12.8%
16-20	110	34.4%
21-25	50	15.6%
26-30	119	37.2%
Age range	Frequency	Percentages
41– 45 years	30	9.4%
46 – 50 years	135	42.2%
50 and above	155	48.4%
Gender	Frequency	Percentages
Male	213	66.6%
Female	107	33.4%

Table 3 shows that 97(30.3%) are from the Federal University of Technology Akure; 99 (30.9%) of the respondents are senior non-teaching staff of the University of Ibadan, Oyo State and 124(38.8%) were from Obafemi Awolowo University. This



implies that the majority of the respondents used in this study were from Obafemi Awolowo University. As far as their highest qualification is concerned, 48 (15.0%) possess BSc, 59(18.4%) possess an HND, and 213(66.6%) are MSc holders. This implies that this study is dominated by Master's degree holders. In terms of years spent in service, 41(12.8%) have spent 11-15 years, 50(15.6%) have spent 21-25 years, 110(34.4%) have spent 16-20 years, while 119(37.2%) have spent 26-30 years in service. This implies that the majority of the respondents possess high work experience. The data also showed that the age range of the respondents as 30(9.4%) are within the age bracket of 41-45 years, 135(42.2%) are between 46-50 years of age, and 155(48.4%) are 50 years and above. This implies that the respondents are well advanced in age and correspond with vast years of experience in service. The gender of the respondents indicates that 107(33.4%) are females while 213(66.6%) are males. This implies that most of the respondents are males.

Answer to Research Questions

Research Question 1: What are the purpose, frequency and types of use of the e-administration among non-teaching staff in the selected universities in Nigeria?

Table 4a: Purpose of using the e-administration portal by senior non-teaching staff in the selected universities in South West Nigeria.

S/N	Purpose	SD	D	A	SA	\bar{x}	Std Dev
1	For acquiring the necessary information about students	10(3.1%)	48(15%)	160(50%)	102(31.9%)	3.11	.76
2	For sharing vital information among colleagues	14(4.4%)	17(5.3%)	212(66.3%)	77(24.1%)	3.10	.67
3	For sharing files with staff	17(5.3%)	14(4.4%)	220(68.8%)	69(21.6%)	3.07	.68
4	For exchanging ideas among colleagues	14(4.4%)	14(4.4%)	217(67.8%)	75(23.4%)	3.10	.66
5	For getting related resources for teaching staff	11(3.4%)	18(5.6%)	229(71.6%)	62(19.4%)	3.07	.61
6	For leisure and entertainment purposes	70(21.9%)	153(47.8%)	63(19.7%)	34(10.6%)	2.19	.89



7	For communication from staff to students	16(5%)	12(3.8%)	217(67.8%)	75(23.4%)	3.10	.68
8	For searching for information and resources not available manually	15(4.7%)	17(5.3%)	220(68.8%)	68(21.3%)	3.07	.67

Table 4b: Frequency of using the e-administration portal by senior non-teaching staff in the selected universities in South West Nigeria

S/N	The e-administration Information Application	Daily	Weekly	Monthly	Quarterly	Never used	\bar{x}	Std Dev
1	The university's student portal	99(30.9%)	155(48.4%)	66(20.6%)	-	-	4.10	.711
2	School information management system	145(45.3%)	120(37.5%)	34(10.6%)	13(4.1%)	8(2.5%)	4.19	.955
3	E-appraisal system	-	-	106(33.1%)	112(35%)	102(31.9%)	2.01	.807
4	E-learning platform	66(20.6%)	49(15.3%)	102(31.9%)	102(31.9%)	1 (0.3%)	3.24	1.12
5	E-payment	-	-	215(67.2%)	105(32.8%)	-	2.67	.47
6	Decision support system	113(35.3%)	-	-	118(36.9%)	89(27.8%)	2.78	1.68
7	Transcript Generating system	-	102(31.9%)	-	218(68.1%)	-	2.64	.93
8	Result checker	8(2.5%)	9(2.8%)	150(46.9%)	149(46.6%)	4(1.3%)	2.59	.68
9	Internal Research Award Management system	-	-	144(45%)	148(46.3%)	28(8.8%)	2.36	.63
	Weighted mean					2.95		

Decision Rule:

0 .01- 1.25 = Never Used



1.26 – 2.5 = Occasionally Used

2.51 – 3.75 = Averagely Used

3.76 – 5 = Highly Used

Table 4c: Types of the e-administration tools used by senior non-teaching staff in the selected universities in South West Nigeria

S/N	Types of The e-administration tools	Frequency	Percentage (%)
1.	The university's student portal	268	83.8
2.	School information management system	208	65
3.	E-appraisal system	182	56.9
4.	E-learning platform	286	89.4
5.	E-payment	219	68.4
6.	Decision support system	155	48.4
7.	Transcript Generating system	195	60.9
8.	Result checker	208	65
9.	Internal Research Award Management system	141	44.1

Tables 4a, b, and c reveal the purpose, frequency of using the e-administration information portal and the types used by non-teaching staff in the selected universities in Nigeria. The result in Table 4a showed that the main purpose of using the e-administration information portal by non-teaching staff is to acquire necessary information about students (\bar{x} =3.11; Std dev. =.76), followed by sharing of vital information among colleagues (\bar{x} = 3.10; Std Dev. =.68), For exchanging ideas among colleagues and communication from staff to students (\bar{x} = 3.10; Std Dev. =.68) respectively being above the threshold of 2.5 mean scores, while it was only 'For leisure and entertainment purposes' (\bar{x} =2.19; std dev. =.89).

In Table 4b, the essence is to determine the frequency of using the e-administration information portal by non-teaching staff in the selected universities in Nigeria. The result (Table 4b) showed that the respondents indicated the usage of the e-administration porta for the school information management system (45.3%) on a daily basis, the students' porter on weekly basis (45.3%) while the e-payment platform, e-learning platform, and result checker were used on monthly basis. Others used on a quarterly basis include the e-appraisal platform, decision support system platform, and internal research award management system. With the weighted mean



score of 2.95 against the threshold of 2.5 mean scores, it is safe to say that the e-administration platform is averagely used judging by the decision rule set for the scale measuring the frequency of use.

In the same vein, Table 4c showed the types of e-administration tools used by non-teaching staff in the selected universities in Nigeria. The result (Table 4c) showed that the most utilised type of e-administration tools by non-teaching staff includes the e-learning platform 286(89.4%) and the university's portal 268 (83.8%), while the decision support system and internal research award management system were the least used among the available types of the e-administration modules in the e-administration system in the selected universities.

Research Question 2: What is the continuance intention to use the e-administration information portal by non-teaching staff in the selected universities in Nigeria?

Table 5: Continuance intention to use the e-administration portal by senior non-teaching staff in the selected universities in South West Nigeria

S/N	Perceived Usefulness	SD	D	A	SA	\bar{x}	Std Dev
1	The e-administration information portal provides useful information for me	7 (2.2%)	7 (2.2%)	244 (76.3%)	62 (19.4%)	3.13	.5363
2	The e-administration information portal provides useful services for me	10 (3.1%)	12 (3.8%)	235 (73.4%)	63 (19.7%)	3.10	.5925
3	Using the e-administration information portal improves my job efficiency	10 (3.1%)	14 (4.4%)	232 (72.5%)	64 (20%)	3.09	.6009
4	The e-administration information portal gives me the opportunity to suggest areas of improvement for the university	13 (4.1%)	15 (4.7%)	230 (71.9%)	62 (19.4%)	3.07	.6325



5	The e-administration information portal helps me disseminate information quickly	6 (1.9%)	13 (4.1%)	148 (46.3%)	153 (47.8%)	3.40	.6596
						3.16	
	Perceived ease of use						
6	I can easily log in to the e-administration information portal	7 (2.2%)	17 (5.3%)	146 (45.6%)	150 (46.9%)	3.37	.6874
7	The e-administration information portal is easily accessible to me	13 (4.1%)	14 (4.4%)	233 (72.8%)	60 (18.8%)	3.06	.6254
8	I can easily complete a task using the e-administration information portal	11 (3.4%)	10 (3.1%)	239 (74.7%)	60 (18.8%)	3.09	.5913
9	Getting the information that I want from the e-administration information portal is easy	10 (3.1%)	9 (2.8%)	236 (73.8%)	65 (20.3%)	3.11	.5871
10	The organisation and structure of the e-administration information portal are easy to follow	11 (3.4%)	10 (3.1%)	240 (75%)	59 (18.4%)	3.08	.5891
						3.14	
	User satisfaction						
11	I am satisfied with the information provided	9 (2.8%)	8 (2.5%)	233 (72.8%)	70 (21.9%)	3.14	.5817
12	I am satisfied with the user experience	15 (4.7%)	12 (3.8%)	224 (70%)	69 (21.6%)	3.08	.6594



13	I am satisfied with the security and privacy provided	13 (4.1%)	18 (5.6%)	218 (68.1%)	71 (22.2%)	3.08	.6594
14	I am satisfied with the system quality	12 (3.8%)	17 (5.3%)	224 (70%)	67 (20.9%)	3.08	.6381
15	Overall, I am satisfied with the system	9 (2.8%)	13 (4.1%)	223 (69.7%)	75 (23.4%)	3.14	.6081
						3.10	
	Weighted mean					3.13	

Decision rule:

0 .01- 2.5 = Negative Intention

2.51 – 5 = Positive Intention

Table 5 shows the continuance intention to use the e-administration information portal by non-teaching staff in the selected universities in Nigeria. This was subdivided into three (3) different areas comprising perceived usefulness, perceived ease of use and user satisfaction. The result in Table 5 shows based on the responses of non-teaching staff that the e-administration information portal helps them disseminate information quickly ($\bar{x} = 3.40$; std dev. = .6596); they can easily log in to the e-administration information portal ($\bar{x} = 3.37$; std dev. = .6874); they are satisfied with the information provided ($\bar{x} = 3.14$; std dev. = .5817) and they are also satisfied with the system ($\bar{x} = 3.14$; std dev. = .6081). This implied that they perceived the e-administration information portal as a tool that helped them disseminate information quickly.

Overall, the fifteen items measuring the continuance intention to use the e-administration system showed that the weighted mean ($\bar{x} = 3.13$) was well above the 2.5 mean thresholds. Each of the constructs equally generated an appreciable mean score, perceived usefulness ($\bar{x} = 3.16$) perceive ease of use ($\bar{x} = 3.14$), and user satisfaction ($\bar{x} = 3.1$). Therefore, following the decision rule, the continuance intention to use the e-administration system among senior non-teaching staff in the selected Nigerian university libraries, in the southwest of Nigeria is positive. Therefore, the continuance intention to use the e-administration platform in Nigerian universities southwest, Nigeria is good.

Research Question 3: What are the perceived challenges of the e-administration information portal use by non-teaching staff in the selected universities in Nigeria?



Table 6: Challenges of the e-administration information portal used by senior non-teaching staff in the selected universities in South West Nigeria

S/N	Challenges	SD	D	A	SA	\bar{x}	Std Dev
1	The procedures for using the e-administration portal are rigid	88 (27.5%)	208 (65.0%)	9 (2.8%)	15 (4.7%)	1.85	.6846
2	The poor Internet connectivity makes it difficult to use the e-administration portal	13 (4.1%)	10 (3.1%)	144 (45%)	153 (47.8%)	3.37	.7348
3	Erratic power supply affects the use of the e-administration portal	5 (1.6%)	21 (6.6%)	146 (45.6%)	148 (46.3%)	3.37	.6770
4	Implementation of the e-administration portal involves a huge cost	10 (3.1%)	16 (5%)	141 (44.1%)	153 (47.8%)	3.37	.7219
5	Maintenance of the e-administration portal involves a huge cost	9 (2.8%)	8 (2.5%)	253 (79.1%)	50 (15.6%)	3.08	.5376
6	Insufficient ICT application to access the e-administration information portal	12 (3.8%)	10 (3.1%)	239 (74.7%)	59 (18.4%)	3.08	.6005

Table 6 shows the challenges of the e-administration information portal used by non-teaching staff in the selected universities in Nigeria. The result (Table 4.8) showed that the major challenges affecting the use of the e-administration information portal include non-teaching staffs respondents indicated that the challenges faced include poor internet connectivity ($\bar{x}=3.37$; std dev. =.7348); erratic power supply ($\bar{x}=3.37$; std dev. =.6770) and the huge cost of implementation ($\bar{x}=3.37$; std dev. =.7219).



Answer to the Research Hypothesis

There is no significant relationship between continuance intention to use and the use of the e-administration information portal by non-teaching staff in the selected universities in Nigeria.

Table 7: Relationship between continuance intention to use and the use of the e-administration information portal by non-teaching staff in the selected universities in Nigeria

Variables	N	Mean	St.Dev	Df	r	P	Sig
Continuance intention	320	47.03	2.504	319	-.254	.399	S
The e-administration use	320	56.20	5.252				

Table 7 shows the relationship between continuance intention to use and the e-administration information portal used by non-teaching staff of the selected universities in South West, Nigeria. The table showed that there is an inversely linear relationship ($r = -.254$; $p < 0.05$) between continuance intention to use and the e-administration information portal use by non-teaching staff in the selected universities in South West, Nigeria. However, this situation only occurs 25.4% of the time which also indicates a weak significance. This implied that the increase in the continuance intention to use will result in the decrease of using the e-administration information portal by non-teaching staff of the selected universities in South West, Nigeria. Thus, the null hypothesis stating that there is no significant relationship between continuance intention to use and the e-administration information portal use by non-teaching staff in the selected universities in South West, Nigeria is hereby rejected.

Discussion of Findings

Objective 1: Use of e-governance information portal (types, purpose and frequency) by non-teaching staff in three federal Universities in Nigeria

The finding of this study revealed that university portals and e-learning platforms are the most used e-administration tools by non-teaching staff. In line with the finding of this study, Egoeze, Misra, Maskeliūnas and Damaševičius (2018) reported that the major e-administration services carried out in selected universities in Turkey included registrations and e-payment. These services related to the registry and bursary respectively are carried out through the university portal. In the same vein, Iloanusi and Osuagwu (2008) identified fee payments, registration, and admissions, to be the



significant aspects ICT has made progress and impacted on administrative services/management of students' records in Nigerian universities. This finding is in consonance with the discoveries of Egoeze et al (2018) that, computers are used for general administration, students' records, inventory records, examination processing, word processing, financial records and effective educational administration.

In another approach, Scott (2000) supports this view that e-learning is now facilitating a more flexible learning approach. Enhanced teaching tools as identified have shown speedy improvement in learning advances in order to transform them to advantage in learning. A learner who utilises any form of information and communication technologies (ICTs) is indeed engaging in e-learning. With the presentation of new technological drives, higher institutions' education and instructional delivery have changed over the previous decade.

The finding of this study revealed that the school information management system and the university portal are more used on a daily and weekly basis respectively. This is in line with the findings of Abasilim, Gberevbie and Ifaloye (2017) who revealed that administrative services such as admissions, registrations, e-payments, and purchasing are used more regularly than other fundamentals of classroom teaching and learning. In a slightly different result, Kupoluyi and Awotunde (2018) reported that the majority of respondents indicate that they use computer software regularly, and 49.4 per cent of the respondents use e-mails regularly for daily activities.

The finding of this study revealed that the main purpose of using e-administration tools is to acquire necessary information about students, communication from staff to students and for sharing vital information among colleagues. This finding is in line with Oyewole, Omotayo and Nwobu (2018) who submitted that the purpose of using the e-administration tools is to use the internal running and nexus among numerous university management, departments and units. This is to ensure that the staff and students have access to the numerous components of the e-administration, hence the creation of the e-administration information portals are created. To corroborate this study further, Abasilim, et al (2017) highlighted that the major purpose of using the e-administration tools is to provide employees immediate access to information in regard to topics such as compensation, learning and training opportunities, policies, benefits and civil rights. In addition, the e-administration portal provides a way to give e-learning to employees and to encourage knowledge sharing between them.

Objective 2: continuance intention to use the e-administration information portal by non-teaching staff in three federal Universities in Nigeria

The finding of the study revealed that non-teaching staff perceived mainly that the e-administration information portal helps to disseminate information quickly, it is easy to log in to the e-administration portal and there is overall satisfaction with the



system. It further implies that on the continuance intention to use the e-administration information portal, non-teaching staffs perceive the e-administration portal to be useful and as result, they possess a positive intention to continue to use the e-administration information portal. This finding is in line with the submission of Norazah and Ramayah (2010) that indicated that continuance intention is determined by perceived usefulness with past user experience. Also, the result of the study by Norazah and Ramayah (2010) indicated that perceived usefulness and ease of use had an influence on an individual's continuance intention to use the e-administration web-based applications in Southern Malaysia. However, perceived usefulness was identified as the main predictor for continuance intention which further affirms the submission of the findings of the present study. Therefore, this clearly showed that perceived usefulness does significantly contribute to the citizen continuance intention.

The finding of the present study which revealed perceived usefulness as the main predictor of non-teaching staff's intention to use the e-administration portal was buttressed by the earlier research carried out by Wang (2014) in appraising the China people in perceived usefulness in mobile government persistence usage. The author established that the Chinese perceived benefit and value of using the e-administration platforms as they stated that it is so easy and convenient to utilise such a system when carrying out formal matters. Similarly, Chandra (2017) agreed with the submission of Wang (2014) which found perceived usefulness to have a significant positive influence on the continuance intention to use tax e-filing system.

In the same vein, the results by Baker-Eveleth and Stone (2015), Stone and Baker-Eveleth, (2013) and Wang, Ngai, and Wei (2011) were consistent with the findings of the present study which revealed perceived usefulness as a major predictor of continuance intention in the context of e-text and instant messaging. In contrast, the findings by Chiu and Wang (2008) revealed that rather than perceived usefulness, perceived ease of use was viewed as a major predictor of continuance intention in the context of Web-based learning. It could be implied that if a system is reasonably easy to use, individuals will be more eager to learn about its features and finally intend to continue using it.

In consistence with the findings of the present study, Al- Jaghoub et al (2010) noted that the electronic app could bring the e-administration closer to the people indicating its perceived usefulness. This is however in contrast to the submission of Susanto and Goodwin (2010) who noted that e administration portal is easy to access and easy to use. The more employees perceive that the e-administration service is easy to use the more likely they are to use the service.

Objective 3: Perceived challenges to using the e-administration information portal by non-teaching staff in the selected universities.



The findings of this study revealed that poor internet connectivity, erratic power supply and huge cost of implementation are the major challenges affecting the use of the e-administration information portal by non-teaching staff in the selected universities in South West, Nigeria. In consonance with the finding of this study, Susanto and Goodwin (2010) noted that erratic power supply is one of the perceived challenges of the e-administration portal as well as a lack of awareness about the e-administration portal and inadequate publicity. Other challenge includes a low level of ICT literacy.

To further corroborate the findings of this study, Okwueze (2010) noted that inadequate power supply could be a clog in the wheel of successful implementation of e-administration in Nigeria. Cheri and Abdullahi (2018) also affirmed that although the implementation of the e-administration has begun in Nigerian universities, the e-administration activity in Nigeria is still low due to some profuse challenges impeding full implementation of the e-administration in Nigerian universities. Bwalya (2009) also found that lack of adequate ICT infrastructure and political will, provision of content in English other than local languages, lack of proper change management procedures, and non-contextualisation of the e-administration practices, contribute much to the delay in appropriating the e-administration adoption in Zambia.

Similarly, in support of the findings of this study, Adeyemo (2011) reported that access to the Internet network in most public sector offices, and irregular power supply pose a challenge to the implementation of the e-administration in Nigeria's universities. The study also revealed the major challenges facing the use of ICTs in the universities including the high maintenance cost of ICTs, the low literacy level of teachers and epileptic power supply.

Objective 4: Determine the relationship between continuance intention and use of the e-administration system by non-teaching staff in the elected universities

The findings of the study revealed that there is an inversely linear relationship between continuance intention to use and the e-administration information portal use by non-teaching staff in the selected universities in South West, Nigeria. This is in line with the findings of Bahrani, et al (2015) who examined the continuance intention towards the e-administration web-based applications adoption in southern Malaysia. The authors showed that there was a nexus between the e-administration's perceived usefulness and its continuance intention. Thus, this study was able to prove that perceived usefulness significantly correlates with an individual's intention to continue to use the e-administration tools. This finding also confirms the result of Norazah and Ramayah (2010) indicated that continuance intention is determined by perceived usefulness with past user experience. The result also indicated that all three variables do have an influence on citizens' continuance intention to use the e-administration web-based applications in Southern Malaysia.



Summary of the Findings

1. The continuance intention of senior non-teaching staff to use the e-administration information portal is positive and determined mainly by its perceived usefulness in the selected universities in South West, Nigeria.
2. The university portal is one of the most utilised e-administration tools by senior non-teaching staff in the selected universities in South West, Nigeria.
3. The school information management system and the university portal are used more frequently than other e-administration tools by senior non-teaching staff in the selected universities in South West, Nigeria.
4. The main purpose of using the e-administration tools by senior non-teaching staff in the selected universities in South West, Nigeria is to acquire necessary information about students, for communication from staff to students.
5. An inversely linear relationship exists between continuance intention and use of the e-administration information portal among senior non-teaching staff in the selected universities in South West, Nigeria.

Conclusion

The study resolved that continuance intention is crucial to the use of the e-administration information portal and the overall success of an organisation including universities. It was observed that in a situation where non-teaching staff's intention to continue to use the e-administration portal is weak, much cannot be achieved in such an organisation with respect to its objectives.

Recommendations

The following recommendations were made:

1. The university management should ensure that more administrative services be incorporated into the e-administrative system to ensure that there is a seamless execution of day-to-day activities among non-teaching staff.
2. Training at intervals should be given to non-teaching staff to update their knowledge and improve their self-efficacy in the use of e-administration tools to carry out their administrative services.
3. Non-teaching staff should be encouraged to continue to update their skills and knowledge on the use of the e-administration tools such that an increase in their continuance intention will continue to result in an increase in the use of the e-administration portal.



4. The university management should make plans for an Independent Power Project which will eradicate the challenge of erratic power supply. More alternative power supplies such as Solar electricity and inverter should be provided to different administrative departments and units within the university where e-administrative services are required. Wireless internet technology should be accessible to non-teaching staff from any part of the university community.

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CHAPTER 40

PERCEPTION OF THE UNIVERSITY OF IBADAN NON-TEACHING STAFF TO KNOWLEDGE, ATTITUDE AND UTILIZATION OF ICT FOR ADMINISTRATIVE EFFECTIVENESS

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Abstract

Administrative Effectiveness (AE) is the extent to which Non-Teaching Staff (NTS) in any university discharge their administrative duties (security, library, administrative, maintenance, legal, medical, cleaning, planning and financial services, among others) in a way to compliment the efforts of academic staff. Several stakeholders contend that some NTS have habits that involve staying away from offices for as many days as they wish. Such behaviour could lead to administrative ineffectiveness in any university. However, past studies on AE, mainly considered the use of ICT, lecturers' perception of ICT integration, ICT adoption and attitude of lecturers rather than knowledge, attitude or perceptions on ICT utilization. It is for this forgoing reasons that investigating perception of the University of Ibadan (UI) NTS to knowledge, attitude and Utilization of ICT (UICT) for AE.

The study adopted the descriptive survey research design with a population of 1020 NTS from 17 faculties in the UI. Purposive sampling technique was used to select five faculties in the UI. This is due to the duration they all spend for a degree programme. Proportionate to size sampling technique was applied to select 50% of NTS from each faculty (Arts-21, Education-48, Science-83, Social Science-21 and Economics-8) which gave the study 181 respondents. A research instrument titled AE Questionnaire (AEQ) and Perception, Attitude, Knowledge and UICT Questionnaire (PAKUICTQ) with a reliability value of $r = 0.78$ and 0.81 . Pearson Product-Moment Correlation and regression analysis were used to test three hypotheses formulated in the study. The findings showed that there were significant relationships among perception, attitude and knowledge of UICT and AE among NTS in the UI. The results also



revealed that attitude, knowledge and perception of UICT made relative and joint contribution to the AE in the UI.

Management of university should continue to improve administrative effectiveness of staff by changing the attitude and perception of non-teaching staff. There is a need for non-teaching staff to be continually trained on the acquisition of ICT skills.

Keyword: *Perception, Knowledge, Attitude, ICT Utilization, Administrative Effectiveness*

Introduction

Administrative effectiveness is the extent to which university non-teaching discharge their administrative duties to compliment the effort of Non-Teaching Staff (NTS) in the area of research, teaching and community service. Eden (2012) states that administrative effectiveness involves planning, coordinating, controlling and commanding activities aimed at the fulfillment of the goals of a particular institution. The extent to which the goals are achieved depends greatly on the administrative effectiveness of NTS in the University of Ibadan. It is therefore, functions of NTS of any university rest on the effectiveness of administrators and NTS. Ineffectiveness of NTS in the security services, library services, administrative services, maintenance services, legal services, medical services, cleaning services, planning services, financial services may lead to low NTS productivity which invariably leads to low university goal attainment. Conversely, if NTS are performing these services as expected in the University of Ibadan, there would be higher level of administrative effectiveness and goal attainment of the university (Iwuoha, 2018).

Take for instance, the NTS of University of Ibadan are expected to provide quality internet services for academic staff and student for effective teaching and learning while exams and records unit are expected to prepare academic transcripts and issues result for students who have graduated in the system. Also, NTS who are in charge of security unit in the campus are expected to patrol and ensure that lives and properties of staff and students are protected. Many of these units identified appear not to perform their statutory responsibility as expected from them. If this is not addressed by stakeholders in the university, it could not only affect administrative effectiveness of NTS but also affect missions and vision of the University of Ibadan. Comfort (2012) revealed that institutions with high level of administrative effectiveness manifest high level of discipline.

The NTS as administrators require human and material resources in order to be effective and efficient in records keeping and service delivery. It seems that administrators of the institution with particular emphasis on Information and Communication Technology (ICT) which concern students' admission, transcripts,



registration, school fees, examination, graduation, among others are not properly managed which could create retrieval problems for administrative operations. The introduction of ICT into the administration and management of university has helped to improve administrative effectiveness of NTS. Most of the NTS largely depend on the ICT to be able to perform well in the university environment (Ogunode, Babayo, Jegede and Abubakar, 2021). It is believed that well processed and appropriately utilized ICT to facilitate the process of effective administration of NTS would enhance administrative effectiveness. When NTS in the universities find it difficult to utilize ICT in order to keep their records up to date and render their service as expected, this could stand as an impediment to administrative effectiveness (Yekini, Oloyede and Akinwale, 2020).

The utilisation of ICT involves using the available technologies to aid NTS to discharge their administrative duties in the area of security, library, maintenance, legal, medical, cleaning, planning and financial services in a way to compliment the efforts of academic staff in the university. The utilisation of ICT in various offices of non-teaching staff is expected to facilitate effective administration. Soetan and Coker (2018) reported that a low level of utilizing ICT facilities by NTS would lead to ineffective administrative. This suggests that poor utilisation of ICT like ICT gadget; internet, computer, printer and cable would improve administrative effectiveness in Nigerian universities. Ufuophu and Ayobami (2012) observed that the ICT include internet, satellite, cabled at a transmission and computer assisted equipment are facilities, tools or resources that could be used to process, store, preserve, access, retrieve and disseminate information with ease.

Attitude of ICT usage seem to influence administrative effectiveness of NTS in University of Ibadan. Littlejohn (2002) described attitude as an accumulation of information about an object, person, and situation or experience, a disposition to act in a positive or negative way toward some objects. According to Williams and Iruloh, (2014), if the attitude of a person toward a given object is known, it could be used in conjunction with other situational variables to predict and explain the reactions of these individuals towards that object. Some NTS have positive attitude toward the usage of ICT while some may have negative attitude towards ICT usage. Attitude of NTS toward their perception on ICT seems to be negative and has become a matter of concern (Oyedeji, 2018). The researcher added that despite the huge advantages associated with use of ICT, Most staff seem to spend more time at work on Facebook, Whatsapp, twitter, telegram and Zoom at the detriment of the university's goals. The ability of NTS to use ICT for effectiveness administration depends on their attitude, knowledge, and perception towards ICT generally.

It is assumed that positive attitude of ICT by NTS may contribute to administrative effectiveness while negative attitude could lead to ineffectiveness of administration. To some, attitude of ICT usage could be good, poor, positive and negative in their intensities or directions (Williams and Iruloh, 2014). The



administrative effectiveness in the area of ICT has been put in doubts due to the poor attitudes manifested by some of non-teaching staff in the University of Ibadan who appears to be non-committed to administrative effectiveness. Attitude of NTS towards ICT usage may influence administrative effectiveness. Because of this, the positive attitude of non-teaching staff towards ICT is crucial if university want a technological transformation that would allow innovation and administration effectiveness (Maker, 2020).

Knowledge of ICT usage is another element that appears to influence administrative effectiveness in the area of record keeping and essential services like security services, library services, administrative services, maintenance services, legal services, medical services, cleaning services in university of Ibadan. Knowledge ICT as used in this study refers to the ability of university non-teaching staff to make use of the various ICT tools such as e-mail, the internet, World Wide Web, intranets, extranets, online database and other networking technologies for effective administration. Successful incorporation of ICT in the university education system relies heavily on the knowledge of non-teaching staff towards the usage of modern technologies for effective administration (Kpolovie, 2014). However, experience and skills are subsumed in knowledge of ICT usage acquired by the non-teaching staff. Thus, experienced NTS need to be confident in using ICT effectively in documentation of administrative records (Kpolovie and Awusaku, 2016).

Knowledge of ICT usage encompasses understanding and applying a range of computer programmes, software and other applications. These applications include word processing, spreadsheets, databases, power points and search engines. All these applications are expected to employ by NTS when preparing memo, computing students' result, transcript, file and staff file, among others. The ability to manage all these applications require knowledge if administrative effectiveness is to be achieved. Ogunode, Babayo, Jegede and Abubakar (2021) observed that an ICT-driven system takes care of keeping a mountain of files in offices as information and they can be processed, stored, and retrieved within the university if the systems are networked.

Perception of ICT usage may also influence administrative effectiveness among NTS in the University of Ibadan. Perception, could also be defined as the way in which something is regarded, understood or interpreted. In other words, it is the impression or attitude grounded on what is thought or observed. The NTS adopt ICT in their various roles and responsibilities mainly because of its perceived benefits and importance to their output. Therefore, their perception toward the usage of ICT for administrative effectiveness is very vital to its adoption. The perceived benefits may not only be personal to the them alone but also to overall administrative duties in the university. The ICT is perceived to have many advantages in achieving administrative effectiveness (Michael, Caroyline and Peter, 2019). Understanding their perceptions in the use of ICT is vital in determining the pace at which ICT policies are implemented in the university administration.



It is therefore, for non-teaching staff in the University of Ibadan to carry out their administrative duties efficiently and effectively, especially in this age of knowledge-based technology and globalization, the use of ICT becomes imperative. There is need for NTS to develop positive attitude, adequate knowledge, good perception and utilization of ICT if administrative effectiveness is to be achieved. However, studies like (Ajah, 2019; Birgit and Mario, 2017; Adetimirin, 2016; Mewcha and Ayele, 2015) have been conducted on administrative effectiveness of non-teaching staff, most of these studies focused on the use of ICT, teachers' attitudes, female lecturers' perception of ICT Integration, ICT adoption attitude of lecturers and assessing teachers' perception with little or no focus on the combined influence of knowledge, attitude and perception of ICT usage on administrative effectiveness of NTS. It is against this background that the study investigated perception of the University of Ibadan NTS to knowledge, attitude and utilization of ICT for administrative effectiveness.

Statement of the Problem

It is observed that ineffectiveness of university non-teaching staff in record keeping is evident in the lack of proper managing of students and staff record as well as ineffective services rendered in the institution. However, it appears that proper usage of ICT tools of NTS could lead to administrative effectiveness of their services and records keeping.

Some of these non-teaching staff appear not to have adequate knowledge that would aid the application of ICT skills to enhance security services, library services, administrative services, maintenance services, legal services, medical services, cleaning services, among others. The seemingly lackadaisical attitude and poor perception of ICT usage also appear to be hampering the chances of achieving administrative effectiveness in the University of Ibadan. Past studies conducted on administrative effectiveness considered the use of ICT, teachers' attitudes and female lecturers' perception of ICT Integration than attitude, knowledge and perception ICT usage. It is based on these scenarios that this study investigated the influence of perception of the university of Ibadan non-teaching staff to knowledge, attitude and utilization of ICT for administrative effectiveness.

Purpose of the Study

Generally, the study investigated the perception of the University of Ibadan NTS to knowledge, attitude and utilization of ICT for administrative effectiveness. Specifically the study examined the level of administrative effectiveness among non-



teaching staff and investigated attitude, knowledge and perception of ICT usage among NTS in the University of Ibadan, Ibadan, Nigeria.

Research Question

1. What is the level of administrative effectiveness among NTS in the University of Ibadan?

Hypotheses

The following hypotheses were formulated:

H₀₁: There is no relative contribution of attitude, knowledge and perception of ICT usage to administrative effectiveness among NTS in the University of Ibadan, Ibadan, Nigeria.

H₀₂: There is no joint contribution of attitude, knowledge and perception of ICT usage to administrative effectiveness among NTS in the University of Ibadan, Ibadan, Nigeria.

Methodology

The descriptive survey research design was employed for this study. The population of this study comprised 1020 NTS in 17 faculties in the UI. The sample size for this consisted of 181 NTS in the UI. The multistage sampling procedure was adopted for sample selection. Purposive sampling technique was used to select five faculties (Arts-42, Education-96, Science-166, Social Science-42 and Economics-16) in the UI. This is due to the duration they all spend for a degree programme. Again, the proportionate to size sampling technique was applied to select 50% of NTS from each faculty (Arts-21, Education-48, Science-83, Social Science-21 and Economics-8) which gave the study 181 respondents. A research instrument titled AE Questionnaire (AEQ) and Perception, Attitude, Knowledge and UICT Questionnaire (PAKUICTQ) with a reliability value of $r=0.78$ and 0.81 was used to elicit responses. The instrument was face and content validated by experts in the Department of Educational Management of the UI.

The questionnaire had three sections- A to C. Section A comprised items which seek demographic information about the respondents such as name of faculty, sex, age, administrative experience among others. Section B considered attitude, knowledge and perception of ICT usage with three sub-scales- Attitude of ICT usage scale had 7 items; perception of ICT usage scale had 7 items with 4-point Likert scale of Very High (VH), High (H), Low (L) and Very Low (VL) while knowledge of ICT



usage scale has 10 items. Information levels about knowledge of ICT usage among non-teaching staff was rated through I can use it to a small extent =1, I can use it satisfactorily=2, I can use it well =3 and I can use it very well=4. Section C focused on Administrative Effectiveness Scale (AES) with ten items. Response anchor based on the four Likert points which range from Very Effective (VE); Effective (E); Minimally Effective (ME); Ineffective (I). Descriptive statistics was used to answer research question while inferential statistics of Pearson Product Moment Correlation (PPMC) and multiple regression was employed to test hypotheses.

Result of the Findings

Research Question 1: What is the level of administrative effectiveness among non-teaching staff in the University of Ibadan?

Table 1: Level of Administrative Effectiveness

S/N	Statements	VE	E	ME	I	MEAN (\bar{x})	Std D
1.	Record keeping	69 (40.1)	62 (36.0)	23 (13.4)	18 (10.5)	3.06	0.98
2.	Online processing of academic transcript	50 (29.1)	84 (48.8)	14 (8.1)	24 (14.0)	2.93	0.97
3.	Computation of students result	70 (40.7)	63 (36.6)	16 (9.3)	23 (13.4)	3.05	1.01
4.	Registration of new students	51 (29.7)	65 (37.8)	33 (19.2)	23 (13.4)	2.85	0.99
5.	Maintaining discipline records of students	70 (40.7)	60 (34.9)	17 (9.9)	25 (14.5)	3.02	1.05
6	Internet facilities	57 (33.1)	62 (36.0)	27 (15.7)	26 (15.1)	2.87	1.04
7	Monitoring students' academic progress	56 (32.6)	59 (34.3)	34 (19.8)	23 (13.4)	2.86	1.02
8	Student portal	38 (22.1)	80 (46.5)	29 (16.9)	25 (14.5)	2.76	0.96



9	Speedy execution of tasks	38 (22.1)	80 (46.9)	29 (16.9)	25 (14.5)	2.72	1.06
10	Staff portal	51 (29.7)	84 (48.8)	19 (11.0)	18 (10.5)	2.98	0.91

Very Effective (VE); Effective (E); Minimally Effective (ME); Ineffective (I)

Table 1 reveals that 76.1% of the respondents had high degree view that record keeping was effective ($\bar{X}=3.06$); 77.9% of the respondents were of the opinion that online processing of academic transcript was effective ($\bar{X}=2.93$); 77.3% of the respondents confirmed that computation of students result was effective ($\bar{X}=2.85$); 67.5% of the respondents maintained that registration of new students was very effective ($\bar{X}=2.85$); 75.6% of the respondents had high degree view that maintaining discipline records of students was effective ($\bar{X}=3.02$); 69.1% of the respondents maintained that internet facilities was effective ($\bar{X}=2.87$); 66.9% of the respondents were of the opinion that monitoring students' academic progress was effective ($\bar{X}=2.86$); 68.6% of the respondents agreed that student portal was effective ($\bar{X}=2.76$); 69.0% of the respondents confirmed that speedy execution of tasks was very effective ($\bar{X}=2.72$) While 78.5% of the respondents had high degree view that staff portal ($\bar{X}=2.98$). Based on the result from the above table, the data indicates that the mean ratings of the respondents for items 1 to 10 are 3.06, 3.93, 3.05, 2.85, 3.02, 2.87, 2.86, 2.76, 2.72 and 2.98 with corresponding standard deviation of 0.98, 0.97, 1.01, 0.99, 1.05, 1.04, 1.02, 0.96, 1.06 and 0.91. The cluster mean of above items was accepted as all rated above decision bench mark of 2.50 which shows that level of administrative effectiveness among non-teaching staff in the University of Ibadan was highly effective. The finding of this study is tantamount to result of Comfort (2012) who revealed that schools with high level of administrative effectiveness manifest high level of discipline.

Hypothesis 1: There is no relative contribution of attitude, knowledge and perception of ICT usage to administrative effectiveness among non-teaching staff in the University of Ibadan, Ibadan, Nigeria.



Table 1: Attitude, knowledge and perception of ICT usage to administrative effectiveness

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	3.217	1.182		2.721	.007
Attitude of ICT usage	.485	.104	.453	4.669	.000
knowledge of ICT usage	-.159	.079	-.166	-2.010	.046
perception of ICT usage	.523	.101	.484	5.204	.000

a. Dependent Variable: Administrative Effectiveness

The results in Table 1 indicated that with all the independent variables (attitude, knowledge and perception of ICT usage) individually entered into the regression model at once, Attitude of ICT usage relatively contributed 45.3%, knowledge of ICT usage relatively contributed 16.6% and perception of ICT usage relatively contributed 48.4 to the total variation in the administrative effectiveness. The table also revealed that only perception of ICT usage had the highest and significant contribution to administrative effectiveness in the University of Ibadan (45.3%, $P < 0.05$). This implies that attitude of ICT usage is a potential predictor of administrative effectiveness. Therefore, hypothesis for attitude, knowledge and perception of ICT usage to administrative effectiveness was rejected. Attitude, knowledge and perception of ICT usage make a significant contribution to the administrative effectiveness in the University of Ibadan. This finding agrees with finding of Nwangwu, Ememe and Obike (2013) who investigated management information system as a tool in the administration of secondary schools in Aba Education Zone, South East Nigeria. Findings showed that result oriented administration and speedy execution of tasks constituted the general administrative performance of secondary school principals.

Hypothesis 2: There is no joint contribution of attitude, knowledge and perception of ICT usage to administrative effectiveness among non-teaching staff in the University of Ibadan, Ibadan, Nigeria.

Table 2: Joint Contribution and Administrative Effectiveness

REGRESSION	ANOVA ^a				
Model	Sum of Squares	Df	Mean Square	F	Sig.
R = .770	3002.978	3	1000.993	81.042	.000 ^b



R Square =.593	2062.706	167	12.352		
Adjusted R Square =.585	5065.684	170			

a. Dependent Variable: Administrative Effectiveness

b. Predictors: (Constant), attitude, knowledge and perception of ICT usage

The results in table 2 showed that with all the predictor variables (attitude, knowledge and perception of ICT usage) entered into the regression model at once, there was a significant prediction of administrative effectiveness ($R = .770$; $R^2 = .593$; F value) = 81.042; $p < .05$). This showed that the independent variables accounted for 59.3% of the variance in administrative effectiveness. The remaining 40.7% might be captured by other exogenous variables that were not captured in the model. Based on this analysis, hypothesis 2 which states that there is no significant joint contribution of attitude, knowledge and perception of ICT usage to administrative effectiveness among non-teaching staff in the University of Ibadan, Ibadan, Nigeria was therefore rejected. This indicates that there is significant joint contribution of attitude, knowledge and perception of ICT usage to administrative effectiveness among Non-teaching staff in the University of Ibadan, Ibadan, Nigeria The finding is similar to the finding of supports the findings of AL-Gharaihand Malkawi (2013) who conducted studied on the impact of management information systems on the performance of governmental organizations and found that there was a significant impact of networks, individuals and procedures, and management information system as a whole on the performance of governmental organizations.

Conclusion

From the data collected and analysed, the researcher arrived at the following conclusions about the study.

There is high level of administrative effectiveness among non-teaching staff in the University of Ibadan. This implies that non-teaching staff are effective in performing their administrative duties.

The study likewise established that only perception of ICT usage had the highest and significant contribution to administrative effectiveness in the University of Ibadan. This implies that attitude of ICT usage is a major factor that contributes to administrative effectiveness. The equally established that positive attitude, high knowledge and good perception of ICT usage improve administrative effectiveness among non-teaching staff in the University of Ibadan, Ibadan, Nigeria



Recommendations

Based on the findings, the following recommendations were made:

1. Management of university should continue to improve on effectiveness of administrative staff by providing enabling conducive environment. Management of the institutions should engaging administrative staff, most especially those are in ICT section in the university to train and re-train of non-teaching staff on how to use ICT in their respective career for effective administration
2. Information and Communication Technology should be the modern means of improving administrative effectiveness especially in the University system.
3. University management should encourage non-teaching staff to have positive attitude of ICT usage and perception about ICT usage in order to achieve administrative effectiveness in the university.

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CHAPTER 41

COMMUNITY COUNSELLING ON THE IMPACT OF ANTHROPOGENIC ACTIVITIES ON THE PHYSICAL ENVIRONMENT IN CHANCHAGA LGA, MINNA, NIGER STATE, NIGERIA

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Abstract

Anthropogenic impact on the physical environment includes changes to biophysical environments and ecosystems, biodiversity and natural resources which is caused directly or indirectly by humans, including global warming, overexploitation and deforestation, among others. Community counselling is required to educate and empower the people in the prevention or continuation of these anthropogenic activities. This research is aimed at providing community counselling intervention on the impact of anthropogenic activities on the physical environment in Chanchaga LGA Minna Niger State, Nigeria. The data for the land use and land cover changes based on the anthropogenic activities was sourced through Earth explorer using land multi – data satellite images of landsat7 imagery of 1999, 2009 and 2020, while the data for the identification of the anthropogenic activities as well as the impacts of land degradation were through the use of questionnaires. The analysis of Land Use and Land Cover (LULC) was through the processing of image layer stacking, resampling and image enhancement of the datasets, the types of land use land cover features that were identified includes built up area, agricultural land, vegetation, bare- land and water bodies. The data from the questionnaire were subjected to statistical package (SPSS) 24 using descriptive statistics and presented in figures. The findings of the study unveil sources of anthropogenic activities in the study area include, over population, urbanization, overgrazing, deforestation, and over exploitation $\bar{X} = 3.92, 3.91, 3.62, 3.58, 3.52$ and 2.91 respectively. Furthermore, the community counselling intervention showed a promise of improving the knowledge of the residents in the prevention of further anthropogenic activities. The study recommends a need for sustainable land use management policy, land registry and certification, and sustained counselling of residents in the study area.



Keywords: *Community Counselling, Impact, Anthropogenic, Environment*

Introduction

In the current context of unsustainability that we inhabit, education is considered to be a necessary pillar for social transformation towards sustainable environmental development. According to Agirreazkuenaga (2019) the perspective of the environmental educator is adopted as they play an indispensable and determining role in community counselling for sustainability. Furthermore, the involvement of the counsellor leads to personal motivation and good leadership which are essential for the success of the program, together with the support of local authorities. More so, Durosaro et.al. (2020) reported that education goes beyond teacher-students intervention only. Citizenship education is teaching that opens people's eyes and minds to the realities of the world, and awakens them to bring about a world of greater justice, sustainability, self-reliance and human rights for all. Community education which stresses the rights and obligations of all towards all others is not only global level endeavour but is even more important at the grassroots because it is at the grassroots level that children learn and practice how to function with others. It is only with this type of experience that young people can gain the skills that they will need in the future, and to work at both the local and global levels. Giacomucci (2021) views community counselling as a form of social work which can help in several aspects of the community including health, economy and agriculture among others. Our community counselling on environment is not left out. Creating awareness of the monitoring of the environment to avoid damages of tremendous proportion is a paradigm shift away from the standard practice of waiting for disasters to happen before an intervention is made.

Human or anthropogenic impact on the environment includes changes to biophysical environments and ecosystems, biodiversity and natural resources is caused directly or indirectly by humans, including global warming leads to environmental degradation (Cook, 2016). Similarly, (Sahney, et al., 2016) opined that modifying the environment to fit the needs of society is causing severe effects, which become worse as the problem of human overpopulation continues. Some human activities that cause damage (either directly or indirectly) to the environment on a global scale include human reproduction, overconsumption, overexploitation, pollution, and deforestation, to name but a few (Perkins, 2017).

Anthropogenic activities impact directly and indirectly on people's livelihoods, their vulnerability and food security (McDonagh, et al., 2016). Bationo, et al. (2016) stated that land degradation is the most serious threat to food production, food security, and natural resource conservation in Africa. They explained that the African population is trapped in a vicious cycle between land degradation and poverty,



and the lack of resources and knowledge to generate adequate income and opportunities to overcome the challenges of land degradation.

Land use changes in Nigeria have transformed land cover to farmlands, grazing lands, human settlements, and urban centres at the expense of the natural vegetation (Abdullahi, *et al.*, 2010). These changes are associated with deforestation, biodiversity loss, and land degradation (Maitima, *et al.*, 2019). For example, in the early 2000s, approximately 30 % of Nigeria's land was affected by very severe to severe land degradation and an estimated 12 million people, equivalent to a third of the Nigeria's population, depended directly on that land which was being degraded (Bai and Dent, 2017).

Anthropogenic activities constitute a serious problem in many parts of the world. The causes, processes, prediction and control have aroused the interest of many researchers (Ireland *et al.*, 2016). Natural events such as erosion can be hazardous to man. The disasters that natural hazards can cause are largely the result of actions by man that increase vulnerability, or lack of action to anticipate and mitigate the potential damage of these events

Materials and Methods

The mapping depends on the use of computer-assisted interpretation of satellite imagery. Field survey were been conducted; GPS coordinates was used to be captured in the field to enable the GIS techniques to develop the geospatial map of degradation in the area. Change in Land use over time will be detected by comparing the different and level of degradation in the area. Agricultural land was delineated in order to determine the level of degraded agricultural land.

The objective of land use and land change was achieved through the use of multi – date satellite images of landsat, they include Landsat Thematic Mapper, Enhanced Thematic Mapper and Operational Land Imager with a resolution of 30m of 1997, 2007, and 2017 respectively were used for land use/ land cover classification. These datasets were imported to Idrisin Terrset. Digital image analysis was carried out. The major image processing steps include image layer stacking, resampling, and image enhancement of the datasets which are of utmost importance for LULC analysis. The types of land use land cover features that were identify in this study includes; (built up area, agricultural land, vegetation, water bodies).

Structured questionnaires, direct interview and field work were employed. Structured questionnaires were administered to the residents of the study area and its environs with a section of questions asking on the source of anthropogenic activities in the area and its environs. The information and results generated from questionnaire were subjected to statistical treatment using descriptive statistics and presented in figures to demonstrate the effectiveness of the responses with analysing comments. A



total number of 3,459 household were identified in the study area. From the total of 3,459 households in the study area, 10% which is approximately 346 were sampled. Therefore, the calculated sample size using the equation was 346. Based on household population 10% of the calculated sample size was given to each of the selected neighborhoods under study based on their household population

In this study, the populations of the respondents (both male and female) in Chanchaga LGA Nigeria were used. The findings from this segment were used to generate for the entire population.

The sample size for the study will be determined using the Yaro Yamane techniques.

The formula stated as

$$n = \frac{N}{1 + N(e)^2} \quad 3.1$$

Where n = desired sample size

N = population size under study

E = level of significance of error. Assumed to be 5%

I = constant

The Study Area

Chanchaga is a Local Government Area in Niger State. Been the study area is located between, longitude 6° 6' 0"E, latitude 9°10'0"N and, longitude 6° 10'0"E, latitude 9°50'0"N. It headquarters is Chanchaga. It has an area of 1692km² and a population of 203,134 as projected in 2019 using National Population Commission (NPC) figure of 2006 with 2.5% annual growth rate. The postal code of the area is 920 (Hassan, 2013). The population of Chanchaga LGA of Niger State mostly comprise of the key tribes Gwari, Nupe and Hausa. The State has 25 local government areas with Minna as its capital. Chanchaga lies on a valley bed (lowland) bordered to the east by Paida hill stretching eastwards towards Maitumbi and essentially savannah and quite conducive for farming. It borders Wushishi and Gbako to the west, Shiroro to the North, Chanchaga to the East and Bida to the south (Akpenpuun, 2013)

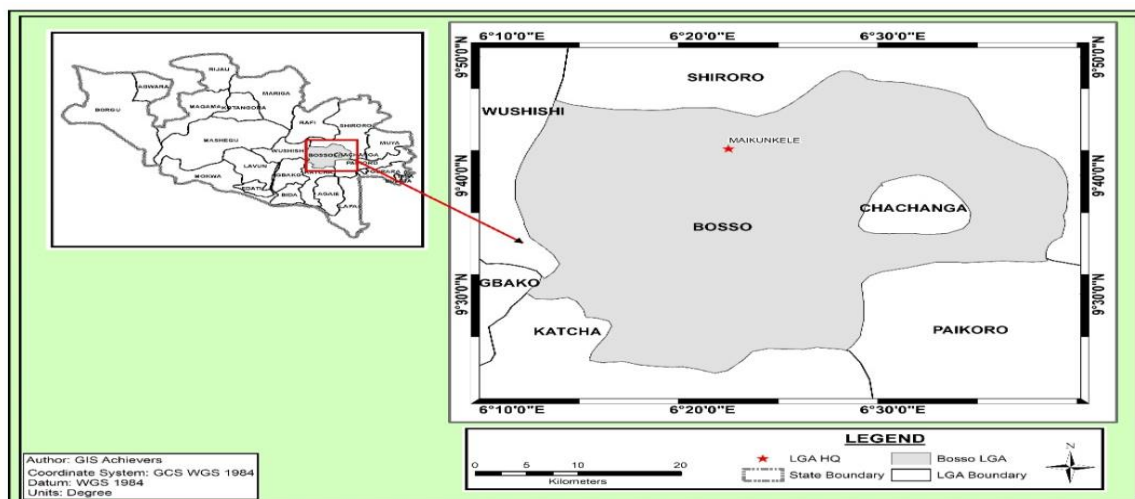


Figure 1: Niger State Showing Chanchaga LGA
Source: Geography Department FUT Minna (2022)

Data Analysis

Identifying Sources of Anthropogenic Activities in the Study Area

In order to identify sources of anthropogenic activities, organization of the data collection was from the questionnaires administered to the households of the study area. Resident of Four different locations in Chanchaga were considered which are Kpakungu, Tunga, Sauka kahuta and Limawa of Chanchaga LGA. Three hundred and forty-six (346) questionnaires were administered and two hundred and ninety-one (291) among the retrieved questionnaire were found valid for the analysis.

Table 1 below unveils that distribution of respondent across the selected location in the study Area. The result discloses that out of three hundred and forty-six (346) questionnaires administered, two hundred and ninety-one (291) representing 85.1% of the sample administered were retrieve and found valid for the study. Hence, appropriate number of respondents' responses was used.

Table 1: Distribution of participants in the study area

Peri-Urban Area	Questionnaire Administered	Questionnaire Returned
Kpakungu	142	95
Tunga	55	51
Sauka kahuta	86	85
Limawa	63	60
Total	346(100.0)	291(85.1)

Source: Authors field work, 2022



Sources of Anthropogenic Activities in the Study Area

Table 2 unveils the sources of anthropogenic activities in the study area, the value of mean display on the Table 2 shows that majority of the participant were of the opinion that over population, urbanization, overgrazing, deforestation, over exploitation are sources of anthropogenic activities in the study area with mean response of $\bar{X} = 3.92$, 3.91, 3.62, 3.58, 3.52 and 2.91 respectively. On the other hand, the participant does not see the poor farming activities as the major source of anthropogenic activities.

Table 2: Sources of anthropogenic activities in the study area

Statement	SA	A	U	DA	SDA	Mean	Remark
Deforestation	74(25.4)	119(40.9)	35(12.0)	28(9.6)	35(12.0)	3.58	Accepted
Overgrazing	88(30.2)	93(32.0)	53(18.2)	26(8.9)	31(10.7)	3.62	Accepted
Urbanisation	108(37.1)	97(33.3)	49(16.8)	27(9.3)	10(3.4)	3.91	Accepted
Over exploitation	92(31.6)	81(27.8)	39(13.4)	44(15.1)	35(12.0)	3.52	Accepted
Over Population	111(38.1)	98(33.7)	52(17.9)	9(3.1)	21(7.2)	3.92	Accepted
Poor Farming activities	51(17.5)	46(15.8)	62(21.3)	89(30.6)	43(14.8)	2.91	Rejected

Source: Authors field work, 2022

The response from people based on the major sources that are involve in the anthropogenic activities in the study area are disclose in Figure 2, the result unveils that 268 (92.1%) respondent considered resident to be the major people that are involve in the anthropogenic activities, followed by farmers 201 (69.1%), businessmen 196(67.4%), miners 189 (64.5) and finally 59 (20.3%) are herdsmen.

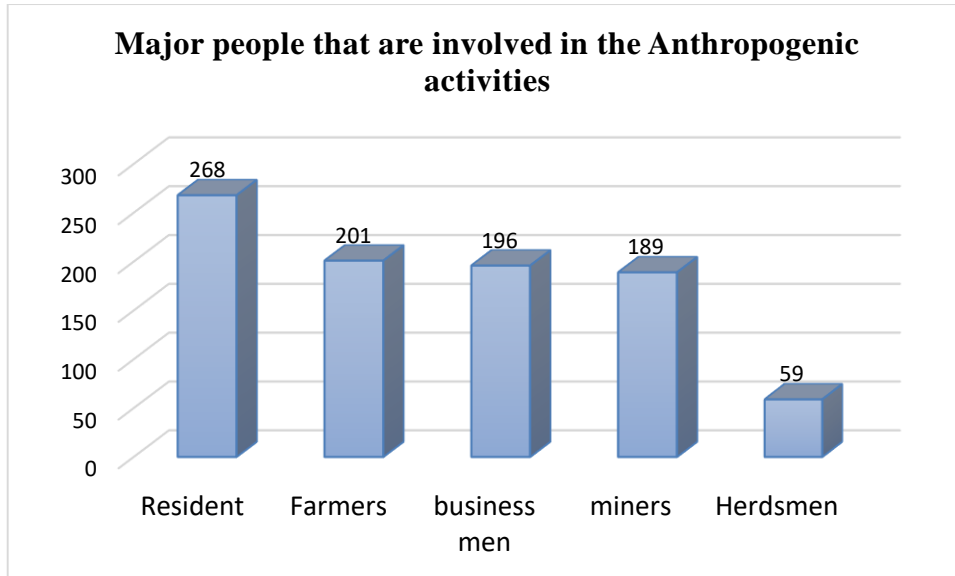


Figure 2: Major people that are involved in the Anthropogenic activities

Finally, majority of the participant attest of regular cutting down of tress, burning of forest as well as building of structures as the basic anthropogenic activities in the study area, the presence of commercial and industrial activities contributed to the anthropogenic activities in the area was agreed upon by the participants of the study that 191 (65.6) strongly agreed while 25 (8.6%) strongly disagreed.

Delineation of the Land Use and Land Cover of the Area

The classification results for the LULC changes across the Chanchaga LGA are presented using tables, charts and figures for illustration and interpretation of all land use/land cover classes in the three decades of 1999, 2009 and 2020.

Analysis of Land Use and Land Cover Classification for Chanchaga

The supervised classification procedure was adopted because this permits the specification of parameters based on prior knowledge of the study area. The conventional supervised Maximum Likelihood Classification Algorithm was used to extract information from the satellite data and image analysis was carried out to detect the change in the land use/land cover (LU/LC) of Chanchaga LGA of Niger State between 1999 and 2020. The total area for the land use/land cover classification is shown table 4.6.

(a) Satellite imagery LULC classification for Chanchaga 1999

The land use/ land cover map gives an account of the spatial distribution and areal extent of various categories of land use/land cover over the study area. Figure 3 presents the classified land use/land cover map of the study area for the year 1999. The map portrays five (5) categories of land use/land covers; built-ups, vegetation, farmland, water body and bare surface. The areal extent of these classes reveal that the dominant class is farmland which covers 24.61 km² (35.53%), this is followed by vegetation with 22.40 km² (32.34%), built up areas covers 17.17km² (24.79%). This is seen more at the centre, bare surface on the other hand occupies an area of 5.06 km² (7.30%) and water body with 0.02 km² representing (0.03%) of the total area as the less dominant land use and land cover class.

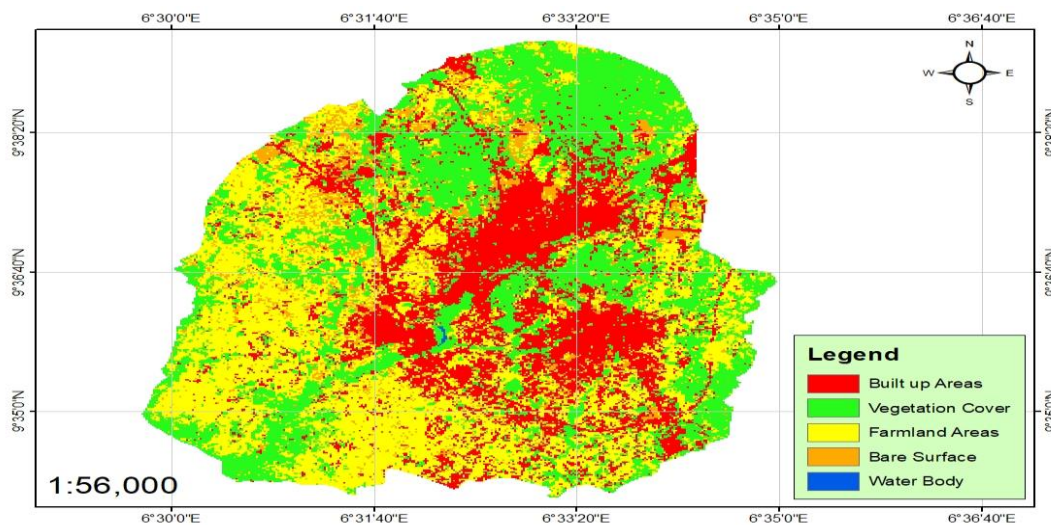


Figure 3: Chanchaga LULC distribution map generated from Landsat 7 TM of 1999

Source: Author's Analysis, 2022

(b) Satellite imagery LULC classification for Chanchaga 2009

Figure 4 reveals the classified land use/land cover map of the study area for the year 2009. The map also reveals five (5) categories of land use/land covers, the areal extent of these classes reveal that the dominant class is was still farmland which covers 24.61 km² (35.53%), however, there was a slight reduction of 1.44%. in 2009, farmland occupies an area of 23.60km² (34.09%). This is followed by built up areas as it occupies an area of 23.11 km² (33.38%) an increase of 8.59% within the ten years' period. Additionally, there was a drastic reduction in vegetation with 22.40 km² (32.34%), built up areas covers 17.17 km² (24.79%). Bare surface on the other hand occupies an area of 5.16 km² (7.45%) and water body with 0.06 km² representing (0.09%) of the total area as the less dominant land use and land cover class.

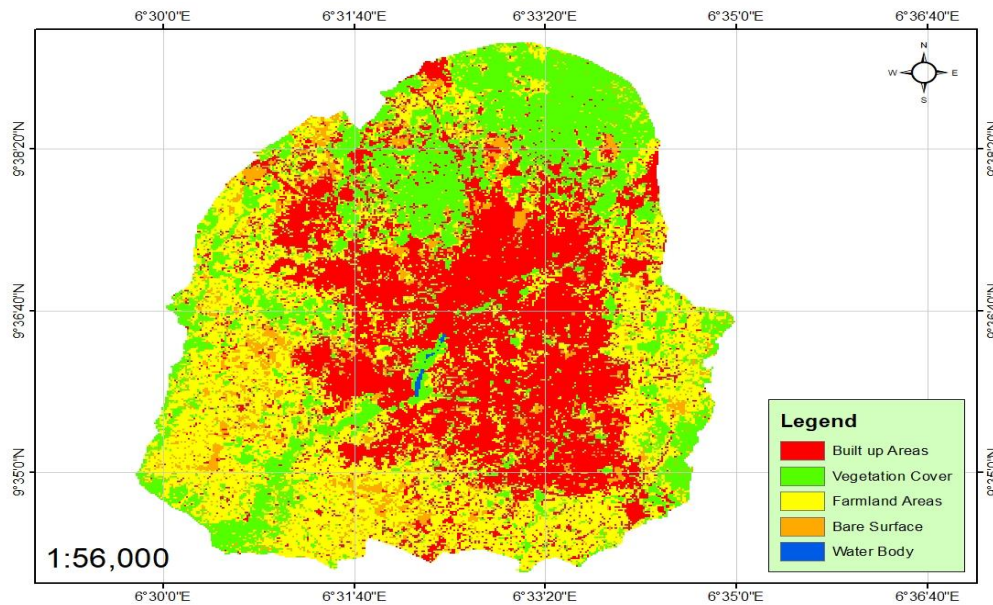


Figure 4: Chanchaga2009 LULC distribution map generated from LandSat 7 TM

Source: Author's Analysis, 2022

(c) 2020 Satellite imagery LULC classification for Chanchaga

Figure 5 reveals the maximum likelihood classified land use/land cover map of the study area for the year 2020. The map also shows five (5) categories of land use/land covers, the areal extent of these classes further reveal that the dominant class is built up areas which occupies an area of 40.34 km² (58.25%) in 2020 from 23.11 km² (33.38%) in 2009 an increase of 24.87% within the ten years' period. The increase in built up areas has change the physical settings which has resulted to haphazard development in Chanchaga local government area.

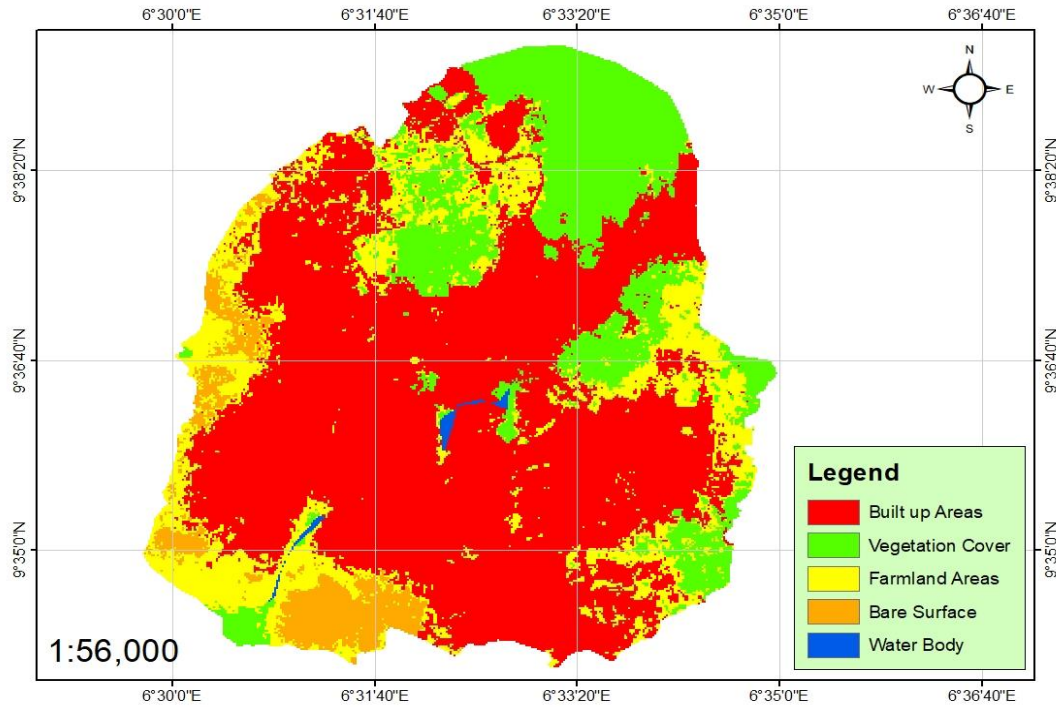


Figure 5: Chanchaga2020 LULC distribution map generated from LandSat 8OLI

Source: Author’s Analysis, 2023

There was a further reduction on farmland area which covers 24.61 km² (35.53%) in 2009 but reduced to 12.42 km² (19.93%), there was a drastic reduction of 15.6% in 2020. Vegetation cover on the other hand occupies an area of 12.91 km² (18.64%) a decrease of 6.36% within the ten years’ period. This is attributed to high level of developmental activities in the study area. Bare surface on the other hand occupies an area of 3.38 km² (4.88%) and water body with 0.21 km² representing (0.30%) of the total area as the less dominant land use and land cover class.

Table 3 and figure 5 shows the areal extent for each of the land use and land cover categories under study for each of the selected years.

Table 3: Land use and Land cover Distribution of Chanchaga (1999, 2009 and 2020)

LULC	1999		2009		2020	
	Area (Sqkm)	Area covered (%)	Area (Sqkm)	Area covered (%)	Area (Sqkm)	Area covered (%)
Built up	17.17	24.79	23.11	33.38	40.34	58.25



Vegetation cover	22.40	32.34	17.30	25.00	12.91	18.64
Farmlands	24.61	35.53	23.60	34.09	12.42	17.93
Bare Surface	5.06	7.30	5.16	7.45	3.38	4.88
Water Body	0.02	0.03	0.06	0.09	0.21	0.30
Total	69.25	100.00	69.25	100.00	69.25	100.00

The supervised classification procedure was adopted because this permits the specification of parameters based on prior knowledge of the study area. The conventional supervised Maximum Likelihood Classification Algorithm was used to extract information from the satellite data and image analysis was carried out to detect the change in the land use/land cover (LU/LC) of Minna between 1999 and 2020. The total area for the land use/land cover classification is shown in figure 6

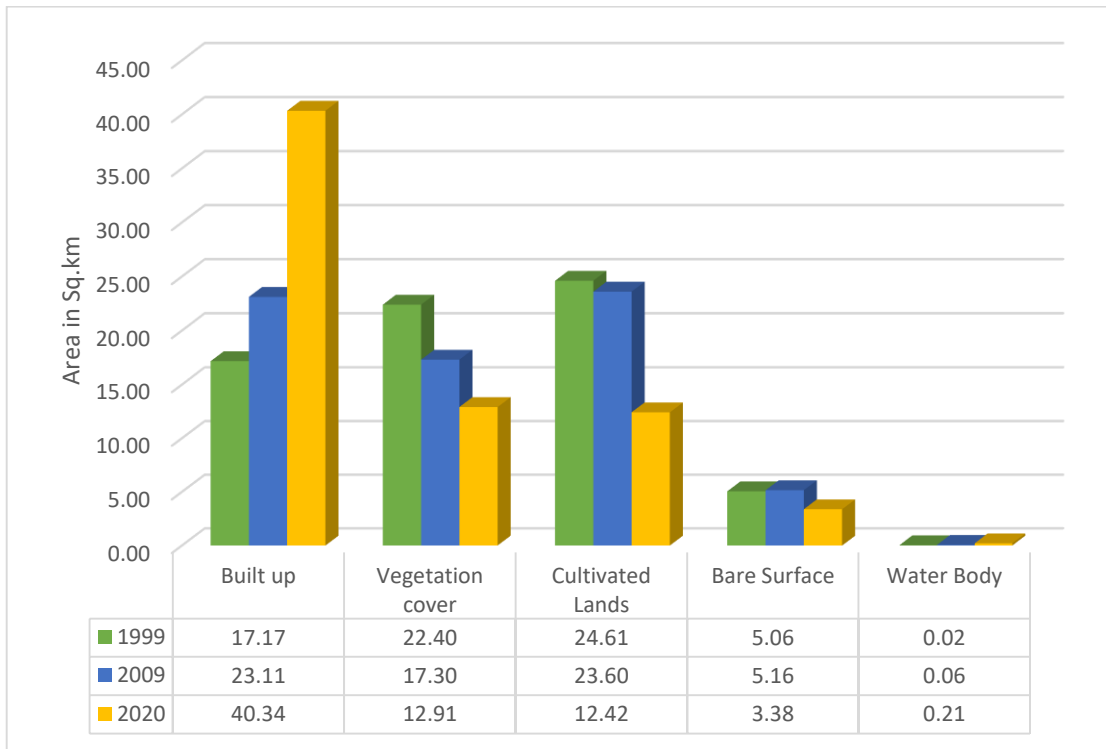


Figure 6: Total area for the land use/land cover classification



Magnitude and Percentage of Change in Land Use/Landover between 1999 and 2020

The magnitude of change of forest area for 21 years from 1999 to 2020 showed that vegetation cover decreased by -9.42 Sq. km representing a change (-42.35%) of the total change for the period as shown on Table 4.7. farmland had an annual rate of change of -10.40% within the study years while bare surface had the least annual rate of change of -6.95%. The period witnessed more increase in Built up area. The built up land increased by 23.17 Sq. km representing 134.96% of the total change with an annual growth rate of 28.34% as shown on table 4.

Table 4: Magnitude and Percentage of Change in Land Use/Landover between 1999 and 2020

LULC Class	1999 Extent (Sq. km)	2020 Extent (Sq. km)	Magnitude of Change (Sq. km)	Percentage of Change	Annual Rate of Change %
Built up	17.17	40.34	23.17	134.96	28.34
Vegetation cover	22.40	12.91	-9.49	-42.35	-8.89
farm Lands	24.61	12.42	-12.19	-49.54	-10.40
Bare Surface	5.06	3.38	-1.67	-33.11	-6.95
Water Body	0.02	0.21	0.18	780.77	163.96

In addition, figure 7 shows the increasing trend of urban areas across the study area, it indicates that urban areas increase from 24.79% in 1999 to 33.38% in 2009 and increased further to 58.25% in 2020. This shows that there is high level of urban growth taking place across the study location.

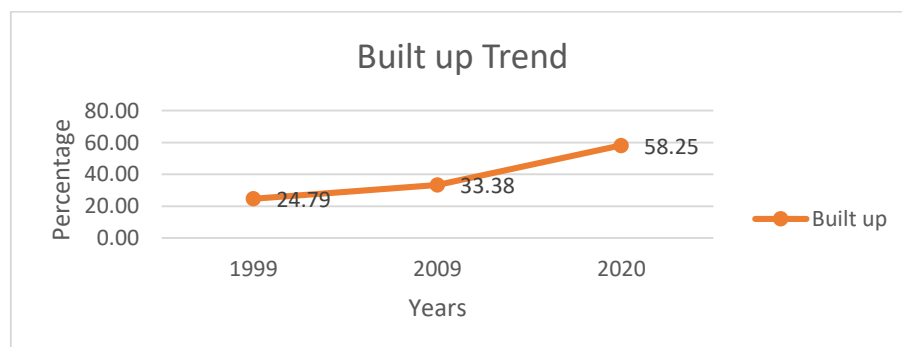


Figure 7: Built up Trend Chart



Conclusion

The present study was able to investigate into the majors' sources of anthropogenic activities in Chanchaga LGA. The delineation to the land cover over the years, its impact to the agricultural lands and the adverse effect of the activities were investigated. Based on the findings of the study it can be concluded that there are anthropogenic activities going on in the study area.

The analysis of delineation of the land cover change in Chanchaga LGA unveils there was a drastic reduction in area of vegetation over the period of 1999 to 2020, which can be attributed majorly anthropogenic such as deforestation, urbanization, overgrazing and other development activities. The degraded land cover has been proven to have direct impact on the agricultural lands in the study area. It was discovered anthropogenic activities has greatly contributed to the loss of soil nutrient, exposure of soil to erosion, impede plant growth, soil salinity. Low yield of agriculture becomes a threat for the farmers in the area as a result of anthropogenic activities; cultivated land to grazing, cultivated land to urban, cultivated land to infrastructural constructions as well as eroded cultivated land by running water.

Recommendations

1. The anthropogenic activities within the vicinity of the agricultural land should be regulated.
2. Policy should put to control and restrict the various anthropogenic activities such as mining, deforestation, to prevent its hazardous effects on lives and properties of the people.
3. Enlightening programs should be organized on proper anthropogenic activities as well as risk involved in wrong practices.

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CHAPTER 42

INFLUENCE OF PERFORMANCE MANAGEMENT ON SCHOOL ENTREPRENEURIAL BUSINESS IN SOUTHWESTERN NIGERIA

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Abstract

This study examines the performance management variables such as employee conducts, quality of work produced, quantity of work produced, regularity or punctuality of employees at work place and organizational objectives achievement and school entrepreneurial business within the Southwestern Nigeria context, by drawing from the different but related performance management and school entrepreneurial business theories. We operationalised the construct of performance management by identifying the key variables appropriating in organization for effective operations in school entrepreneurial business in Southwestern Nigeria. The study is descriptive in nature. Multi stage sampling techniques was used to sample and collected data largely from surveys of 500 school proprietors or managers using four point Likert scale questionnaire. The study provided important insights into the concepts related to performance management and school entrepreneurial business in to enrich our knowledge in this educational sector. The research contributes to knowledge on school entrepreneurial business in Nigeria by conceptualising a model of school entrepreneurial business relationship with performance management. The implications of the research relate closely to the way in which school manager appropriate performance management variables in school entrepreneurial business in other to be able to survive in a global and competitive environment.



Keywords: *Entrepreneurial Business, Performance management, School managers, Employees*

Introduction

School Entrepreneurial business are faced with a serious challenge which is affecting the business. Due to these challenges, the school entrepreneurial industry needs adopt effective performance management to boost the organisation. Conceptualisations of performance management are still very germane, Donohoe (2019) defined performance management as “an approach to creating a shared vision of the purpose and aims of the organisation, helping each individual employee understand and recognized their part in contributing to them and in so doing manage and enhance the performance of both the individual and the organization”

This definition distinctively revealed the importance key indices that can boost the organizational performance such as employee’s conduct, regularity or punctuality, quality and Quantity of work produced and achievement of organizational objective or vision. All these are indispensable indicators of performance management. Quantity of work produced is the performance measurement that are being used as an indicators of effective performance, which as well include the measure of number of units produced, processed or sold by the employees (UC Riverside, a2016). Quantity of work produced observed as the indicator that crucial and most significance of the employee performance management measurement. Similarly, the work quality produced is generally the percentage measure of work output which must be done again. These can also be seen as percentage of product eventually released to the labour market (Priya, 2019).

Regularity or punctuality is another evident measure of an employee performance in which reveal their regularity in the place of work (Wynne-Jones, *et al*, 2009; Parker, 1995). An employee who has a habit of being late or absent from himself from work manifest his unpunctuality towards his work. Some factors such as inadequate motivational strategies and morale results to regular absenteeism from work (Parker, 1995). However, absenteeism is inculcated into better performance management system inculcates. More so, Thierry (2018) centered his studies on filling the distance wherein punctuality and/or place of work attendance appear to have been neglected or now no longer given previous attention, for this reason, supplying sensible and theoretical solutions to the trouble of time and overall performance.

Another good indicator of an employee’s performance is the speed with which employees perform at work shows the efficacy of the organization is an indicator of performance management (Harvey, 2005). The cost of production reduced as a result of speed of work by an employee. The output time spent to complete the tasks assigned, solve problems as well as coordinate with other stakeholders is seen as Speed of work.



Employees need to adhere to the school entrepreneurial business's policies as deviations from these policies might mean that the employee's goals are totally different from the organisation (Medori & Steeple, 2000). Bad habits of some individuals are gossiping and lethargy cannot relate directly with an employee's performance, however, evidently, the employees can undermine job performance. In the school entrepreneurial business, certain conduct might be clearly spelt out for specific purposes in order to ensure which ought to be followed strictly. The attention of the employees are drawn by this employees desirable conduct indices by the managers (Ulrich and Brockbank, 2005).

Performance management system is seen as critical points to the growth and development of established and new school entrepreneurial business Kempster and Cope (2010). This is most important for school entrepreneurial business operating particularly in turbulent and non-friendly environments which is being taken place in Nigeria today. Performance management is germane for private school entrepreneurial business which is being encourage by the Nigerian government as a mean of survival to reduce level of dependency on government and revenues from oil. Therefore, an appropriate configuration of entrepreneurial orientation is required in such environments. However, there is little existence of evidence from an empirical angle to enable the understanding of emerging performance management in conjunction with effective practice of school entrepreneurial business in developing countries and make them more competitive.

Hypotheses

- H0₁:** Performance Management variables have no significant relative influence on secondary schools entrepreneurial business in Southwestern Nigeria
- H0₂:** Performance Management variables have no significant joint influence on secondary schools entrepreneurial business in Southwestern Nigeria

Methodology

This study adopted the descriptive survey design. This research design can be seen as type of research design that aims to obtain systematically relevant information that describe a phenomenon, situation and people. This research design is chosen because the study does not require experimentation on respondents, it allows for the collection of information, peoples opinion and attitudes about a phenomenon. The study also is quantitative in nature since the study will adopt the research strategy of quantifying the collection and analysis of data in numerical form. The target population for this study consists of all the registered secondary schools owners and administrators in Southwestern Nigeria out which the sample of about five hundred (500) proprietors



and administrators were selected using multi stage sampling techniques. The total number of local governments sampled was 10, the sampled secondary schools were 50 as well as 50 school proprietors or administrators per local government which amounted to 500 altogether in the three states sampled out of six states in Southwestern Nigeria.

The sample for the study was selected through multistage sampling procedure. In the first stage, simple random sampling was used to select (3) states out of 6 states namely; Ekiti, Oyo and Ogun States. At the second stage, purposive sampling technique was used in the selection of Local Government Areas (LGAs) in each of the selected states that is the local government that are more of rural in which 3 (three) local governments are selected from Ekiti, 3 (three) from Ogun and 4 (four) from Oyo states making the total of 10 (ten). At the third stage, proportionate to size sampling technique is also used in selection of secondary schools. In Ekiti State, ten per cent (10 %) of secondary schools in each of the 3 LGAs alongside with the 50 secondary school managers were used which gave 150 secondary schools and school managers or administrators for the study. Ten per cent (10%) of the total number of secondary schools and managers/administrators in Ogun State which amounted to 150 participants together with Oyo State ten per cent of secondary schools and managers/administrators which amounted to 200 secondary schools and managers/administrators for the study.

A self-designed research instrument tagged: Performance Management Indices and Schools Entrepreneurial Business Questionnaire (PMISEBQ) was used for data collection. Reliability coefficients of 0.78 was obtained from pilot study. Demographic data collected were analysed using descriptive statistics while the two hypotheses were tested using inferential statistics of multiple regression analysis at 0.05 level of significance.

Results

Descriptive Analysis of Demographic Data

The respondents were mainly managers and proprietors of secondary schools in Southwestern Nigeria. There were 360 men and 140 women, giving a total of 500 respondents (see table 4.1, below). Being a school business, there are few women in management positions in secondary schools business in Southwestern Nigeria due to nature and practices in the business that have tended to exclude women from such career.

The respondents' age varies. The age range with highest frequency is 36-45 years, 251 of 50.2% while 56 and above years is the lowest with 51 of 10.2%.



The years of experience of respondents as shown in Table 1, 292 staff years of experience fall within 1-10years which represents 58.4% while 15(3%) staff fall within 31-40years of experience which is the lowest.

Table 1: Participants demographic distribution

Participants Gender Distribution		
Sex	Frequency	Percentage
Male	360	72
Female	140	28
Total	500	100
Respondent Age		
	Frequency	Percent
18-35yrs	62	12.4
36-45yrs	251	50.2
46-55yrs	136	27.2
56 and above	51	10.2
Total	500	100
The number of years worked in the organization		
	Frequency	Percent
1-10years	292	58.4
11-20years	102	20.4
21-30years	91	18.2
31-40years	15	3.0
Total	500	100

Hypotheses

H₀₁: Performance Management variables have no significant relative influence on secondary schools entrepreneurial business in Southwestern Nigeria.



Table 2: Relative contributions of Employee Conducts, Regularity or Punctuality, Employee Quality of Graduate Produced, Quantity of Graduate Produced and Organizational Objective or Vision Achievement to School Entrepreneurial Business

	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta (β)		
(Constant)	-25.74	4.25		-6.05	0.00
Employee Conducts	0.32	0.05	0.27	7.00	0.00
Regularity	0.07	0.05	0.06	1.54	0.13
Quality of Graduate Produced	0.58	0.04	0.50	13.47	0.00
Quantity of Graduate Produced	0.46	0.04	0.42	10.32	0.00
Organizational Objective	0.31	0.05	0.26	6.00	0.00

Table 2 reveals the relative contributions of employee conducts, Regularity or punctuality, employee Quality of graduate produced, Quantity of graduate produced and Organizational objective or vision achievement in Southwestern Nigeria. The results showed that the contributions of employee conducts ($\beta=0.27$, $p<0.05$), Quality of graduate produced ($\beta=0.50$, $p<0.05$), Quantity of graduate produced ($\beta=0.42$, $p<0.05$) and Organizational Objective ($\beta=0.26$, $p<0.05$) to secondary schools entrepreneurial business were significant while that of regularity or punctuality ($\beta=0.06$, $p>0.05$) was not. The standardised coefficient values indicate that the contributions of employee conducts, Regularity or punctuality, employee Quality of graduate produced, Quantity of graduate produced and Organizational objective or vision achievement to secondary schools entrepreneurial business were 27%, 6%, 50%, 42% and 26% respectively. Accordingly, all the Hypotheses are rejected while Hypothesis 1(b) is accepted.

H0₂: Performance Management variables have no significant joint influence on secondary schools entrepreneurial business in Southwestern Nigeria.



Table 3: Multiple Regression analysis of Performance Management variables on secondary schools entrepreneurial business

Sources of Variance	Sum of Squares	Df	Mean Square	F	Sig.
Regression	14752.41	5	4917.48	94.88	0.00
Residual	25139.15	495	51.83		
Total	39891.55	500			

R = 0.63
R Square = 0.39
Adjusted R Square = 0.39
Std. Error of the Estimate = 7.20

a. Dependent Variable: Schools Entrepreneurial Business

b. Predictors: (Constant), Employee conducts, Regularity or punctuality, employee Quality of graduate produced, Quantity of graduate produced, Organizational objective or vision achievement

The results presented in Table 3 showed that when all the predictor variables were entered into the regression model at once, they significantly predicted schools entrepreneurial business among in Southwestern Nigeria ($F_{(5, 495)}=94.88$, Adjusted $R^2=0.39$, $p<0.05$). As such, it can be inferred that employee conducts, Regularity or punctuality, employee Quality of graduate produced, Quantity of graduate produced and Organizational objective or vision achievement, when taken together, explain about 39% of the variance in the schools entrepreneurial business among secondary schools owners in the study area. The null hypothesis is therefore rejected.

Summary

The study assessed the influence of performance management on school entrepreneurial business in Southwestern Nigeria. The purpose was to ascertain the gaps that exist in the literature together with the view to add to knowledge of the construct of performance management and school entrepreneurial business. It was on the basis of these that the study explored the application of performance management indices to school entrepreneurial business within the scope of the study. In addition, the influences of the most common performance management indices including the relationship among these indicators in relation to school entrepreneurial business were also investigated. However, some managerial suggestions on how performance



management could be enhanced in the course of running school entrepreneurial business through an effective practice and appropriation of performance appraisal system were not left out.

In terms of testing the stated hypotheses, the outcome of the analysis shows that the performance management variables have no significant relative influence on school entrepreneurial business in Southwestern Nigeria. On the other hand, performance management variables have significant joint influence on school entrepreneurial business in Southwestern Nigeria.

Conclusion

The urge to attain and maintain high level of performance management in school business is a *sine qua non* for the business to grow. The ethical consideration in employees and employee management relationship is associated to the business's development. For high performance management, it is essential that employers of labour observe ethical conducts in their interacting with one another. There must be need for an openly displayed attitude by having positive attitudes/behaviour, committed teamwork on the business with very high-level integrity and self-discipline.

Although a few scholars in performance management feel otherwise in terms of view, many including researchers have observed that when pursued performance management in relation to entrepreneurship the variables tested in the study serve as indices towards business development. It implies that employees concerted efforts must be made to ensure and observe etiquette and ethical conducts within work centres for the expected objective and business goal. Conclusion could be made that the absence of etiquette in work places has created in school business among Nigerian worker shows the attitude that hinders productivity.

In the study, it shows that there are individual differences among employees and in terms of their contribution to the school business. Since, the influences of the most common performance management indices including the relationship among staff as indicators as a measure of performance, it implies that school entrepreneurial business contribute to the improvement of the economy of the State and the country at large. Employers should cultivate the habit of allowing members of staff to make organisational contributions towards moving the school business forward.

Since the study shows that most of the respondents were with the view that employees reinforcing information that help them understand better the expected principles, there is need for the business management to appraise staff that distinguished themselves at work. Also, it shows that the standards of behaviour of employees influence employees.



Recommendations

The following recommendations have been objectively deduced from the findings on the data collected from the field.

1. The management of any school business organisation should have it as a duty to find out reasons behind flaws in employee and management performance, hence the need for participation and inclusiveness in decision making-process.
2. The school business management members should avoid factors that could cause low performance such as absenteeism, poor public relations, inefficiency as these factors could retard the growth of an organization
3. Performance appraisal needs to be constantly done on regular basis that helps to instill standardized duties consciously staff of personnel services at any school business.
4. School management should always sponsor interested employees teaching and non-teaching staff who have interest in having additional knowledge.
5. Staff performing below expectation should undergo in-services training exercise to improve the productivity of the business.
6. The school manager should be fully knowledgeable about the appropriation of performance management indices in the routine job in school entrepreneurial business to boost the performance of the business.
7. Every employee must be encouraged and motivated to have a high work commitment to work and be punctual in their work place

Knowledge Contribution

In theoretical implications terms, this study advances the literature on school entrepreneurial business in relation to performance management variables, most especially the relatively thin work on school entrepreneurial business in Southwestern Nigeria. The impact that performance management have on school entrepreneurial business in the context of developing school business in Southwestern Nigeria remains unclear. Specifically, the research discuss the significant performance management variables employees must adhere to or possess to make the school entrepreneurial business effective or result to better organisational performance.

Operationally, performance management is a construct which was considered in multiple dimensions and this eventually provides basis to ascertain and boost school entrepreneurial business. This is very germane in view of the fact that performance management variables may be associated with school entrepreneurial business effectiveness (Lumpkin and Dess, 2001). By integrating performance management



variables literature with school entrepreneurial business literature. This is believed that such kind of an integration will eventually aid the future research design in these two areas by stressing the common development stages of thought that bring about these scholarship streams (Vecchio, 2003).

The results of this research are important in determining the propensity for particular school entrepreneurial business. The findings revealed that managers of some school entrepreneurial businesses in Southwestern Nigeria possessed some knowledge of appropriating performance management variables.

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CHAPTER 43

PEDAGOGICAL STYLES IN BIOLOGY EDUCATION: THE NEED FOR A PARADIGM SHIFT TO REFLECTIVE TEACHING FOR EFFECTIVE INSTRUCTION IN SECONDARY SCHOOLS

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Abstract

The relevance of Biology education as a pivot for development is no longer in doubt. The teaching of biology in Nigerian secondary schools today is bedeviled with enormous problems such as the use of poor pedagogical strategies which do not fully and effectively engage students in cognitive tasks. The resultant effect of this is expressed in poor learning outcomes, most especially, in poor achievement of students recorded in external examinations like the Senior School Certificate Examinations (SSCE) in Biology. The persistent poor academic achievement of students in the subject has continued to draw the attention of major stakeholders in education to the need for more effective pedagogy for improving students learning. It is on this basis that this paper is advocating for a shift from weak pedagogical strategies such as the conventional lecture method to more cogitating pedagogical strategies, such as Reflective teaching for effective instruction in Biology. Reflective teaching is an approach that involves the teacher looking back at his/her teaching practices to find ways these can be improved or changed to provide better learning experiences for learners. This paper provides insights on what reflection is, the concept of reflective teaching, what qualities make a reflective teacher, and the relevance of reflective teaching in Biology education. It will further discuss strategies for promoting reflective teaching.

Reflective teaching is capable of impacting Biology instructions by producing considerably high level learning as it affords both the teacher and the students' opportunities to revisit teaching and learning experiences, analyse them, ponder over them and evaluate them. The paper is of significance to students, teachers, as well as educational stakeholders as it reveals the



potentials of reflective teaching to enable student-centered learning, bring about students' self-awareness, help in building students confidence and patience in working with real-world problems. All these will lead to better teaching of biology and an improvement in students' learning outcomes. Reflective teaching is therefore recommended for effective teaching and learning of Biology in schools.

Keyword: *Reflective teaching, Pedagogical strategies, Effective instructions, Academic achievement*

Introduction

The 21st century is an era characterized by an increasingly sharp progress in the field of Science and Technology. Hence, there is a need for a quality science and technology education in schools. Science is a systematized body of knowledge which is a tentative, dynamic, and empirically verifiable process. Lederman and Lederman (2014) observed that science is a dynamic, on-going activity, rather than a static accumulation of information. Jimbo (2018) defines science education as that aspect of education that leads to the acquisition of practical and applied skills, as well as basic scientific knowledge. In Nigeria, science education is taught in school subjects such as Chemistry, Biology and Physics at the senior secondary school level. Biology is defined as a natural science, which is related with the study of life beings including their evolution, morphology, physiology, maturation, taxonomy and distribution. According to the FME (2014), the following are the objectives of Biology education: acquisition of necessary scientific skills; relevant knowledge needed for future advanced studies in biological science; acquisition of scientific attitude for problem solving and ability to apply biological principles in everyday life among others. Biology lays foundation for important disciplines such as Embryology, Molecular Biology, Oncology, Veterinary medicine, Genetics, amongst several other disciplines. Without an adequate knowledge of biology, it would be almost impossible attempting to improve on the ever growing fields of genetic engineering, agriculture, medicine, and the diverse life forms on earth. Hence, it is mandatory that students intending to study some of these courses obtain a good grade in Biology at the Senior Secondary School Certificate Examination. In spite of the relevance and the unique position of Biology, there has been ineffectiveness in the teaching and learning of the subject, which in turn is affecting learning outcomes, especially the annual academic achievement of students in Biology at the Senior Secondary School Certificate Examination. Several factors have been identified to be responsible for the ineffective teaching and learning of Biology, and the most notable of them all is the use of poor pedagogical strategies which do not fully and effectively engage students in cognitive tasks (Paul and Tendeukai, 2015). This situation has continued to draw the attention



of major stakeholders in education to the need for more effective pedagogy such as Reflective teaching for improving students learning, hence this study.

Reflection

Reflection is a transformational and cognitive process that gives meanings to experiences by linking up past and present experiences which are consequently transformed into practices that are applied in the future (Fines, 2014). He further explained that reflection is an essential part of human activity where an individual recaptures his or her previous experiences; meditate on them and subsequently evaluate the recaptured experiences. Delvin, Kift, and Nelson (2012) stated that reflection is like a mirror; it is a replica of what appears before it. However, in professional practice, reflection does not give us back what it is, but an improvement on the original. Omorogbe and Ewansiha (2013) defined Reflection as a process which requires playing back an experience, carefully and persistently pondering over it in order to draw out conclusions aimed at developing a guide for improving future experiences. From the definitions of reflection given above, it can comfortably be said that reflection is not just thinking hard about a previous experience, but thinking for improvement. From a more technical perspective, reflection in teaching occur when the teacher devotes time to think about what they do during the teaching processes, the rationale for doing so, and the consequences of their teaching on students' learning outcomes. Reflection in teaching demands that the entire processes of teaching and the motives behind each of the teaching processes be scrutinized, in order to actively pursue ways of improving teaching (Race, 2002).

Tushar, Lokanath and Abha (2019) described reflection as a cognitive process that can operate at four levels:

1. Factual reflection (a reflection that focuses on routines and procedures of classroom teaching);
2. Procedural reflection (a reflection that is centered on the evaluation of the objectives of teaching);
3. Justificatory reflection (a reflection that deals with the rationales for education); and
4. Critical reflection (a reflection that examines education as it impacts social justice and the professional development of the pre-service teachers).

On the other hand, when a student reflects, it causes them to make meaning out of what they have learnt, why they learnt it, and how the learning took place. This is done by linking new learning experiences to a broader perspective for an improved learning (Race, 2002). He further stressed that reflection is an essential element of



teaching and learning as it involves dialogues between students and their teachers, students and their peers, all of whom are capable of providing useful feedbacks necessary for an improved learning.

Concept of Reflective Teaching

Reflective teaching is an offshoot of John Dewey's (1998) concept of Reflective inquiry, where he viewed the students as inquirers and active participants during learning. Dewey maintained that reflection is an essential aspect of learning from experiences. Hibajene (2019) defines reflective teaching as a process whereby educators regularly self-examine and evaluate their teaching experiences in order to improve their professional practices. Reflective thinking drives teachers to act deliberately and intentionally rather than randomly and reactively. Tushar, Lokanath and Abha (2019) stated that different criteria may be considered by teachers when reflecting, as the main aim is to achieve improved teaching and learning experiences. He stated further that reflective teaching technically involves the teachers focusing on how they can apply their knowledge to achieve a given set of objectives. According to Manen (1977), there are three different levels of reflections which reflective teaching can take:

1. The first level of reflective teaching focuses on technical means to achieve a stated teaching objective.
2. The second level focuses on the process of analyzing meanings, assumptions, and perceptions underlying practical actions.
3. The third level which is the highest level incorporates critical questions related to moral, ethical and political aspects of teaching and schooling.

Zeichner and Liston (1987) suggested that a teacher can adopt any of Van Manen's levels of reflections during reflective teaching. He emphasized that when a teacher adopts Van Manen's first level of reflection, the reflective teaching style follows educational standards, which demands that teachers consider how the contexts in which their approach influences teaching and learning processes as well as the values of educational objectives. He goes ahead to explain that when teachers adopt the Van Manen's second level of reflection for a reflective teaching, the teachers recapture all the teaching experiences that played out during the teaching and learning processes. This guides the teachers in analyzing meanings, assumptions, and perceptions underlying practical actions with the aim of improving teaching experiences and for professional development. Lastly, he explained that when a teacher adopts Van Manen's third level of reflection for a reflective teaching, the teacher focuses on the moral and ethical aspects of his teaching and also education. Zeichner and Liston (2014) concluded that for a reflective teaching to be so called;



educational objectives, teaching experiences and ethical values of education should be components of reflection for improved teaching and learning experiences.

Reflective teaching goes beyond just a thoughtful and intense instruction. It is a teaching style that problematizes teaching experiences as well as professional performances so that they can become potential learning situations where teachers can learn from, grow and develop themselves for improved teaching experiences which are reflected on desirable students' learning outcomes (Jarvis, 1992). According to Hinett (2002), reflective teaching demands that teachers elicit and identify their personal theories, explore these theories by examining and analyzing their rationale, comparing the result of their analysis with peers and with public theories before attempting to re-formulate the theory and testing it against further practice. Hinett (2002) stressed further, that reflective teaching is a realistic and attainable way of promoting effective teaching and student learning while developing the types of knowledge, skills, and abilities that are expected from students. This is because through reflection, both teachers and students gain the flexibility and creativity they need to continue to be lifelong learners.

The Reflective Teacher

A reflective teacher is one who asks questions and searches for ideas he or she can adopt to help students under his or her tutelage to succeed. The reflective teacher creates time to think about teaching activities and make new plans with the aim of improving the teaching and learning experiences for effective instruction and improved students' learning outcomes. According Orlich, Harder, Callahan, Trevisan and Brown (2010), the following are characteristics of a reflective teacher:

1. They understand the social context of schooling and become strategic with their style of teaching.
2. They know content matters and also express concerns for the educational progress of their students.
3. They show great skill in identifying problems and constructing workable plans to overcome identified problems.
4. The Reflective teacher is one who is always prospective and retrospective in his thinking. He resolves complex issues by using problem-solving strategies

A reflective teacher strives to get informed about how students respond to lessons as well as several critical abilities and attitudes. Gaining insight into the effectiveness of teaching is best accompanied by continuous monitoring of students' learning outcomes through formative assessment and also by questioning their assumptions about the teaching and learning processes. According to Eggen and



Kauchak (2004), teachers can learn to become reflective by continually asking themselves guiding questions as they teach. Some of these questions are:

- Did I have a clear objective for the lesson? What was the specific objective?
- Was the objective relevant? How do I ascertain the relevance of the objective?
- Was the learning activity consistent with the teaching objective?
- What examples would have made the teaching more understandable to the students?
- What could I have done to make the lesson more interesting and meaningful to the students?
- How do I determine whether or not the students understood what I taught? What would be a better way to figure this out?
- Above all, what can I do differently to improve the lesson the next time I teach?

According to Distad and Brownstein (2004) a reflective teacher is one who is rational, deliberate and organized. Reflective teachers examine their teaching to make sure that learning fulfills the academic requirements of all students. The reflective teacher does this by technically making the necessary adjustments in their instruction so that all students have equal opportunity to succeed (Killen, 1995). Reflective teachers think critically about all their teaching practices and they believe that whatever happens in their classrooms during the teaching and learning processes should be scrutinized and if necessary, changed in order to improve the teaching and learning experiences. Being a reflective teacher does not mean that the teacher is limited to reflecting only on teaching and learning processes, but that all aspects of teaching, including the teacher's attitudes, beliefs, behaviors, and perceptions, should be open to review.

Relevance of Reflective Teaching in Biology Education

Teachers and students benefit from reflective teaching in a variety of ways. Perhaps the most promising aspect of using reflective teaching in biology education is its potential for enhancing effective instruction, students' acquisition of biology knowledge and the basic scientific skills as it provides students with opportunities for firsthand experiences in real-world applications of biology knowledge and skills acquired. This goes a long way in positively impacting students' perception towards biology and improving students learning outcomes, most especially in improved academic achievement in biology, as the teaching style provides them the opportunity to learn meaningfully. Since reflective teaching allows teachers and students to analyze the teaching and learning activities, students are able to attain a considerable



level of self-awareness which may consequently result in building confidence in applying biological knowledge to resolve real world problems. When a biology teacher becomes a reflective teacher, the process of reflection opens up a path of self-awareness that promotes and supports growing in the teaching profession to become a goal oriented, and an effective instructor. Reflective teaching brings about changes in personal belief systems and world views; particularly, reflective teaching helps the biology teacher to identify borders that exist between the students' world view and the school science culture and consequently guide them in crossing these borders in order to achieve improved teaching and learning experiences, for an effective instruction. Teaching biology, most especially, abstract topics in our Nigerian schools can be quite challenging. A reflective teacher would problematize this situation, analyze it, seek out possible solutions to it, and analyze the possible solution with the greatest potential to fulfill the teaching and learning objectives.

Other relevancies of reflective teaching in biology education are:

1. Enhanced teacher-student relationship
2. Biology lessons are made more lively and interesting
3. Enhanced problem solving
4. Classroom democracy
5. Improved students' learning outcomes in biology
6. Improved students' classroom engagement.

Strategies for Promoting Reflective Teaching

There are various strategies that can be employed to promote reflective teaching. Literatures have revealed that the most widely employed and cited strategies for promoting reflective teaching are:

1. Reflective video analysis
2. The reflective diaries
3. Peer collaboration or discussions
4. Peer coaching
5. Peer observation
6. Student evaluation of teaching and learning.

For convenience, this paper would focus on three strategies for promoting reflective teaching namely; reflective video analysis, reflective diaries, and reflective peer collaborations.



1. Reflective Videos Analysis

Reflective Video Analysis is a profitable strategy that aids reflective teaching for the sake of enhancing teaching and learning activities. Videos are considered to be an effective and objective strategy that aids reflecting teaching as it brings to life previous teaching and learning experiences as they truly were, because videos are mirrors to one's own teaching since they reveal what really happens in the classroom (Sayın, 2013). Reflective video analysis is defined as a way for teachers to record their own teaching and learning activities for them to watch and reflect on their teaching performances with the aim of improving their teaching and learning experiences. Research has shown that video is a powerful way of improving reflective teaching as it enables the teacher to become more conscious of their own teaching. According to Savas (2012), videos help teachers to objectively critique their own teaching in details, reflect on the critique in order to enhance their awareness about their teaching styles. Videos offer teachers the opportunity to comprehend the link that exists between theories and practices by allowing the teachers to replay videos, pause some parts for a brief reflection, or view actions frame by frame in order to analyze previous teaching and learning activities, whether or not, they are actually theories in practice (Dymond and Bentz, 2006). Furthermore, videos allow teachers to keep records of their teaching and learning activities in order to analyze their actual performances, evaluate them and also track their own progress (Chan, 2010). This way, teachers have a great chance to review, analyze, and deeply reflect upon their teaching experiences. With the help of this analysis and evaluation through videos, teachers can identify their problematic areas, strengths, and weaknesses in their teaching performances and consequently improve on them with the aim of achieving effective instructions for improved teaching and learning experiences.

2. Reflective Diaries

A reflective diary also called a reflective journal is defined as a notebook dedicated to recording thoughts, reactions to teaching and learning experiences, and conclusions about teaching and learning activities (Hiemstra, 2001). According to Gallego (2014), a reflective diary is a record for raising awareness aimed at improving the practices of reflective teachers as well as advancing their professional development. Silvia, Valerio and Lorenza (2013) concluded in their study that reflective diary is a major strategy for promoting reflective teaching as they considered diaries an effective tool for reflecting over teaching experiences at any time, given that the diaries concretize teaching and learning experiences that were previously recorded in them. Related literatures have shown that reflective diaries are beneficial in promoting reflective teaching. For instance, Lee (2007) claims that reflective diaries do not only record past teaching experiences for reflection, but it affords the teacher the opportunity to discuss their concerns, problems and their opinions about certain teaching and learning experiences. He further explained that when this is done, the teacher is able



to provide a solution that strengthens some of the weaknesses recorded from past teaching experiences, with the aim of improving the teaching and learning activities for improved students' learning outcomes.

3. Reflective Peer Collaboration

Reflective peer collaboration is a known strategy for improving reflective teaching. Reflective peer session is defined as a strategy for reflective teaching that involves different teachers working and discussing together, their individual teaching experiences with the intension of learning from one another and producing practicable ideas to improve their teaching experiences (Johnson, 2003). Communication during peer collaboration is an integral part of this strategy. Reflective peer collaboration centers on teachers sharing critical teaching incidents from their classes with a peer, discussing the events and memories in detail, making reflections together, benefiting from each other's opinions and suggestions, and thinking over the implications for further practices (Zeichner and Liston, 2014). Reflective peer collaboration helps teachers to explore ideas about teaching and learning, it enables them reflect upon past teaching experiences, and accordingly improves the teaching and learning activities for improved learning outcomes in students (Britton and Anderson, 2010). Through reflective peer collaborations, teachers are opportuned to become more conscious of their beliefs and assumptions and investigate the reasons for their assumptions. Reflective peer collaboration allows for critical reflection on classroom problems, figuring out new ideas and solutions, devising new styles for effective instruction, providing fresh viewpoints, reviewing each other's actions, and stimulating the professional growth of the teachers, which are all geared towards promoting reflective teaching for effective instruction and for improved learning outcomes in students (Johnson, 2003).

Conclusion

The necessity for a reflective teaching arises from the enormous problems associated with the teaching and learning of biology in Nigerian secondary schools. Considering the enormous importance of reflective practices in teachers, this paper is aimed at advocating for an effective instruction in biology. To this effect, the paper discussed reflective teaching as a cognitively engaging instructional strategy capable of driving an effective instruction in biology. The paper indicated what reflection and reflective teaching means. It further explained the qualities that make a reflective teacher, the relevance of reflective teaching for biology instruction as well as the strategies for promoting reflective teaching. Highlights from the paper have shown that reflective teaching drives effective instruction through improved teaching and learning experiences. As a consequence, students' learning outcomes are also greatly improved



and teachers progress professionally as they become enabled to carry out effective instructions.

Recommendations

1. Teachers should endeavor to always engage in reflective practices, not just for personal assessment, but for strengthening identified weaknesses in teaching experiences to enhance an effective instruction.
2. Educators well as educational stakeholders should be trained on the relevance of reflective practices in education.

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CHAPTER 44

PSYCHOLOGICAL CAPITAL AS DETERMINANTS OF PSYCHO-SOCIAL ADJUSTMENT OF INMATES IN CORRECTIONAL CENTRES IN NASARAWA STATE, NIGERIA

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Abstract

Adjustment is a basic pre-requisite for healthy and successful living and becomes more demanding when one is in certain heinous conditions, such as correctional centre or incarceration. Incarceration is one experience that often brings about certain difficulties and pains. Although, correctional centres are meant to keep convicted offenders, in Nigeria the numbers of awaiting trial inmates are far more than the convicted inmates. Notwithstanding the status, correctional centre experience in Nigeria is very inhuman and has attracted attention of many stakeholders to the need to making the correctional centre conditions a bit comfortable as the essence of correctional centre should not be for punishment but for rehabilitation. It is against this background that this study examined psychological capital (hope, optimism, efficacy and resilience) as determinants of psycho-social adjustment of inmates in correctional centres in Nasarawa State, Nigeria. To give direction, four hypotheses were postulated for the study. The research design adopted for the study was a correlational survey research type. The population of the study consisted of 1412 inmates in the three correctional centres in Nasarawa State. The sample comprised 200 inmates randomly selected from the correctional centres based on scholarly estimation as provided by Research Advisor (2006). Two research instruments used for that collection



were *Psycho-Social Adjustment Scale* developed by Zamble and Porporino (1988) and the *Psychological Capital Scale* adapted from *Psychological Capital Questionnaire* by Luthans, Youssef and Avolio (2007). Data collected were analysed with linear regression. The results of data analyses revealed that there was a significant influence of hope, optimism, efficacy and resilience on the determination of psycho-social adjustment of inmates in Nasarawa correctional centres. Based on these findings, it was recommended among others that training on development of different dimensions of psychological capital into the training module and programmes for correctional centre inmates. Such training will make them imbibe the valuable and essential attributes that will assist them in adjusting positively to the experience of preconisation.

Keywords: *Psychological Capital, Psychosocial Adjustment, Inmates and Correctional Centres*

Introduction

In every society, authorities always set guidelines of conduct that is expected of every member of such a society. Such codes of conducts are contained in their books of law, in which a defiance or violation of such codes could bring dire penalties consequences. This informs why there are laid down trial procedure, as well as secluded area of the society where offenders can be incarcerated for a while. Specifically, correctional centres are such a place where offenders (often called inmates) are kept for the period of jail term. Correctional centre is primarily not established for punishment, but for deterrence, rehabilitation and integration to “normal” behaviours expected of every member of the society. The penal system is expected to help meet basic needs of the inmates for the period of jail term.

Meanwhile, serving a jail term or living in correctional centre is a unique disturbing experience in the life of a person such that each inmate is expected to adjust positively to the lives and demands of their new nomenclature. Incarceration represents a form of traumatic experience severe enough to produce post-traumatic stress reactions (Rokach, 2017), and inmates need to cope with several stressful situations in the correctional centre. In addition, an inmate needs to achieve positive psycho-social adjustment in order to be properly rehabilitated and achieve general wellbeing, as well as achieving better integration after the jail term. According to Haney (2022), the adaptation to imprisonment is almost always difficult and, at times, creates habits of thinking and acting that can be dysfunctional in periods of post-correctional centre adjustment. Yet, the psychological effects of incarceration vary from individual to individual and are often reversible.

Correctional centre adjustment, sometimes called “correctional preconisation” when it occurs in correctional settings, it is the shorthand expression for the negative



psychological effects of preconsolidation (Haney, 2022). Adams (2022) opined that inmate adjustment problems are important on several counts to people who believe that correctional centres should perform correctional or rehabilitative functions. He emphasized that when inmates experience continued states of emotional crisis, it is difficult to work toward long-range behavioral change. The process has been studied extensively by sociologists, psychologists, psychiatrists, and others, and involves a unique set of psychological adaptations that often occur—in varying degrees—in response to the extraordinary demands of correctional centre life. In general terms, the process of preconsolidation involves the incorporation of the norms of correctional centre life into one's habits of thinking, feeling, and acting (Haney, 2022). It is important to emphasize that these are the natural and normal adaptations made by prisoners in response to the unnatural and abnormal conditions of prisoner's life. The dysfunctionality of these adaptations is not “pathological” in nature (even though, in practical terms, they may be destructive in effect). They are “normal” reactions to a set of pathological conditions that become problematic when they are taken to extreme lengths, or become chronic and deeply internalized (so that, even though the conditions of one's life have changed, many of the once-functional but now counterproductive patterns remain).

Like all processes of gradual change, of course, this one typically occurs in stages and, all other things being equal, the longer someone is incarcerated the more significant the nature of the institutional transformation. When most being forced to adapt to an often harsh and rigid institutional routine, deprived of privacy and liberty, and subjected to a diminished, stigmatized status and extremely sparse material conditions is stressful, unpleasant, and difficult. However, in the course of becoming institutionalized, a transformation begins. Persons gradually become more accustomed to the restrictions that institutional life imposes. The various psychological mechanisms that must be employed to adjust (and, in some harsh and dangerous correctional environments, to survive) become increasingly “natural,” second nature, and, to a degree, internalized. To be sure, the process of institutionalization can be subtle and difficult to discern as it occurs. Thus, inmates do not “choose” do succumb to it or not, and few people who have become institutionalized are aware that it has happened to them. Fewer still consciously decide that they are going to willingly allow the transformation to occur.

The problem of psychological maladjustment becomes worse and more pronounced especially when the correctional centre system that is poorly managed and maintained. And most people agree that the more extreme, harsh, dangerous, or otherwise psychologically-taxing the nature of the confinement, the greater the number of people who will suffer and the deeper the damage that they will incur (Bonta & Gendreau, 2020). According to incarcerated inmates in Nigerian correctional centres live in terrible conditions (Agbakwuru and Awujo, 2016), and this is because Onagoruwa (2021) opined that Nigerian correctional centres are glorified



animal cages and that people sent there get a foretaste of hell as it were. According to him, the overall picture of Nigerian correctional centre and the inmates is one of unredeemed gloom, hopelessness and a repulsive cauldron of human squalor and degradation.

Moreover, the empirical consensus on the most negative effects of incarceration is that most people who have done time in the best-run correctional centres return to the free world with little or no permanent, clinically-diagnosable psychological disorders as a result (Haney, 2015). Correctional centres do not, in general, make people “crazy.” However, even researchers who are openly skeptical about whether the pains of imprisonment generally translate into psychological harm concede that, for at least some people, correctional centre can produce negative, long-lasting change (Bonta and Gendreau, 2020).

Scholars (Uzoeshi, 2014; Picken, 2012; Adebajo, 2015 and Melgosa, 2021) have identified many factors that could make adjustment of correctional centre inmates difficult to include overcrowding, poor sanitation (inadequate toilet facilities, toiletries and water supply), inadequate finance, food, medicines, denial of contact with families and friends, loss of freedom, fear of not knowing what will become of their loved ones, fear of survival, stigma of being labelled ex-convicts, excess noise, isolation, sexual intimidation, inadequate facilities, dilapidated infrastructure, dearth of materials for training inmates in various trades, lack of manpower as well as over regimented life to the extent that there is strict control in virtually all activities of the inmates as some of the problems of Nigerian correctional centre and its inmates. Another problem ravaging Nigeria correctional centre is congestion, as a result of high number of awaiting trial inmates. According to a report by Amnesty International (2012), more than three of every five correctional centre inmates in Nigeria have not been convicted of any offence; instead, they wait years for their trial in appalling conditions. Therefore, the survival of incarcerated inmates of Nigerian correctional centres under these dehumanizing and degrading conditions greatly depend on their abilities to cope with the challenges of life in incarceration (Agbakwuru and Awujo, 2016); and thereby adopting or developing effective coping strategy or attributes by incarcerated inmates of correctional centre is key to survival. Besides, scholarly attempts in the area of imbuing positive attributes that could be of help to correctional centre inmates in coping with the correctional centre challenges have not been well-explored in Nigeria. However, Agbakwuru and Awujo (2016); Colman (2013); Weiten, Dunn and Hammer (2011) have all suggested that there is the need to identify psychological constructs that can help facilitate positive psycho-social adjustment of correctional centre inmates. In this regard, this study intends therefore to examine how psychological construct, a four-component construct, could be responsible for psycho-social adjustment of correctional centre inmates in Nigeria.

The psychological capital, also called PsyCap, is defined as an individual’s positive psychological state of development characterized by a combination of four



positive psychological resources (Luthans, Youssef and Avolio, 2017). Psychological Capital or simply PsyCap refers to individual's positive psychological state of development characterized by hope, optimism, resiliency and self-efficacy (Luthans, Youssef and Avolio, 2017). PsyCap represents how hopeful, resilient, confident and optimistic an individual is. Psychological capital, or simply Psychological capital, has been conceptually identified by scholars (such as Luthans, 2012; Luthans and Youssef, 2014; Luthans, Youssef and Avolio, 2017) as consisting of the four positive psychological resources of hope, optimism, efficacy, and resilience, which, when combined, have been empirically determined to be a second-order core construct (Luthans, Avolio, Avey and Norman, 2017). A second-order construct is the shared variance between the four first-order constructs (hope, optimism, efficacy, and resilience).

According to Newman, Ucbasaran, Zhu and Hirst (2014), self-efficacy refers to the confidence of the individual in his own ability to progress his cognitive resources, motivation and courses of action in order to perform the given task within a specific context as well as possible. Self-efficacy has been defined as "an individual's conviction (or confidence) about his or her abilities to mobilize the motivation, cognitive resources, and courses of action needed to successfully execute a specific task within a given context" (Stajkovic and Luthans, 2018b). This deals with self-efficacy with respect to a specific task. Performing a task with efficacy does not mean the person would perform other tasks with the same efficacy. Only task specific efficacy is state-like. Whereas general efficacy is trait-like is stable over time and across situations. Self-efficacy has been found useful in addressing difficult challenges and control outcomes, overriding several impediments to success and guiding to higher levels of motivation, action and performance (Bandura, 2012). Abbas Raja, Darr and Bouckenoghe (2013) found that individuals high in self-efficacy are less likely to expect failures when they are facing challenges, difficulties and uncertainties; hence such individuals derive more satisfaction from job and perform optimally.

The component optimism refers to the individual's expectancy of positive results (Newman Ucbasaran, Zhu and Hirst, 2014) and provides a more positive outlook on stressful situations (Rego, Sousa, Marques and Cunha, 2012). Seligman (2018a) defines optimism as an attributional style that explains positive events in terms of personal, permanent, and pervasive causes and negative events in terms of external, temporary, and situation-specific ones. Sridevi and Srinivasan (2012) exposed that there are two forms of optimism; and these are: realistic optimism and dispositional optimism. Dispositional optimism is all about the positive expectancy that an individual has based on their natural traits and personality. Realistic optimism refers to realistic appraisal of the situation at hand, an understanding of what can be done with the resources available at that point in time. Hence it can vary across situations and therefore state-like (Peterson, 2010). An optimistic person tends to be



oriented toward evaluation of past and most recent events (Avey, Luthans, Smith and Palmer, 2010), practicing positive emotions and increasing the levels of motivation to manage challenges, looking for creative ways to solve it and taking advantage from these opportunities (Luthans, Avolio, Avey and Norman 2017; Tibbs Green, Wheeler and Carmody-Bubb, 2015). In addition, Schulman (2019) proved that optimism results in increased motivation, greater sales productivity and better physical health.

Hope is defined as “a positive motivational state that is based on an interactively derived sense of successful (1) agency (goal directed energy) and (2) pathways (planning to meet goals)” (Snyder, Irving and Anderson, 2021). Hope is characterized as the capacity to identify, simplify and pursue the way to success. Hope consists of goal, agency and pathways. That is the agency or the “willpower” component of hope is the one that provides the determination to achieve goals, whereas the pathways or “waypower” component helps in coming up with alternate ways in achieving the goals set. It is this duality of willpower and waypower that sets it apart from other positivity constructs such as optimism and efficacy (Luthans, 2022b). While the agency component refers to an individual’s motivation to accomplish the desired effect within a specific context, the pathways include the identification of goals and the establishment of alternative ways to reach them in order to guarantee that task will be accomplished (Youssef and Luthans, 2017). Hopeful individuals tend to be recognized as risk-takers persons and they are really determined in pursuing goals in order to find the best way to implement and to reach their aims (Tibbs, Green, Wheeler and Carmody-Bubb, 2015). Luthans, Avolio, Avey, and Norman (2017) highlighted the study of Adams (2002) as cited by Barbosa (2017) that was based in a survey that concluded individuals with high level of hope tend to be more successful. Besides, Snyder (2021) provides evidence that hope is developable and can be effectively measured. This point to the fact that hope is learnt but not necessarily a hereditary trait.

The Latin roots of resilience, *salire* means “to jump” and *resilere*” means “to spring back” offer a stricter definition to guide research (Meredith, Sherbourne, Gaillot, Hansell, Ritschard, Parker and Wrenn, 2011). Meredith, *et al.*, (2011) defined resilience as the capacity to adapt successfully in the presence of risk and adversity. Resilience refers to the ability to rebound or bounce back from adversity, uncertainty, conflict, risk, failure or even positive events like progress or an increase of responsibility (Avey, Luthans and Youssef, 2018). According to Masten and Reed (2012), resilience is a positive reaction or adaptation process in situations of adversity. According to González-Torres and Artuch (2014), empirical research establishes three critical conditions in the conceptualization of resilience: (a) growing up in, or finding oneself in an adverse situation (always subjective); (b) the availability of protective factors (internal and external), and (c) managing to adapt positively despite the experience of adversity. Luthans, Avolio, Avey, and Norman (2017) and Youssef and Luthans, (2017) discovered that because each time they bounce back from a previous



setback they are producing higher levels of resilience and increasing the individual's satisfaction, performance, commitment and happiness.

Objectives of the Study

The main purpose of this study is to examine psychological capital (hope, optimism, efficacy and resilience) as determinants of psycho-social adjustment of inmates in Nasarawa Correctional centre. The specific objectives of the study are to:

- i. Determine the extent to which hope determines psycho-social adjustment of inmates in correctional centres in Nasarawa State.
- ii. Analyze the extent to which optimism determines psycho-social adjustment of inmates in correctional centres in Nasarawa State.
- iii. Examine the extent to which efficacy determines psycho-social adjustment of inmates in correctional centres in Nasarawa State.
- iv. Analyze the extent to which resilience determines psycho-social adjustment of inmates in correctional centres in Nasarawa State.

Hypotheses

The following hypotheses guided the study:

- H0₁:** There is no significant influence of hope on the determination of psycho-social adjustment of inmates correctional centres in Nasarawa State.
- H0₂:** There is no significant influence of optimism on the determination of psycho-social adjustment of inmates in correctional centres in Nasarawa State.
- H0₃:** There is no significant influence of efficacy on the determination of psycho-social adjustment of inmates correctional centres in Nasarawa State.
- H0₄:** There is no significant influence of resilience on the determination of psycho-social adjustment of inmates i correctional centres in Nasarawa State.

Methodology

Design: This study adopted a correlational survey research design. This is a form of a non-experimental research type. Correlational research design is a type of research design used to investigate the relationship between two or more variables.



Population: The population of this study comprises 1412 male and female inmates in Nasarawa State Correctional centres spread across three locations (Lafia, Wamba and Keffi)

Sample and Sampling Technique: The sample for this study was drawn from Nasarawa Correctional centres in the three locations. Based on Research Advisor's (2006) scholarly estimates, a sample size of 200 were drawn, since the population is less than 5000. The study involved simple random proportionate sampling technique used in selecting the respondents. Using this technique, the researchers selected the two hundred (200) participants.

Instrument: Two instruments were used for the collection of data in this study which are:

1. Psycho-Social Adjustment Scale

To measure overall correctional centre adjustment, the questionnaire contained a scale similar to that developed by Zamble and Porporino (1988). The scale consisted of 21 items that produced a Cronbach's alpha of .86, indicating strong internal consistency. The scale covers different aspects of psycho-social adjustment such as psychological adjustment, outside deprivations, loss of autonomy and control, physical correctional centre environment and inside social life. This Likert-type scale asked respondents to rate certain aspects of imprisonment as bothering them rarely (1), sometimes (2), often (3), or always (4). For the computation of the scale score, each respondent's item scores on the 19 items were summed. Thus, lower scores indicated better adjustment, with lowest possible score being 19 and the highest being 76. In a recent psychometric analysis, the Cronbach's alphas for each were as follows: factor 1: psychological adjustment = .761; factor 2: outside deprivations = .743; factor 3: loss of autonomy and control = .649, factor 4: physical correctional centre environment = .70; and factor 5: inside social life = .63 (Cook, 2018).

2. Psychological Capital Scale

The psychological capital scale was adapted from Psychological Capital Questionnaire by Luthans, Youssef and Avolio (2017). The scale consists of 24 items. The scale is a six Likert format from strongly agree (6) to strongly disagree (1). The scale is having four subscales with 6 items on each of the subscales (self-efficacy, hope, resilience and optimism). Some of the items on the scale: *"I feel confident analyzing a long-term problem to find a solution"*; *"When I have a setback at work, I have trouble recovering from it, moving on"*; etc. As reported by the developers, the scale is reliable as Cronbach's alpha coefficients of the four subscales ranged from .74 to .88, an indication that the scale is good for use in this study.



Results

Hypothesis One: There is no significant influence of hope on the determination of psycho-social adjustment of inmates correctional centres in Nasarawa State.

Table 1: Regression Analysis showing contribution of hope to psycho-social adjustment

Multiple R= .868

Multiple R² = .754

Multiple R² (Adjusted) = .752

Standard Error of Estimate = 6.60392

Source	Sum of Squares	df	Mean Square	f	f. Sig.
Regression	26403.246	1	26403.246	605.415	.000 ^a
Residual	8635.134	198	43.612		
Total	35038.380	199			

a. Predictors: (Constant), Hope

b. Dependent Variable: Psycho-Social Adjustment

From the table 1, the regression table shows that multiple R = .868, R² = .754, adjusted R² = .752 and Standard Error of Estimate = 6.60392. This means that hope has significant relationship ($r = .868^{**}$) with psycho-social adjustment of the respondents. Similarly, the result shows that hope as a component of psychological capital contributed significantly to psycho-social adjustment of the respondents. The contribution of 75.4% to variance of psycho-social adjustment of the participants was made by hope at 0.01 level of significance. Hence, null hypothesis one was rejected. Consequently, there is a significant influence of hope on the determination of psycho-social adjustment of correctional centre inmates in Nasarawa Correctional centre.

Hypothesis Two: There is no significant influence of optimism on the determination of psycho-social adjustment of inmates correctional centres in Nasarawa State.



Table 2: Regression Analysis showing contribution of optimism to psycho-social adjustment

Multiple R= .837

Multiple R² = .701

Multiple R² (Adjusted) = .700

Standard Error of Estimate = 7.27104

Source	Sum of Squares	df	Mean Square	F	f. Sig.
Regression	Regression	24570.515	1	24570.515	464.752
Residual	Residual	10467.865	198	52.868	
Total	Total	35038.380	199		

a. Predictors: (Constant), Optimism

b. Dependent Variable: Psycho-Social Adjustment

From the table 2, the regression table shows that multiple R = .837, R² = .701, adjusted R² = .700 and Standard Error of Estimate = 7.27104. This means that optimism has significant relationship ($r = .837^{**}$) with psycho-social adjustment of the respondents. Similarly, the result shows that optimism as a component of psychological capital contributed significantly to psycho-social adjustment of the respondents. The contribution of 70.1% to variance of psycho-social adjustment of the participants was made by optimism, at 0.01 level of significance. Hence, null hypothesis one was rejected. Consequently, there is a significant influence of optimism on the determination of psycho-social adjustment of correctional centre inmates in Nasarawa Correctional centre.

Hypothesis Three: There is no significant influence of efficacy on the determination of psycho-social adjustment of inmates correctional centres in Nasarawa State.



Table 3: Regression Analysis showing contribution of efficacy to psycho-social adjustment

Multiple R= .854

Multiple R² = .730

Multiple R² (Adjusted) = .728

Standard Error of Estimate = 6.91645

Source	Sum of Squares	df	Mean Square	f	f. Sig.
Regression	25566.609	1	25566.609	534.450	.000 ^a
Residual	9471.771	198	47.837		
Total	35038.380	199			

a. Predictors: (Constant), Efficacy

b. Dependent Variable: Psycho-Social Adjustment

From the table 3, the regression table shows that multiple R = .854, R² = .730, adjusted R² = .728 and Standard Error of Estimate = 6.91645. This means that efficacy has significant relationship ($r = .854^{**}$) with psycho-social adjustment of the respondents. Similarly, the result shows that efficacy as a component of psychological capital contributed significantly to psycho-social adjustment of the respondents. The contribution of 73.0% to variance of psycho-social adjustment of the participants was made by efficacy, at 0.01 level of significance. Hence, null hypothesis one was rejected. Consequently, there is a significant influence of efficacy on the determination of psycho-social adjustment of correctional centre inmates in Nasarawa Correctional centre.

Hypothesis Four: There is no significant influence of resilience on the determination of psycho-social adjustment of inmates correctional centres in Nasarawa State.



Table 4: Regression Analysis showing contribution of resilience to psycho-social adjustment

Multiple R= .828

Multiple R² = .686

Multiple R² (Adjusted) = .685

Standard Error of Estimate = 7.45027

Source	Sum of Squares	df	Mean Square	f	f. Sig.
Regression	24048.077	1	24048.077	433.247	.000 ^a
Residual	10990.303	198	55.507		
Total	35038.380	199			

a. Predictors: (Constant), Resilience

b. Dependent Variable: Psycho-Social Adjustment

From the table.4, the regression table shows that multiple R = .828, R² = .686, adjusted R² = .685 and Standard Error of Estimate = 7.45027. This means that resilience has significant relationship ($r = .828^{**}$) with psycho-social adjustment of the respondents. Similarly, the result shows that resilience as a component of psychological capital contributed significantly to psycho-social adjustment of the respondents. The contribution of 68.6% to variance of psycho-social adjustment of the participants was made by resilience at 0.01 level of significance. Hence, null hypothesis one was rejected. Therefore, there is a significant influence of resilience on the determination of psycho-social adjustment of correctional centre inmates in Nasarawa Correctional centre.

Discussion of Findings

Hypothesis One: There is no significant influence of hope on the determination of psycho-social adjustment of inmates correctional centres in Nasarawa State. Based on the result of this study, this null hypothesis was rejected because there is a significant influence of hope on the determination of psycho-social adjustment of correctional centre inmates in Nasarawa Correctional centre. The result of this study is not standing alone, as it finds support in previous studies that had been conducted in related areas. For instance, Ociskova, *et al.*, (2015) found that the most significant predictor of the therapeutic outcomes and treatment response among clinical patients is hope. In addition, Kwon (2020), Magaletta and Oliver (2019), and Hayes, *et al.*, (2017)



maintained that hope has been found to be a protective factor for human adaptation, and for psychotherapeutic change. Similarly, Sariçam, (2015) found that subjective happiness was predicted positively by various components of hope: trust and confidence, positive future orientation, and social relations and personal value. Moreover, hope has also positive relations with psychological well-being (Magaletta and Oliver, 2019), life satisfaction (Wong and Lim, 2019), optimism (Scheier and Carver, 2013), internal locus of control (Gizir, 2014), resilience, self-efficacy (Bandura, 1997; Zimmerman, Bandura, and Martinez-Pons, 1992). While various reason could be adduced for this result, one could support this finding with the scholarly submission that hopeful people are really determined in pursuing goals in order to find the best way to implement and to reach their aims (Tibbs, Green, Wheeler and Carmody-Bubb, 2015). An inmate that is hopeful of getting freedom, turn-a-new leave, become a law-abiding citizen after finishing his or her is always full of hope which will influence the way the inmate will adjust to the preconisation experience and challenges.

Hypothesis Two: There is no significant influence of optimism on the determination of psycho-social adjustment of inmates correctional centres in Nasarawa State. With respect to the result of this study, it was revealed that there was a significant influence of optimism on the determination of psycho-social adjustment of correctional centre inmates in Nasarawa Correctional centre. This result corroborates Kivima“ki, *et al.*, (2015) who found that Increase in sick days after the event was smaller and returned to the pre-event level more quickly among highly optimistic individuals than among their counterparts with low optimism. Likewise, discovery in another study showed that high optimism was associated with highest quality of life satisfaction in a study of over 200 college students (Harju and Bolen, 2018). Moreover, Wrosch and Scheier (2013) studied the importance of optimism and goal adjustment and found that optimistic individuals manage difficult situations better than do pessimists. In the same vein, Achat, Kawachi, Spiro, DeMolles, and Sparrow (2020) found optimism to predict higher levels of general health perceptions, vitality, and mental health, as well as lower levels of bodily pain. Coneo, Thompson and Lavda (2017) showed that optimism was shown to have a strong negative relationship with aggression, which is a phenomenon that could arise as a result of incarceration. Taylor, *et al.*, (2021), in addition found that the relationship between optimism and coping of men. Just as in this study, Aspinwall and Taylor (2020) discovered that among patients with physical health challenges, there is significant relationship between optimism, coping, and psychological well-being. The significant influence of optimism on psycho-social adjustment of inmate is just accidental, but a discovery that found its place in the scholarly opinions and submissions. For instance, optimistic inmate are known to be practicing positive emotions and increasing the levels of motivation to manage challenges, looking for creative ways to solve it and taking advantage from these



opportunities (Luthans, Avolio, Avey and Norman, 2017; Tibbs, Green, Wheeler and Carmody-Bubb, 2015). Being optimistic means that one is able to see a better tomorrow; and such believe in better tomorrow will help correctional centre inmate adjust psychosocially to the challenges of correctional centre, as well as behave positively towards a better productive future.

Hypothesis Three: There is no significant influence of efficacy on the determination of psycho-social adjustment of inmates in correctional centres in Nasarawa State. The result of this study confirmed that there was a significant influence of efficacy on the determination of psycho-social adjustment of inmates in Nasarawa Correctional centres. This result is in line with that of Abbas, Raja, Darr and Bouckenoghe (2013) where it was found that individuals high in self-efficacy are less likely to expect failures when they are facing challenges, difficulties and uncertainties; hence such individuals derive more satisfaction from job and perform optimally. Self-efficacy has been found useful in addressing difficult challenges and control outcomes, overriding several impediments to success and guiding to higher levels of motivation, action and performance (Bandura, 2012). Loton and Waters (2017) discovered that among patients with mental health issues, self-efficacy was a significant partial mediator, accounting for 40.0% of the total effect on happiness and 52.7% of the total effect on distress. Furthermore, Roth, Asbjørnsen and Manger (2016) found that among correctional centre inmates, self-efficacy significantly increases literacy level. Caprara, *et al.* (2006) found that affective and interpersonal self-efficacy were robust predictors of happiness. In addition, self-efficacy beliefs were stronger predictors of subsequent life satisfaction (Vecchio, *et al.*, 2017). Dahlbeck and Lightsey, (2008) found general self-efficacy beliefs predicted lower anxiety levels. Engels (2015) was also able to establish associations between self-efficacy and emotional adjustment. Karen (2015) found that social self-efficacy significantly path with the psychological adjustment variables of self-esteem, loneliness, and depressive symptomatology.

Hypothesis Four: There is no significant influence of resilience on the determination of psycho-social adjustment of inmates correctional centres in Nasarawa State. Based on the result presented and interpreted in this study, hypothesis four was rejected. Specifically, the result revealed that there was a significant influence of resilience on the determination of psycho-social adjustment of inmates in Nasarawa Correctional centres. According to result of a study by Panchal (2016), wellbeing was found to be significantly positively correlated with resilience. Craig, *et al.*, (2014) discovered that resilience remained significant predictors of post-deployment adjustment of Navy service members. Sood, Bakhshi, and Devi (2013) found that resilience and mental health was positively significantly related with each other. Mittal and Mathur (2011) showed that high score on the scales of learned optimism and life satisfaction in turn resulted into psychological well-being even in the time of recession. Newton-John,



Mason, and Hunter (2014) revealed that higher resilience was also positively correlated with greater pain self-efficacy. One of the reasons that could be ascribed for this result is that each time resilient people bounce back from a previous setback, they are producing higher levels of resilience and increasing the individual's satisfaction, performance, commitment and happiness (Youssef and Luthans, 2017). By implication, a resilient correctional centre inmate will have the belief in self-capacity to carry out tasks and activities that will help adjust as necessary in the correctional centre. Besides, resilient inmate is also able to belief in overcoming all the challenges and confrontations within the correctional centre or correctional centre.

Conclusion

This study examined psychological capital as determinants of psycho-social adjustment of inmates in Nasarawa Correctional centres. Four dimensions of psychological capital that have been established in literature are hope, optimism, efficacy and resilience. Through the aid of validated and reliable questionnaire, data were collected from the respondents and analyzed using appropriate statistical tool. Based on the result of this study, it was concluded that psychological capital (hope, optimism, efficacy and resilience) are significant determinants of psycho-social adjustment of inmates in Nasarawa Correctional centres.

Recommendation

Based on the conclusion of this study, the following recommendations were made:

1. There is the need to include training on development of different dimensions of psychological capital into the training module and programmes for inmates in correctional centres. Such training will make them imbibe the valuable and essential attributes that will assist them in adjusting positively to the experience of preconsolation.
2. In addition, the employees that are working in correctional centres need to understand that they should help inmates in the development of helpful attributes and psychological capital that can help them become better and law-abiding citizens after they might have finished their terms.
3. Government should ensure that certified professionals such as counselling and rehabilitation therapists are employed and saddled with the responsibility of rehabilitating the inmates. The practice of just employing anybody without professional knowledge should be avoided. However, for those already in the service, government can organize in-service training for them on development and enhancement of psychological capital. This is because if these employees do



not possess these capitals, it is not possible for them to consequently help the inmates.

Scholars in the areas of counselling, social work, sociology, criminology and psychology should strive to develop training package and modules that can help inmates in correctional centres adjust positively to centre's conditions, especially in the area of developing psychological capital (i.e. hope, optimism, resilience and efficacy).

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CHAPTER 45

PERCEPTION OF TEACHERS ON THE HEALTH BENEFITS OF PHYSICAL ACTIVITY IN SELECTED SECONDARY SCHOOLS IN IJEBU NORTH LOCAL GOVERNMENT AREA

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Abstract

It is important for us to be active throughout our lives. Teachers' wellness is vital in discharging their duties as it affects teaching performance and their live achievement therefore, teacher health should be of concern to educational stakeholders and practitioners hence, the study examined the perception of teachers on the health benefits of physical activities in selected secondary Schools in Ijebu North Local Government. Being physically active can bring substantial benefits to human health as recorded in literature. Physical activity benefits many parts of the body such as the cardiovascular system, skeletal system, bones, respiratory system and boost the immune system of the body amongst others. Two hundred and fifty (250) participants were randomly selected. A self-structured questionnaire was the instrument used to elicit information from the respondents: (A) collected demographic information of the participants, while (B) Impact of physical activity on Teachers Health questionnaire (IPATHQ, $r=0.80$), Health Benefits of Physical Activity for Teachers Questionnaire (HBPATQ, $r=0.83$), was structured and validated to collect information on the hypotheses at 0.05 alpha level. The findings revealed that there is a relationship between physical activity and health benefits as perceived by the secondary school teachers in Ijebu North Local Government Area. The study recommended that Teachers should be involved in at least 150 minutes of moderate-intensity aerobic physical activity throughout the week or at least 75 minutes of vigorous intensity aerobic physical activity throughout the week or an equivalent combination of moderate and vigorous-intensity activity for the young teachers, aerobic



activity should be performed in sessions of at least 10 minutes duration and also organize physical exercise sessions for the students.

Keywords: *Physical Activity, Health, Teachers*

Introduction

Physical activity is considered one of the most important physical needs of the individual, and is as significant as relaxation, recreation, and pleasure. It is a free time activity, voluntarily chosen which provides happiness, satisfaction, and development for the individual. The state of teachers' well-being directly affects teaching performance and life accomplishment, the ability to address students' needs, and steadiness in schools all of which influence students' academic achievement. Therefore, teachers' well-being matters and should be of concern to educational experts. Recently there is a countless emphasis on the vital role of physical activity and fitness in improving the health of the human being. Individuals who can achieve and maintain good health and fitness should be able to live a more successful life, and this should also mean they would be less affected by diseases. Regular physical exercise has several beneficial effects on overall health while decreasing body mass and adiposity are not the primary outcomes of exercise, Physical activity can mediate several diseases that accompany obesity including Type 2 diabetes and cardiovascular disease (Ashor, *et al*, 2015). There are several risk factors leading to the development and progression of cardiovascular diseases, but one of the most prominent is a sedentary lifestyle (American Heart Association American Heart Disease and Stroke Statistics, 2018).

Teachers are known to play a significant role in students' lives thus, teacher wellness, including physical and mental health, is a major concern for society (Lauzon, 2001, Bajorek, *et al.*, 2014). Regular engagement in physical activity facilitates benefits for physical and psychological wellness. It is generally accepted that physical activity confers benefits to psychosocial health, functional ability, and general quality of life and has been proven to reduce the risk of coronary heart disease and some cancers. Here, physical activity refers to 'any bodily movement produced by skeletal muscles that result in energy expenditure. Conditions associated with physical inactivity include obesity, hypertension, diabetes, back pain, poor joint mobility, and psychosocial problems. (Bonfigilo, 2002)

There is a relationship between physical activity and health, Physical activity is a way of promoting high standards of health, and health is an integral part of human wellbeing. Physical activity is central to health, and its importance clearly extends beyond its role in achieving energy balance to prevent and treat obesity and overweight. Adequate daily physical activity improves cardiovascular health,



metabolic health, brain and mental health, and musculoskeletal health benefits (Kohl and Cook, 2013). Promoting active lifestyles can help us address some of the important challenges facing the teachers today. Increasing physical activity has the potential to improve the physical and mental health of the nation, reduce all-cause mortality and improve life expectancy. It can also save money by significantly easing the burden of chronic disease on the health and social care services. Increasing cycling and walking will reduce transport costs, save money and help from environmental pollution. Fewer car journeys can reduce traffic congestion and improve the health of communities. Other potential benefits linked to physical activity in children and young people include the acquisition of social skills through active play (leadership, teamwork, and cooperation), better concentration in school, and displacement of anti-social and criminal behaviour.

The importance of physical activity for health was identified over 50 years ago. During the 1950s, with more physically active people demonstrated lower rates of coronary heart disease and higher level of life achievement. This study led the way for further investigation, and evidence now clearly shows the importance of physical activity in preventing ill health. We need to be active throughout our lives. Physical activity is central to a baby's normal growth and development. This continues through school, and into adulthood and older years. Being physically active can bring substantial health benefits to one's life. Individuals should minimize sedentary lifestyle behaviour (e.g. sitting for long periods of time) which is now recognized as an independent risk factor for ill health. It has been shown that regular physical activity is important throughout the life cycle. Among teacher's exercise contributes to the conservation of physical function and the improvement of quality of life. Physical activity for teachers has been attributed to maintaining an adequate level of function in order to sustain the activities of daily living. It is assumed that the maintenance of functional independence supports positive well-being. Research also shows that, on occasion, regular exercise can reverse deteriorating mental function and allow health stability. In addition, group exercises have been shown to provide the social support that teachers require when experiencing a sudden change in personal circumstances such as in the loss of a spouse or child, as well as an outlet for tension and self-expression. Physical activity has the potential replacement or enhancement of hormone therapy related to conditions such as obesity, diabetes mellitus, depression, and osteoporosis. Aerobic exercise has been shown to improve negative mood associated with menopause. A study of exercise intensity and teachers found that although men exercised more intensely than women, the intensive practice of physical exercise was related to better self-rated health, lower occurrence of depressive symptoms, and higher self-rated meaningfulness of life for both men and women. However, the authors admit that positive psychological health makes it possible to exercise intensely; therefore, a causal relationship cannot be determined. (Larson, et al (2006)



Hypotheses

The following hypotheses were tested in this study:

1. Physical activity will not significantly impact the health of teachers.
2. Physical activity will not significantly increase among secondary school teachers.

Methods

A descriptive survey research design was used for this study, the population consisted of school teachers in seven selected secondary schools in Ijebu North local government. Two hundred and fifty (250) participants were carefully selected for the study using a random sampling technique procedure. Purposive sampling techniques were adopted to select seven secondary schools in Ijebu North Local Government of Ogun State Nigeria. A self-structured questionnaire was used as an instrument to elicit information from the respondents on the Perception of Teachers on The Health Benefits of Physical Activity in Selected Secondary Schools in Ijebu North Local Government Ogun State. The questionnaire was divided into two sections; A and B. Section A collected demographic information of the participants, while B Impact of physical activity on Teachers Health Questionnaire (IPATHQ, $r=0.80$) and Health Benefits of Physical Activity for Teachers (HBPAT, $r=0.83$) was used to determine the face and content validity of the instruments, copies of questionnaire were given secondary schools Teachers on the health benefit of physical activity. Two weeks were set aside for data collection with visits to all the selected schools. Data collection involved three trained research assistants who assisted in administering the instrument at the various locations, Chi-square analysis was used to test hypotheses at 0.05 level of significance.

Ethical Consideration

An informed consent form was signed by the participants. The informed consent form spelled out the title of the study, the purpose of the study, justification for doing the study as well as the benefit that will be derived from the study. Participation was considered voluntary and participants' status and other bio-data written on the questionnaire were not disclosed to keep their data confidential.



Result and Findings

Table 1: Demographic Characteristics of the study Participants (N = 250)

Parameters	Frequency(f)	Percentage (%)
Gender		
Male	155	65
Female	95	35
Age Group		
<i>Under 30 years 80 34</i>		
31-40 years	64	25
41-50 years	60	24
Above 50 years	46	17
Marital Status		
Single	80	32
Married	163	65
Divorced	7	3
Religion		
Islam	106	44
Christianity	94	31
Traditional	30	20
Others	20	5
Level of Education		
NCE	138	62
B.Sc.	69	25.5
M.Sc.	43	12.5
Working Experience		
Below 5 years	80	33
5 – 10 years	64	25
10 – 20 years	60	24
20 years above	46	18

Source: Field Survey; 2022



Hypotheses One: Physical activity will not significantly impact on the health of teachers.

Table 2: Physical activity and impact on health of teachers

	Observed N= 250
SA	119
A	85
D	31
SD	15
Total	250

Hypotheses Two: Physical activity will not significantly increase among secondary school teachers

	Observed N =250
SA	88
A	127
D	22
SD	13
Total	250

Discussion of Findings

Findings showed that the wellness of teachers contributes to their effectiveness in performing their duties at work. Hence physical active participation in physical activity is essential to reach this goal. Also, regular physical exercise can mediate several diseases that accompany obesity including Type 2 diabetes and cardiovascular disease as reported by (Ashor, *et al.*, 2015). The findings of the study also showed that, there were some constraints in teachers' participation in physical exercises irrespective of the high level of knowledge and benefits accruable from exercises. The findings showed that there were problems with sporting facilities and equipment within the school leading to a lack of interest poor attitude and teachers towards physical activity participation, negligence attitude of the Government in investing in physical exercises for teachers, coupled with very poor salaries and allowance



constituted some hindrances. It was even observed that, it was difficult to persuade teachers to engage in regular physical exercises even when there was a necessity for it; hence, it has never been part of them.

Conclusion

Regular physical activity is associated with enhanced health and reduced risk of all-cause mortality. Beyond the effects on mortality, physical activity has many health benefits, including the minimal risk of cardiovascular diseases, ischemic stroke, diabetes, colon cancers, depression, and fall-related injuries. It has been shown that regular physical activity is important throughout the life cycle. Physical activity is considered one of the most important bodily needs of the individual, and is as important as relaxation, it provides cognitive content and training planned to develop motor skills, knowledge, and behaviors for physical activity and physical fitness. Physical activity is a method of promoting high standards of health, and health is an integral part of physical education as well. Furthermore, the person who has good well-being and health is supplementary able to develop his abilities and of a diversity of knowledge acquisition than the person who has poor well-being and health. Physical activities, under good management, would deliver an outstanding opportunity to those people involved in them. The teacher is an important factor in ensuring successful teaching and learning in school therefore there is a need for the teacher to stay fit and healthy to ensure good delivery of their duties as teachers.

Recommendations

Physical activity includes leisure time activities, such as recreation, walking, cycling, video games playing, sports, or planned exercise.

The recommendations to improve cardiorespiratory and muscular fitness, bone health and reduce depression

1. Teachers should do at least 150 minutes of physical activity throughout the week or do at least 75 minutes of vigorous–intensity aerobic physical activity throughout the week or an equivalent combination of moderate and vigorous-intensity activity for the young teachers.
2. Regular physical activity should be encouraged among teachers and teachers should also organize physical exercise for the students.
3. Sporting equipment and facilities should be made available by the government and schools authority within the school environment to encourage teachers' participation in physical activity.
4. Physical activity programme should be included in school curriculum activities.



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CHAPTER 46

ENSURING THE EFFECTIVE TEACHING AND LEARNING PROCESSES THROUGH AN INNOVATIVE PEDAGOGICAL PRACTICES

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Abstract

The contemporary world is characterized by globalization and rapid technological development with its significant and widespread effects on education world over. Consequently, it necessitates a close look and review of how teaching and learning can be guaranteed in schools. Therefore, this article looks into ensuring effective teaching and learning processes through an innovative pedagogical practices in schools. An attempt was made to discuss pedagogical practices, its approaches and the need for pedagogical innovation in schools. In addition to this, pedagogical teaching process, the innovative teacher and the need for pedagogical innovation were examined with particular interest on Virtual Learning Environment. Conclusively, suggestions were made on the need for incorporation of technology tools into teaching and learning for effective pedagogical practices in schools.

Keywords: *Innovative teacher, Pedagogy, Virtual learning environment*

Introduction

Life changes daily due to technological advancement attest to transformation occurring daily in response to this line of development, and life-long learning is increasingly recognised as a critical educational goal. To educate is to simultaneously preserve the past in what we expect for the future. At present, the educational system is so spontaneous that we could say it is natural for human beings. Our teaching and learning habits are helpful, but they could be deadly. However, they are useful when



the conditions in which they work are predicted and stable because every day, we confront changes and find ways to adapt and thrive.

The world of education is different, and educators have probably been a part of at least some of the educational transformations occurring today. Educators should be noted that educators are preparing learners for the profession that can advance students into infinitely efficient and capable lifelong learners. Therefore, teaching must be transformed to meet learners' needs (Prensky, 2005). Such that desk is in neat rows facing the instructor who dispenses knowledge being replaced with a social cognitive theory of learning. However, since the teaching and learning styles of yesterday's school classroom are no longer applicable in this 21st century, Weissblueth, Nissim and Amar (2014) posited that the 21st century presents a multi-faceted reality and embodies many trends that are characterised by globalisation, rapid technological development, dynamism and significant, widespread socio-economic processes showing that the younger generation is now exposed to intense changes far more than in the past.

What is not evident to the average mind about teaching and learning, which is indispensable, is the method or approach to embracing the instructional delivery process and unwillingness to accept novel teaching environments, processes and goals. Therefore, 21st-century teachers are at the forefront of a student acquiring new understanding, knowledge behaviour and attitude, as well as classroom manager in which students can develop the skills they might need at present or in the future. The 21st-century teachers need teaching strategies to ensure that the focus of pedagogy is to prepare today's youngsters for the future of where they will work in the current world educationists need to advance the use of effective and advanced teaching strategies to embrace such skills in the students. This innovation, creativity, teamwork and collaboration must be embraced and centred on learning program components. By way of explanation, a new pedagogy is needed (Center for Educational Technology, 2010). Hence this paper is an opinion discourse on how to ensure the effective teaching and learning processes through an innovative pedagogical practices.

Pedagogical Practices in Schools

Pedagogy is a very complex and not very easy concept to define. It is derived from French and Latin adaptations of Greek word in which "Pad" means children and "Agogus" means leaders of the teacher. (Shah, and Campus, 2021). That pedagogy is any purposeful pursuit by anyone planned to enhance the learning of another. Ibe (2014) puts pedagogy as the art and science of teaching children and adolescents associated with formal or school education. Merriam-Webster dictionary, cited in Dalton (2017), described pedagogy as the art of studying the teaching method. Monoranjan, Bharati and Jayasri (2013) saw pedagogy as the art and science in which



teachers use different teaching strategies. Therefore, researchers viewed pedagogy as an interaction between teachers and students, the learning environment and the learning task. This broad term includes how teachers and students relate and the instructional approaches implanted in the classroom.

Furthermore, according to Monoranjan, *et al.* (2013), pedagogy practice promotes the well-being of students, teachers and the school community. It supports students' and teachers' confidence and contributes to their sense of purpose for being at school. In addition, it builds community confidence in the quality of learning and teaching in the school. Pedagogy is the practice that a teacher and a particular group of learners create, enable and experience.

Pedagogical Approaches

Instructional methods used in the classrooms by school teachers embrace learning. Various pedagogical approaches are common in school, but some strategies are more effective and appropriate than others (UNESCO, 2018).

However, the researchers believe that the effectiveness of pedagogy often depends on the subject matter to be taught, understanding the diverse needs of different learners and adapting to the ground conditions in the classroom and the surrounding. Teachers should commit themselves to the adoption of teaching strategies and not only the use but to know how to practice (Darling in Kim, Raza, and Seidman, (2019)), this is to teach relevant knowledge, concepts and skills in multiple way to connect new and existing knowledge (Victoria state Government 2020)

In a general mind view, experienced teachers believe in their students' capacity to learn and carefully utilise various pedagogical approaches to ensure learning occurs.

Christopher (2014) itemised some pedagogical approaches to teaching thus:

- i. **Hip-hop education** is an approach that focuses on hip-hop culture and its elements in teaching and learning both within and outside traditional schools.
- ii. Process-oriented **guided inquiry lessons** are part of a learning strategy with both a constructivist and social component.
- iii. **Project-based learning** is an approach to teaching that focuses primarily on having students engage in explorations of world problems and challenges.
- iv. **Reality pedagogy** is an approach to teaching and learning that focuses on teachers understanding student realities and using this information as the starting point for instruction.
- v. **Flipped classroom** involves a process where the typical lecture that happens in the classroom occurs at home. Students, however, watch lectures on video and



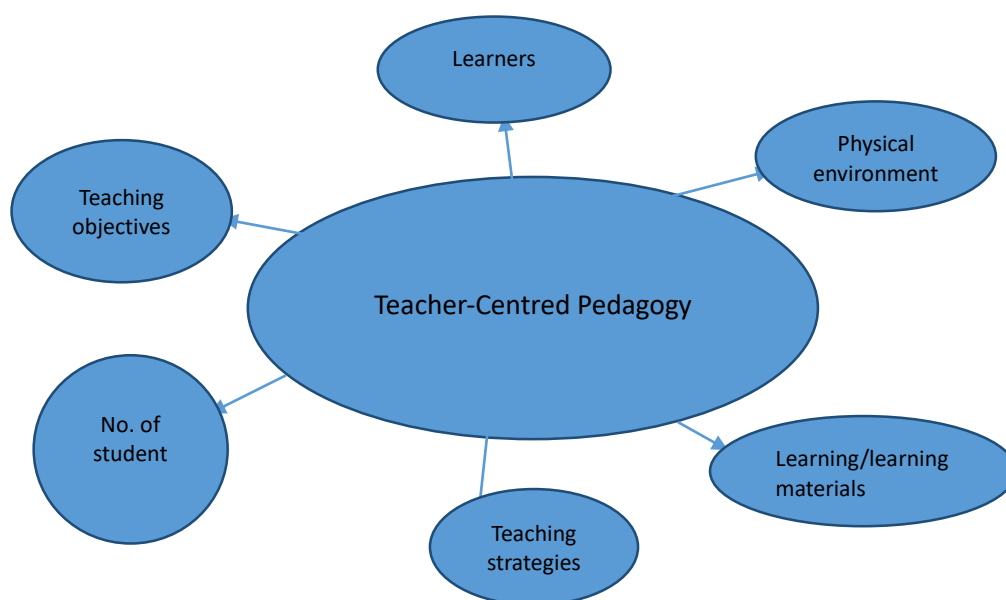
then return to school to engage in the exercises they would traditionally have for homework and ask questions based on the lecture they watched at home.

- vi. **Engaged pedagogy** uses teaching approaches that encourage student-student interactions (UNESCO, 2018).

Furthermore, according to Tes (2018), pedagogical approaches are broken down into four categories behaviourism, constructivism, social constructivism and liberationism.

- vii. **Behaviourism** uses the theory of behaviourism to inform its approach. A behaviourist pedagogy approach would say that learning is teacher-centred. It would promote the use of direct instruction and lecture-based lessons. The presumption of behaviourism in a classroom situation advanced from the pedagogical assumption by Thorndike (1911), Pavlov (1927) and Skinner (1957). *Behaviourist pedagogy* is the surmise that the teacher should be the sole authority figure. It leads to the lesson that knowledge should be delivered in a curriculum where each subject is taught. There is an approach that acknowledges teacher-centred pedagogy. However, to be effective, teachers must consider local content, the number of students in class, the physical environment, learners, teaching and learning materials, teaching strategies and teaching objectives.

Behaviourist Pedagogy Model



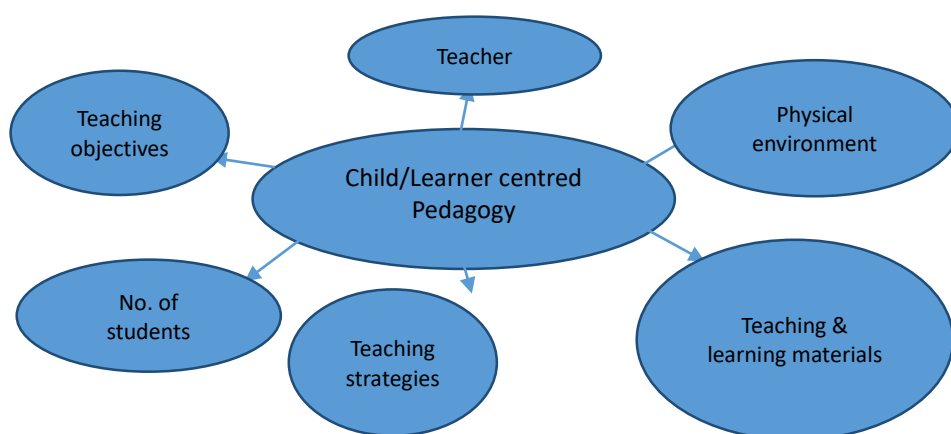
Omodara, Adeoluwa and Makinde (2019). Self-Designed Model

Constructivism: Constructivism is an assumption that people acquire experiences and reflection. Constructivist pedagogy puts the child at the centre of learning and is



sometimes called invisible pedagogy. A constructivist approach would incorporate project work and inquiry-based learning and might adopt a Montessori or Steiner method. Constructivism hinges on the pedagogical research of Piaget (1890-1896). Piaget wrote extensively about the Schemas idea that learners come ready to learn, and the teacher must build activities to facilitate their learning. Younger children work things through physically, whereas older children tackle symbolic and abstract ideas. It allows learners to explore ideas and develops a deeper understanding. This medium is an approach that acknowledges child/learner-centred pedagogy. However, to be effective, teachers must consider local content, the number of students in class, the physical environment, teaching and learning materials, strategies and objectives.

Constructivism Pedagogy Model

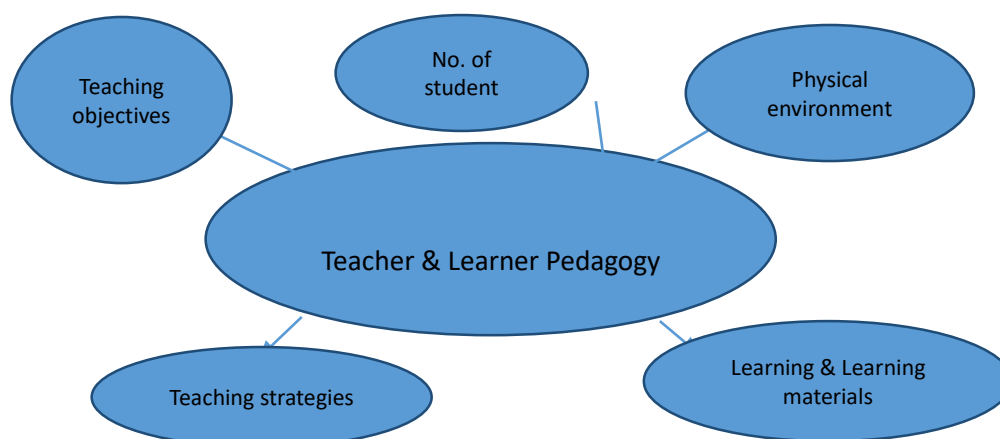


Omodara, Adeoluwa and Makinde (2019). Self-Designed Model

Social Constructivism: A social constructivism pedagogy could be considered a blend of two priorities: teacher-guided and student-centred. Lev Vygotsky developed constructivism, established on the effort of Piaget but disputes the position of Piaget that edification could only happen in a companionable society and feel that edification was a joint effort between student and teacher. The teacher would use group work elements but small or group sizes and limit the choice of topics. The teacher might also use teacher modelling, questioning, and a mixture of individual, pair and whole class instruction. This medium is an approach that acknowledges learner and teacher-centred pedagogy. However, to be effective, teachers must consider local content, the number of students in class, the physical environment, teaching and learning materials, strategies and objectives.



Social Constructivism Pedagogy Model



Omodara, Adeoluwa and Makinde (2019). Self-Designed Model

Librationism: Librationism is a critical pedagogy developed by Brazilian educator Paulo Freire. He focused on removing the two barriers to learning, poverty and hunger. For example, that teacher might use examples of literature that contain non-standard constructions such as hip-hop or graffiti. At the same time, students may take on the role of the teachers and decide upon the lesson's topic.

Pedagogical Teaching Process

Ibeh (2014) itemised the following as pedagogical processes:

- The pedagogical teaching process is a content model characteristic of the traditional teaching method where the teacher is the centre of activity setting and arranging the curriculum content into units selecting what appropriate means for transmitting the content. At the appropriate time also, the teacher tests the extent of learning earlier, sets the performance standard and consequently rewards successes and punishes failure.
- The pedagogical teaching method is subject-centred in which the teacher is guided by the demands of this discipline and unilaterally transmits knowledge and skills to a learner deemed to be and considered as a "tabula rasa" through the techniques of lecture assignments, drills, rote learning and examination, that the teacher is seen as the embodiment and custodian of knowledge.
- The instructional environment is rigid and situational, which defines roles and statuses for both the teacher and the Learner.



- The pedagogical environment connotes a passive moment for the Learner who is believed to know nothing but rather sits passively before the almighty "Knower and authoritarian teacher. As a passive actor in the teaching/learning process, his immediate concern is to receive what the teacher gives and return the same in measuring learning outcomes.
- Pedagogical learning is compulsory as most activities are regulated and regimented.

The Need for Pedagogical Innovation

The edification method of the 21st century has changed radically with the integration of technology in every sector. However, at the same time, the students are more mature than the last time. In the 21st century, education depends on thinking, interpersonal, information media, technological, and life skills (Sardar, 2018). Rashidah (2017) described a 21st-century teacher as someone who looks forward to the future as someone who is aware of the ever-changing trends in technology and is in tune with what the future may bring to education. Dimkpa (2015) saw a 21st-century teacher as the mirror of his/her students in the school system.

However, for changing the globalized world, the role of teachers is essential to improve sustainable education. Nola (2006) opined that the 21st-century teacher is in complete charge of the classroom and the centre of focus as a controller. He/she assumes this role to know what the students do, what they say and how they say it. As a prompter, the role of the 21st-century teacher is to encourage students to participate and make suggestions. However, when learners are lost for words, the teacher as a prompter need to be careful to avert embarrassment because students can sometimes lose the resource thread and become unsure of how to proceed. Nola further stressed that, as a, the 21st-teacher should be seen as a walking resource centre that offers helps, provides aids that students lack with appropriate communicative activities and also guide learners to use available resources. The teacher should spoon-feed the learners as it might have the downside of making learners reliant on the teacher. As an appraiser, the role of an evaluator allows 21st-century teachers to correct learners and see how effectively learners are performing and how well they perform.

Feedback and offers corrections. However, it should be Feedback and offers corrections. However, it should be communicated with thoughtfulness to equip students with confidence or self-assurance for prompt learning targets. Moreover, as a participant, Nola explained that this role improves the atmosphere in the class when the 21st-century teacher takes part in an activity that could influence the teacher's tasks and performance. Hence the teacher can enliven a class; if a teacher can stand back and not become the centre of attention, it can be a great way to interact with learners without being too overpowering. While as a tutor, the role of the 21st-century teacher



is a great way to pave the way for attention to his/her student. It can also allow a teacher to tailor-make a course to fit specific student needs. However, one of the main expectations of today's education is to improve learning system Koparan and Rodriquez-Alveal (2022). However, the best quality a teacher can achieve is his willingness to bring new teaching strategies in to his lesson (Kampen, 2022).

This role also gives the teacher advice and guidance and helps students clarify ideas and issues that can make students independent and comfortable in/her studies.

Babalola (2011) clarified that as an organiser, the success of any 21st-century teacher depends on how well organized he/she is in lesson preparation. Everything the teacher and learners will use in the classroom must be ready. It wastes time if a teacher has to send or look for this or that in the middle of the lesson, and learner attention wanders when the lesson is interrupted. Likewise, the teacher as an organizer can also serve as a demonstrator, allowing a teacher to get involved and engaged with learners.

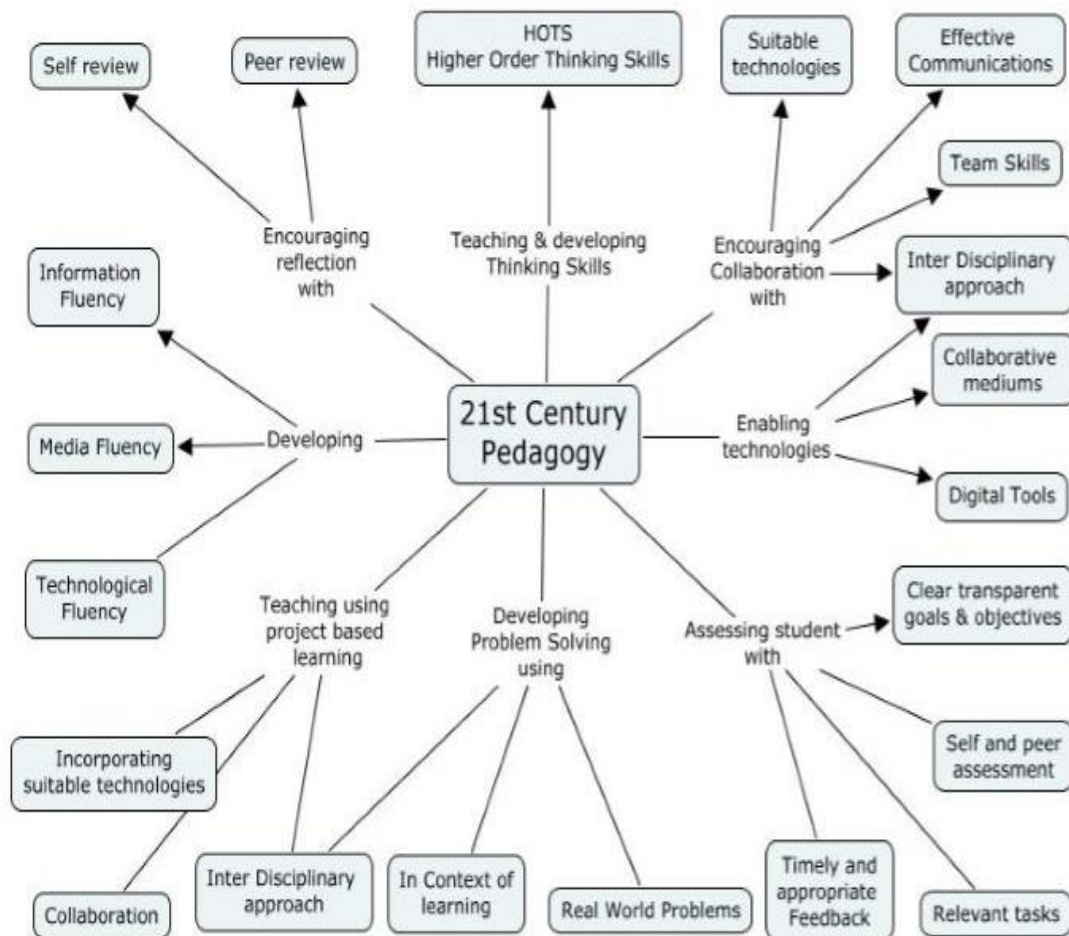
As a planner, Sardar (2018) opined that a 21st-century teacher should be a big planner to support students' psychological needs since students' future depends on 4C's4C (critical thinking, communication, collaboration and creativity). Is equally an Innovation to create new and better things. However, George (2016), as an innovator, the 21st-century teacher should be able to create something new. Thus, this can be in the form of iteration or invention, but it has to be better.

21st-century teachers are masters of technology in the classroom. They should collaborate and work well in a team. They adapt whatever comes their way, which is, look at their practice and adapt based on the needs of their students. The 21st-century teachers are lifelong learners. That means they do not just expect their students to be lifelong learners but stay current and on top of what is new in education. They take a stand and advocate for their profession (Rashidah, 2017). They keep parents and the community informed on what is happening to their children's education and resolve it head-on (George, 2016; Rashidah, 2017).

Furthermore, Sinha (2018) opined that 21st-century teachers must use effective and advanced teaching strategies to incorporate competence (such as problem-solving, digital literacy and critical thinking) into the students. They should learn how to communicate, collaborate and present ideas to navigate various challenges in advanced life. Furthermore, 21st-century teachers should know how to incorporate technologies such as 3D models (planets, machines and historical artefacts), mobile applications and social media platforms (Facebook, Twitter, WhatsApp, email and the like.) in studies. They should be able to anticipate and plan for the student's future. As well as push the students in the right direction in the technological world. In contrast, George (2016) and Sinha (2018) opined that the 21st-century teacher should know how to build, foster and nurture student relationships.



A Diagram of 21st Century Pedagogy



Source: Teach Thought Staff (2018)

The Innovative Teacher

Griola and Ruairs (2001), as cited in Dimkpa (2015), highlighted the expectations of 21st teachers as follows:

- should acceptably conduct themselves, adjudged to be profitable for the promotion of teaching and learning;
- sustain the social approval and of the status walk of life;
- lay of hold all rational stride with the care of pupils under their supervision to establish their well-being and fortune;
- work in the structure suitable and applicable to the rules and ordinance act in accordance;
- act following the assent of civil and school blueprint, plan of action and direction which aim to advance pupils' knowledge, well-being and safety;



- acclaim where suitable remedy or happening that influence pupils' success;
- be in touch constructively with pupils, associates, parents, school superintendence and others in the school community in a professional mode;
- establish that any meet-up with pupils, workmates, parents, and school authority, is connected, embrace passion via online avenues such as email, chatting and social media service plot;
- guarantee that they do not deliberately explore, input or have prohibited materials, images, or pornography in their possession;
- certify that they do not operate under the impact of any stuff which may weaken their readiness to upskill;
- upgrade by advancing self skillfully and take leadership for developing and revamping the standard for the skilful practice of the profession;
- sustain the concept of expertise skills and comprehension to corroborate its ongoing;

Virtual Learning Environment

A virtual learning environment (VLE) in educational technology is a browser-based deliverer for the automated details of courses of study, usually within educational institutions. It dispenses resources, activities and interactions within a course structure and provides for the different stages of assessment (Britain and Liber, 1999). VLE also usually reports on participation; and has some level of integration with other institutional systems (Weller, 2007). A virtual learning environment is a system that offers educators digitally-based solutions to create interactive, active learning environments.

The following components are required for the best virtual learning environment or online education curriculum (Online Wikipedia, 2019).

- **Content management** – creation, storage, access to and use of learning resources
- **Curriculum mapping and planning** – lesson planning, assessment and personalization of the learning experience
- **Learner engagement and administration** – managed access to learner information and resources and tracking of progress and achievement
- **Communication and collaboration** – emails, notices, chat, wikis, blogs



Honest time communication – live video conferencing or audio conferencing. Wikipedia (2019) puts that a virtual learning environment may involve the following features:

- The direction of the course of study
- carrying out instruction about the interjectory: requisite, qualification, registration, remittance, physical period, and satisfied facts for the school teachers.
- A bulletin board for recent facts about the latest course. The actual subject matter or all of the careers; perfect curriculum for distance learning request, while some portion of it, when used as a tranch of a typical course. Typically includes material such as copies of lectures in the structure of subject matter, audio or video unveiling, and undermined linear display
- Auxilary resources, either unified or links to external resources. Typically prop-up learning or creative correspondence as it is.
- Self-perceived · Real-time **chat** – live video conferencing or audio conferencing

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- Auxilary resources, either unified or links to external resources. Typically prop-up learning or creative correspondence as it is.
- Self-perceived quizzes or correlative tools usually count spontaneously
- Formal appraisal proposes, such as studies, articles proposal, or unveiling of the expected scheme. Now customarily incorporate some elements to prop-up joint-review
- Support communications, including email, threaded conference, bull session, Twitter and other social media, at times with the instructor or auxiliary assisting as coordinator. More components include wikis, blogs, *Really Simple Syndication* and 3D virtual instructional environments.



- Links to outside sources –an avenue to all other online learning spaces are linked via the online classes.
- Management of entitlement for teachers, their auxiliaries, course personnel, and learners
- ·confirmation and information as requisite for educational Management and excellent_defined
- licencing devices for producing the required records by the teachers and, normal, assent by the trainees.

Benefits of Virtual Learning Environment

The following are the benefits of a virtual learning environment as put by online Wikipedia (2019)

- Budget the time of academic staff and the cost of education.
- promote the launching of online classes by teachers disregarding web development knowledge.
- make available pedagogy to students in an adjustable manner for students with varied time and location restrictions.
- come up with instructions similar to the latest web-based bearing of learners.
- expedite the sharing of information among varying seats of learning
- impart for the remodel of usual learning materials amidst diverse courses.
- Integration of student learning results into school data structures.
- impart the ability to implement different courses to several learners

Conclusion

Students have been the consumers of information in the past without producing or creating content. At the same time, yesterday's teaching and learning styles no longer apply in today's digital and technology-based world. Therefore, 21st-century teachers require a philosophical shift with the adoption of technology and more learner approaches as an alternative or supplement to outcome-based teaching. Innovative thinking pedagogy, virtual learning resource and environment are to be adopted by 21st-century teachers to improve their experiences. Thus, innovation and relative, teamwork and collaboration must be the central component of the learning programme. In order words, a "new pedagogy" is needed.



Recommendations

The world in the 21st century has changed in every aspect of life. The development of technology encourages people to change their habits until it can be said that humans cannot live without the help of technology. Therefore, this paper recommends:

- Provision of adequate ICT facilities.
- Provision of the fund by concerned authorities to acquire digital infrastructures to improve internet access.
- Training and re-training should be organized for teachers and students to use and incorporate technologies into teaching and learning.
- Provision of stable power.
- To fully embrace future pedagogy, 21st-century teachers must incorporate innovation and creativity in their classroom activities.
- There should be a well-organised evaluation scheme in the 21st-century teacher education scheme to improve the pedagogical approach.
- The 21st-century teacher should also master instruction methods and strategies to embrace future pedagogy.

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CHAPTER 47

THE NATIONAL POLICY OF EDUCATION, MOTIVATION, PRACTICE OF RECREATIONAL ACTIVITIES AND UNDERGRADUATES OF UNIVERSITIES IN KWARA-STATE, NIGERIA

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Abstract

This research work assessed the National Policy of Education, Motivation and Practice of Recreational Activities among Undergraduates of Universities in Kwara-State, Nigeria. To assess the role of awareness of the inclusion of recreation in the national policy of education, on motivation and participation among undergraduates of universities in Kwara state, Nigeria. The population of the study entails all undergraduates in Kwara State while 800 respondents were sampled through a multi-stage sampling procedure from three Universities.

A researcher-structured questionnaire validated by four experts was used for the study. The questionnaire was subjected to a reliability test through the test-retest method using Pearson's moment Correlation (PPMC) statistics where a 0.8 coefficient was obtained. Data was collected by the researcher with the support of research assistants. The data collected were subjected to statistical analysis of descriptive statistics involving frequency and percentage count for the analysis of the demographic characteristics while mean, standard deviation and standard error were computed for each of the items in the instrument to answer the research questions.

Hypotheses were tested using PPMC to determine the relationship between the awareness of the inclusion of recreational activities in the school program and the motivation of respondents to practice recreational activities (if awareness influences their practice or not). The hypothesis was tested at 0.05alpha level. The results of the analysis show that, (H_0 , cal. $r = 0.002 < p = 0.05$) and hypothesis was rejected.

Based on the findings it was concluded that there was a significant relationship between the awareness about the benefits and inclusion of recreational activities in the school program and recreational activities practices among undergraduates in universities in Kwara State, Nigeria. It was recommended that the entire members



of the school community should be informed of the provisions made in the school timetable for recreational sports activities to reactivate their strength and boost productivity.

Keywords: *National Policy of Education, Motivation, Recreational Activities, Undergraduates*

Introduction

It is a fact that recreational activities help in promoting health, well-being, and peaceful coexistence among communities. Therefore, recreational activities are agreed to enhance a healthy lifestyle. According to Ibraheem, Olaoye and Bello (2016), the promotion of recreational activities and physical exercises forms one of the main aspects of the education policy with recommendations on how Universities and other educational institutions should incorporate recreational activities into their programs. Notwithstanding these provisions, it is stated that the majority of undergraduates participate less in active recreation due to various constraints. The study of Ibraheem, Ajibua and Dominic (2018) revealed that University students usually prioritize participation in sedentary activities over engagement in active recreational activities which is assumed to be of more benefit. It was further noted by Bakinde, Olaitan, Ajadi, Talabi, Adebare, and Adebayo (2018) that male undergraduates participate more in recreational activities than their female counterparts and generally the turnout for recreational activities among undergraduates are generally low compared to their population.

Olaleye (2014) described recreation as any activity engaged in by individuals voluntarily in their leisure time concerning the norms of their given society. Recreation is an essential part of human life with different forms of activities which are decided by individual differences, culture, and choices. Recreation generally includes several kinds of activities such as arts, crafts and sports like Soccer, basketball, volleyball, table tennis, tennis, swimming, ludo, draft, and Ayo among others. All of these activities positively affect the wellness of participants. In Nigeria, almost every neighbourhood either engages in Soccer, table tennis or basketball or for recreation (Asakitikpi, 2018).

The main objective of recreation is to enable human beings to enjoy leisure time as an agent of refreshment and relaxation from exhaustion. For an individual to maintain good health and attain wellness he has to live a lifestyle of being physically active regularly, taking time for relaxation and managing stress effectively. Oyeyemi, Jidda and Babagana (2015) stated that wellness can be achieved through the cultivation of a physically active lifestyle habit which is developed on a daily up-roaring increase in the risk of non-communicable disease and overall health issues. The awareness of the populace should therefore be aroused to the fact that recreational



activities have been found to be effective in the prevention of most of these prevalent health issues.

Recreational activities have a solid space in the schooling program at all levels because of their importance in creating an avenue for the holistic development of man to fit well into his society. This is evidenced in the *National Policy on Education* (1977) and (2004) affirming that recreational activities and sports among other objectives under the philosophy of Nigerian Education should be adequately provided for in the school program and made accessible to all categories of students at all levels of education for its citizens with no discrimination of any sort.

Recreational activities are seen as essential commodities to the schooling program due to the relaxation, fun, motivation and satisfaction generated from participation in it. This has further led to the time-to-time change in the pattern of recreation and physical activities, sports and games in the curriculum proofing the understanding and awareness of the basic physical, psychological and social needs of the human towards developing the spirit of sportsmanship, fun and adventure. Alu and Gabi (2014) submitted that the joy, satisfaction and pleasure a baby derive from wriggling, kicking, and exploratory crawling prepares his body towards the increasing bodily skills of his childhood years and more sophisticated physical activities in the later parts of his life. It is further submitted that recreational activities are needed towards development from childhood to adulthood. Teachers and other scholars have recognised the importance of physical education, sports and games to the all-around development of students during their recreational, leisure or free time.

It is stated in the study of Chiu and Kayatn (2010) that awareness of the benefits of recreation posed as a motivator to participation wherein Motivation is found to be the largest contributor and determinant of the frequency and magnitude of active engagement in leisure time physical activity. The self-determination theory proposes that human motivation varies in the extent to which it is self-determined or controlled, this meaning that human beings are determined on what and what not to do based on factors that serve as motivators to them according to Kondic, Mandic, and Schiefter, (2013).

Motivation refers to the intensity and direction of behaviour. Motivational factors are presumed to impact the selective direction of behaviour (choice of one action over others), energizing of behaviour and regulation of behaviour. The most basic principle of SDT, when applied to leisure-time physical activity, is that they are both intrinsic, extrinsically and motivational. Teixeira, Carage, and Ryan, (2012) submitted that motivation distinguishes between intrinsic and extrinsic types of motivation regulating one's behaviour. Intrinsic motivation is a result of an individual's participation in a form of recreational activity for inherent satisfaction. Intrinsic motivation gives people internal joy, and satisfaction and is contented. Intrinsic motivation involves engaging in behaviour because people enjoy the process



and satisfaction from participating in it. In contrast, extrinsic motivation is when people participate in an activity to gain some external rewards.

Statement of the Problem

Participation in recreational activities during leisure time voluntarily to catch fun and relax is taken as a means of building health, refreshment and unwinding from the rigor of an academic workload. When undergraduate students are aware of recreation there will be a high level of practice and participation in recreational activities because they all will want to benefit from it but in the situation of low awareness, it leaves undergraduates unaware of the benefits and provisions made for recreation (Donatus, Eskay and Ezud, 2014).

The researcher observed that most undergraduates in Kwara State Universities lack the awareness of recreational activities, especially the inclusion of recreation in the school program and education policy and as a result less or no participation in recreational activities is noticed during the weekly university-wide recreational activities and sports program. This means that, despite the provision of facilities needed for recreation to strike a balance between curricular and extracurricular activities in the ivory towers, only a few students utilise these provisions.

Due to personal encounters and interactions of the researcher with some undergraduates where most undergraduates related that they were not aware of some programs and available facilities, it is noted that undergraduates have less awareness about the availability of recreational facilities, provision for recreational activities within the school program amidst other important facts about recreation.

It was observed that few undergraduates in Nigeria participate in one kind of recreational activity or the other during their leisure time but most tend not to participate because of the lack of awareness of its inclusion in the policy of education and less motivation due to this. Therefore, they channel all their time towards academic pursuits alone (Aniodo, Eskay and Ezeudu, 2012; Adegboyega, 2015). Given the findings by the previous researchers and the variables considered; a research gap has been identified and the need to research the national policy on education, motivation and practice of recreation among undergraduates in Kwara state is felt.

Objectives of the Study

The main objective of this study was to assess the level of awareness of the provisions for recreation in the National Policy on Education, Motivation and participation in



recreational activities among undergraduates of Universities in Kwara state, Nigeria. Specifically, the study will find out:

1. the awareness of the inclusion of recreational activities in the national policy of education (school programme) and practice among undergraduates of Universities in Kwara State, Nigeria;
2. how well does the awareness of the inclusion of recreation in the NPE motivate practice among undergraduates of Universities in Kwara State, Nigeria; and
3. the frequency of participation in recreational activities among undergraduates of Universities in Kwara State, Nigeria.

Research Questions

For this study, the following research questions were answered:

- (1) Are undergraduate students informed of the provision for recreational activities and practice in the school curriculum in Universities in Kwara state?
- (2) How frequently do undergraduates participate in recreational activities in Universities in Kwara State?

Research Hypotheses

The following Hypothesis was tested;

1. There is no significant relationship between awareness of the inclusion of recreational activities in the school programme and motivation for recreational practices of undergraduates of Universities in Kwara state.

Significance of the Study

The study assessed the level of awareness and practices of recreational activities among undergraduates of Universities in Kwara state. This study would be beneficial to:

1. Undergraduates: This study will create awareness for undergraduates on the general concept of recreation and further present the submissions of undergraduates to appropriate quarters to make provisions that will ensure they enjoy the benefits of recreational activities.
2. The school management: The study will help the school management understand the recreational needs of students. Recommendations from this study



would enhance positive consideration in the provision by the school management to enhance participation in recreational activities.

3. Policy makers: This study will assist the government ministries and agencies concerned about education, sports and youths' welfare in assessing the implementation of the policy of education related to sports and recreational activities in schools at the state and national levels and further help in the design of programs that are appropriate for undergraduates in relations to their peculiarities.
4. Researchers: This study would create and add to the body of existing awareness on recreation among undergraduate students while researchers in the field of recreation will find this work helpful in identifying areas where further study is needed in their field of study.
5. The entire member of public: suggestions made in this work that will boost information on the concept of recreation in universities, especially in Kwara State.

Methodology

Descriptive research of survey type was adopted for the study because it allows the researcher to elicit information from the sample and to compare the variables with each other. The population for the study consisted of all undergraduates of Universities in Kwara State, Nigeria with a target population of all students in, the 2018/2019 session excluding newly admitted students in these Universities. According to the Kwara State Bureau of Statistics, the total population of undergraduate students, in Kwara State is estimated to be 80,000 across all tertiary institutions. As of February 2019, the National University Commission (NUC) listed the University of Ilorin, Kwara State University, Landmark University, Crown-Hill University, Al-Hikmah University, and Summit University as the accredited universities in Kwara State. Multi-stage sampling technique was used for this study wherein stratified sampling technique was used to divide the population into Federal, State and Private Universities, Purposive sampling technique was used to select the single Federal and State Universities in the state while simple random sampling technique was used to select a Private University from the three accredited private Universities in the state, According to research advisor (2006) 776 is enough sample for a population of 75,000. Based on this guideline, the researcher decided to sample 800 respondents using a proportionate sampling technique to select respondents from the three Universities according to their proportion from the total population of all schools selected for the study. The breakdown of the sample is presented in the table below. Respondents were given questionnaires using an accidental sampling technique whereby research assistants distributed questionnaires to them on sight.

**Table 1:** Breakdown of Sample

S/N	Strata	Selected University	Total Population	Sample
1	Federal	University of Ilorin	44,919 (72.4%)	576 (72.4%)
2	State	Kwara State University	12,582 (20.2%)	160 (20.2%)
3	Private	Al-Hikmah University, Ilorin	4,564 (7.4%)	64 (7.4%)
	Total		62,065	800

Note: All populations are based on individual school records obtained from the Directorates of Academics for the 2018/2019 session

Research Instrument

The research instrument for this study was a researcher-structured questionnaire named Questionnaire of National Policy on Education, Motivation and Recreational Practice Among Undergraduates of universities in Kwara State Nigeria. The questionnaire was in three sections; A, B and C. Section A comprise items to obtain data on personal and demographic data of the respondent based on variables such as sex, and age While Section “B” consisted of 10 items on awareness of the benefits of recreation and inclusion of recreation in the school program and section C consisted of 5 items to gather information on recreational practices of undergraduates in Universities in Kwara State. The questionnaire was a modified four-point Likert scale of "Not True", "Rarely True", “Usually True” and “Always True” to gather responses for items on the Questionnaire.

Validity of the Instrument

The instrument was submitted for content validation to four experts in the Department of Human Kinetics, University of Ilorin, and Kwara State, Nigeria after which their observations, suggestions, and comments were used to improve the contents of the instrument. The final draft of the questionnaire after corrections was administered to the respondents.



Reliability of the Instrument

The reliability of an instrument is as important as its validity; it is through the reliability test of an instrument that its accuracy is measured through the precision or consistency of the result making it trustworthy. To determine the reliability of the instrument the researcher adopted the test-retest method whereby 20 copies of the questionnaire were administered to a group of respondents two times at the interval of two weeks among students of Kwara State polytechnic. The results of the administered questionnaire were correlated using Pearson's Product Moment Correlation (PPMC) at 0.05 alpha level and 0.65r was obtained

Procedure for Data Analysis

The data for this study were subjected to descriptive statistics of frequency count and percentage for the analysis of Section A which entails the demographic data of the respondents and answering research questions. Inferential statistics of Pearson's Product Moment Correlation Coefficient were used for the analysis of sections B and C to test the postulated hypotheses at 0.05 alpha level.

Demographic Characteristics of the Respondents

Based on the research instrument, the demographic characteristics of respondents are presented below. Then the results are presented and discussed.

Table 2: Demographic Characteristics of the Respondents

	Variable	Frequency	Percentage
Gender	Male	428	53.5
	Female	372	46.5
	Total	800	100.0
University	Unilorin	576	72.0
	Kwasu	160	20.0
	Al-Hikmah	64	8.0
	Total	800	100.0
Faculty	Education	145	18.1
	Art	143	17.9



	Social science	152	19.0
	Engineering	114	14.3
	Life science	82	10.3
	Communication science	82	10.3
	Management Science	82	10.3
	Total	800	100.0
Level	300	393	49.1
	400	293	36.6
	500	114	14.3
	Total	800	100.0
Religion	Christianity	224	28.0
	Islam	576	72.0
	Total	800	100.0
Ethnic	Hausa	80	10.0
	Yoruba	640	80.0
	Igbo	80	10.0
	Total	800	100.0

In Table 2 above; the demographic characteristics of the respondents show that most of the respondents were male 428(53.5%) of the respondents. The majority of respondents are students of the University of Ilorin with a total of 576(72%) respondents. Respondents were selected from the Faculty of Education, Art, Social-science, Engineering, Life Science, Communication Science and Management Science. Furthermore, table 2 shows that the majority of the respondents (393; 49.1%) were 300-level students. 576(72%) of the respondents are Muslim. According to demographic analysis, the Majority of the respondents (640; 80%) are Yoruba.

Results

Research Question One: Are undergraduate students aware of the provision for recreational activities in the school curriculum in Universities in Kwara state?



Table 3: The Analysis of responses to research questions on the awareness of the provision of recreational activities in the school programme among undergraduates

S/N	ITEMS	NT	RT	NR	UT	AT	PR	RT
1.	The school timetable gives no room for participation in recreational activities	89 (11.1%)	222 (27.8%)	311 (38.9%)	288 (36.0%)	201 (25.1%)	489 (61.1%)	800
2.	No student is recommended to participate in recreational activities	61 (7.6%)	68 (8.5%)	129 (16.1%)	295 (36.9%)	376 (47.0%)	671 (83.9%)	800
3.	The school does not monitor student's participation in recreational activities	61 (7.6%)	68 (8.5%)	129 (16.1%)	295 (36.9%)	376 (47.0%)	671 (83.9%)	800
4.	Recreational participation is not strictly monitored like major curricular engagements	48 (6.0%)	72 (9.0%)	120 (15.0%)	297 (37.1%)	383 (47.9%)	680 (85%)	800
5.	The school timetable does not make provision for engagement in recreational activities every week	48 (6.0%)	143 (17.9%)	191 (23.9%)	301 (37.6%)	308 (38.5%)	609 (76.1%)	800
	Total			880 (22.0%)			3120 (78%)	4000 100%

The analysis of item 1 in Table 3 reveals that 489(61.1%) of the respondents accepted the school timetable gives no room for participation in recreational activities. 671(83.9%) of the respondents also agreed that no student is recommended to participate in recreational activities, the school does not monitor students'



participation in recreational activities. Also, 680(85%) of the respondents agreed that recreational participation is not strictly monitored like major curricular engagements. The table also revealed that 609(76.1%) of the respondents agreed that the school timetable does not make provision for engagement in recreational activities every week. The overall results of the items analysis in the above table show that the majority of the responses (3120; 78%) were in favour of the items presented in the table above, showing a low level of awareness of the inclusion of recreational activities in the school program, while 880 (22%) of the respondents displayed awareness on the inclusion of recreational activities in the school program. This means there is a low level of awareness about the inclusion of recreational activities in the school program among undergraduates of Universities in Kwara state.

Research Question Two: How frequently do undergraduates participate in recreational activities in public Universities in Kwara State?

Table 4: The Analysis of responses to research questions on the frequency of participation in recreational activities among undergraduates

S/N	ITEMS	N	R	NR	O	A	PR	RT
1.	I engage in indoor recreational activities such as board games, squash	112 (14.0%)	176 (22.0%)	288 (36.0%)	197 (24.6%)	315 (39.4%)	512 (64.0%)	800
2.	I engage in outdoor trails such as mountain climbing, hunting, swimming, fishing	224 (28.0%)	315 (39.4%)	539 (67.4%)	89 (11.1%)	172 (21.5%)	261 (32.6%)	800
3.	I engage in passive activities such as internet surfing,	112 (14.0%)	176 (22.0%)	288 (36.0%)	152 (19.0%)	360 (45.0%)	512 (64.0%)	800



	listening to music							
4.	I engage in active recreational activities such as jogging, cycling, gymnastics	200 (25.0%)	283 (35.4%)	483 (60.4%)	140 (17.5%)	177 (22.1%)	317 (39.6%)	800
5.	I engage in group recreational activities such as team football, volleyball	177 (22.1%)	112 (14.0%)	289 (36.1%)	312 (39.0%)	199 (24.9%)	511 (63.9%)	800
	Total			1887 (47.2%)			2113 (52.8%)	4000 100%

The analysis of item 1 in Table 4 revealed that 512(64%) of the respondents participate more frequently in indoor recreational activities. 539(67.4%) of the respondents participate less frequently in outdoor recreational activities, and 512(64%) of the respondents participate frequently in passive recreational activities. Furthermore, 483(60.4%) of the respondents participate less frequently in active recreational activities. The table also revealed that 511(63.9%) of the respondents participated more frequently in team recreational activities. The overall results of the items analysis in the above table show that the majority of the responses (2113; 52.8%) were in favour of the items presented in the table above, showing a high frequency of participation in recreational activities, while 1887 (47.2%) of the respondents displayed low frequency of participation in recreational activities. This means there is a high frequency of participation in recreational activities among undergraduates of Universities in Kwara state.

Hypothesis Testing

HO1: There is no significant relationship between awareness of the inclusion of recreational activities in the school program and recreational practices of undergraduates of Universities in Kwara State.



Table 5: Correlation Analysis of the relationship between awareness of the inclusion of recreational activities in the school program and recreational practices of undergraduates of Universities in Kwara State

Variables	N	Mean	SD	df	Cal. r-value	Sig. Decision
Awareness of the inclusion of recreational activities in the school program	800	16.22	2.733			
				798	0.400	0.002 H ₀ Rejected
The practice of recreational activities	800	18.23	3.332			

Table 5 reveals that the calculated r-value of Pearson's of 0.400 with a p-value of 0.05alpha level and at 798 degrees of freedom (calculated sig. 0.002) was less than the p.value (0.05). Thus, the null hypothesis was rejected. Hence, there was a significant relationship between the awareness of the inclusion of recreational activities in the school program and recreational activities practice among undergraduates of Universities in Kwara State.

Summary of the Findings

This study assessed the relationship between awareness and practice of recreational activities among undergraduates of Universities in Kwara State in Nigeria.

- i. Awareness of the inclusion of recreational activities in the school program was low among the undergraduates of Universities in Kwara State.
- ii. Participation in recreational activities was relatively high among the undergraduates of Universities in Kwara State.
- iii. Awareness of the inclusion of recreational activities motivated participation in recreational programs among undergraduates of universities in Kwara State.



Discussion

H0¹ shows that there is a significant relationship between the awareness of the inclusion of recreational activities in the school program and recreational activities practice among undergraduates of Universities in Kwara State. The findings in Table 4 are the submission of Alu and Gabi (2014) which reiterated the essence of creating awareness of the need for provisions towards recreation in schools to create a ground for the holistic development of the student. The administration of schools must look into the recreational habit of students in such a way that it becomes effective in curbing social vices on campuses. The role of recreation cannot be underemphasized in curbing youth restiveness and modelling the lifestyles of youths. Recreational activities are seen as essential commodities to the schooling program due to the relaxation, fun, motivation and satisfaction generated from participation in it. This has further led to the time-to-time change in the pattern of recreation and physical activities, sports and games in the curriculum proofing the understanding and awareness of the basic physical, psychological and social needs of the human towards developing the spirit of sportsmanship, fun and adventure. It is evidenced in the National Policy on Education (1977) and (2004) that recreational activities are one of the most essential areas of attention due to the Nigerian educational philosophy which is aimed at developing a whole man sound in the body, soul and spirit.

Conclusion

1. Awareness of the inclusion of recreational activities in the school program is relatively low among the undergraduates of Universities in Kwara State
2. Participation in school based recreational activities are relatively low among undergraduates of Universities in Kwara State.
3. Awareness of the inclusion of recreational activities in the school program leads to motivation towards the practice of recreational activities among undergraduates of Universities in Kwara State, Nigeria.

Recommendations

1. The school management should partner with students in the department of human kinetics and the school sport directorate to create awareness on the inclusion and objectives of the inclusion of recreation in the school programme.
2. The management of the school should ensure strict adherence to the weekly schedule for sports and recreational activities by ensuring that no lecturer fixes lectures within the stipulated time and that other University activities do not



interfere with the provisions made in the school timetable for recreational sports activities to reactivate their strength and boost productivity.

3. Recreation researchers should design programs that will motivate undergraduates to participate in recreational activities.

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CHAPTER 48

THE ROLE OF STUDY HABITS AND TEACHER-STUDENT RELATIONSHIPS IN PREDICTING ACADEMIC ADJUSTMENT AMONG HIGH ABILITY LEARNERS IN NIGERIA

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Abstract

Little research is available on the factors contributing to academic adjustment among high ability learners in Sub-Saharan Africa. The aim of this study is to examine the role of study habits and teacher-student relationships in predicting academic adjustment among high ability learners in secondary schools. This study was based on data collected using a multistage sampling technique from twelve secondary schools across southwest Nigeria. A total of 165 senior secondary school students were selected after screening for intelligence using Slosson's Intelligence Test. Participants completed the Academic Adjustment, Study Habit, and Teacher-student Relationship scales. A multiple regressions analysis comprising study habits and teacher-student relationships was carried out to predict academic adjustment. The results showed positive and significant relationships between academic adjustment and study habits ($R = 0.44$) as well as with teacher-student relationship ($R = 0.41$). Study habits contributed more positively ($B = 0.339, p < 0.001$) to the prediction of academic adjustment compared to teacher-student relationships ($B = 0.290, p < 0.001$). Together, these variables accounted for 25.8% of the variance in academic adjustment. These results indicate that high ability learners who cultivate effective study habits and good relationships with their teachers are more likely to be better adjusted.

Keywords: *High ability learners, Study habits, Teacher-students relationships, Academic adjustment*



Introduction

Some students may not have totally grasped what was taught for in the class but can master such content or topic during personal study period which is a positive way of adjusting. Study-habit is a student's ability to create and manage time and materials of learning to be able to adjust and complete academic demands successfully. It is defined by Crede and Kuneel (2008) as routines of personal study which involves but not restricted to frequency of study sessions, review of materials, self-testing of learned contents which is done in a more conducive environment. In the same vein, Kambiz and Varsha (2014) see study habits as learner's habitual ways of exercising and practicing their abilities for personal learning. It is the adopted way and manner a student plans his or her private reading, after classroom learning so as to make necessary adjustment needed for the mastery of the subject matter. A student that forms a study-habit consciously or unconsciously forms a habit which becomes part of the student depending on how efficient, effective and disciplined the student is to the habit of studying.

Generally, study-habit is classified into good and bad variations. Good study-habits occur as a result of practice and utilizing what approach that is most effective for a student. Bad study-habits on the other hand are negative or non-productive study habit that is undesirable and counter-productive to students' academic adjustment (John, 2010). In the same vein, study-habits can either be positive or negative depending on the type of study-habits adopted by the student. It is one factor that can be effectively utilized by high-ability learners to maximize their innate potentials if and when they are able to manage their time and resources effectively. A high-ability learner is in charge of creating and managing his or her personal studies thereby developing time management skills. Good and effective study-habit could reduce high-ability students' test anxiety, promotes confidence and students' ability to adjust where necessary. Ashish (2013) observed that poor and ineffective study-habit is believed to develop into academic difficulties, thereby causing poor academic achievement. The study-habits of high-ability students may be affected by lack of understandable reading materials, structure of the text (if not well organized to have a logical flow), low socio-economic status (parents not been able to afford some good but expensive books needed by their children).

Teachers on their part, have the responsibility of encouraging students to develop a good reading culture by encouraging students' visit to the library. Visiting the library gives a student the opportunity and access to a wide range of collections, different books to help understand a concern, ability to borrow books for personal use, and the library is the most conducive reading spot in the school environment. Reading period in the class time-table also helps in training the reading culture of students by way of creating a good time for personal studies. It is believed that visiting the library from early age have a positive impact on vocabulary and language growth, reading



development and academic adjustment. The class teacher can motivate and encourage the high-ability learners under his or her care to develop a personal reading time-table.

Parents who read at home will also influence their high-ability learners to imbibe good study-habits and then grow with it. Study periods at home should be void of distractions from the television set, computer games, mobile phones and so on. Everybody identifies what best suits him or her as some students prefer to read while listening to soft music, some may prefer reading on the bed or best to read at night or very early in the morning as the case may be.

The teacher can explain to the students the various benefits accrued from being consistent with an effective personal study-periods. Also, owing to the fact that students spend a lot of time in school and specifically with the teacher, students' ability to adjust academically can also depend on teacher-student relationship. The relationship through communication, support, care and encouragement from teachers to students is a vital factor that motivates students to learn effectively. A student that feels loved and valued by the teacher will want to work hard to make the teacher proud. This also strengthens the self-concept and self-efficacy in the student. Good and effective teacher-student relationships are important for the development and well-being of students (Roorda, Koomen, Spilt and Oort, 2011). The role played by teacher-student relationship on the self-concept of high-ability students can have continuing implications on their understanding and willingness to adjust academically where they lag behind (Sabol and Pinta, 2012). Trent and Slade's (2001) report shows adolescent boys' descriptions of their behaviours towards school are as a function of how they perceive quality of the relationships with their teachers, while poor relationships with their teachers are detrimental to their school engagement and adjustment.

Three aspects of teacher-student relationship are described as closeness, conflict and dependency. Closeness involves warm interactions and open communication. Conflict involves negativity and discord while dependency involves student's clinginess and propensity to over-rely on the teacher. Student-teacher closeness, conflict and dependency relates to students early academic and social-emotional adjustment to school (Liew, Chen and Hughes, 2010). A close and supportive relationship between teachers and high-ability students is related to higher classroom engagement, while the relationship that involves conflict and dependency are associated with grade repetition, peer rejection, negative school adjustment

A meta-analysis by Roorda, Koomen, Spilt and Oort (2011) revealed that some demographic characteristics of both students and teachers could have an impact on the association between the teacher and students and student's adjustment and outcome. Such as the quality of the relationship could be more influential for students from a lower socio-economic background while student-teacher conflict has an obvious negative impact on students with learning difficulties. As teachers are opportune to spend an incredible amount of time with students in class, it is their duty



to promote an inclination of their learning and they can do this by fostering a positive relationship between themselves and the students.

High-ability learners that feel a sense of control and security in the classroom tend to be more focused as they approach learning with enthusiasm and vigour. They become active participants in their own education (Maulana, Opdenakker, Stroet and Bosker, 2013). Once a student is in school to learn, an important and immediate step to helping them adjust and achieve academically is building and maintaining positive teacher-student relationship. Therefore, this study presents how school factors (study-habits and teacher-student relationship) predict academic adjustment among high-ability learners in secondary schools in South-West, Nigeria. The aims of this study are to explore the following: 1) whether study habits and teachers-student relationships are associated with academic adjustment, 2) how these factors can predict academic adjustment among high ability learners.

Materials and Methods

Study Design

The target population for this study was high ability senior secondary school students in public and private secondary schools in the southwest of Nigeria. This region is made up of six States: Ekiti, Lagos, Ogun, Ondo, Osun, and Oyo. Participants were selected using a multi-stage sampling technique as follows:

- Step 1: random selection of two local government areas (LGAs) in each State
- Step 2: random selection of two secondary schools (public and private) in each LGA.
- Step 3: purposive selection of participants from each school using the past records and cognitive ability as described below. This was supported with Slosson's Intelligence Test.

We followed teachers' recommendations on student's academic performance to purposively select potential participants. Further screening was made using a custom achievement test whereby participants with a score above 70% were considered. The achievement test comprised English Language and Mathematics. Items for the subjects were developed, using the current curriculum. There were twenty advanced questions each in mathematics and English Language. English questions covered areas such as Test of Oral, Lexis and Structures, Synonyms and Antonyms. Mathematics questions included logarithms, sets, and quadratic equations. Finally, Slosson's Intelligence Test was administered to evaluate the intelligence quotient of the learners. In total, 165 high ability students were investigated from twelve local government areas across southwest Nigeria. Out of this, there were 100 females and



65 males. Ninety four respondents were between 15 and 17 years, while 68 of them were aged 12 to 14 years.

Instrumentation for Data Collection

These instruments were used to gather data for the study:

Academic Adjustment Scale (AAS)

The Academic Adjustment Scale is a measure of high-ability learners' academic adjustment. This instrument consists of ten (10) items with a Likert-type response format ranging from Strongly Agree (SA) to Strongly Disagree (SD). The AAS has a reliability coefficient of 0.86.

Study Habits Scale (SHS)

The Study Habits Scale assessed the habits of study adopted by high-ability students. This scale consists of ten (10) items on student's ability to study personally. The four point Likert-type format response which ranges from SA to SD was used. The reliability coefficient of SHS is 0.72.

Teacher-student Relationship Scale (TSRS)

This scale of measurement was developed to capture high-ability learners' reflections on their level of engagement, well-being and teacher-student relationship such as students' attitude towards teacher and teachers' attitude towards them, students' perception of teachers' helpfulness, and perception of teachers' positive feedback. The scale consists of ten (10) items with a response format ranging from SA to SD. The reliability of TSRS is .82.

Results

Table 1 shows the correlation between school factors (study habits and teacher-student relationship) and academic adjustment. There was a positive and significant relationship between study habits and academic adjustment ($r = 0.440$, $p < 0.001$). Similarly, teacher-student relationship also correlated positively and significantly with academic adjustment of high ability learners and the correlation coefficient was ($r = 0.407$, $p < 0.001$). This suggests a positive association between school factors and academic adjustment.



Table 1: Correlation between academic adjustment, study habits and teacher-student relationship

	Academic adjustment	Study habit	Teacher-student Relationship
Academic adjustment	1		
Study habit	0.440 <0.001	1	
Teacher-student relationship	0.407 <0.001	0.347 <0.001	1

The p values are given below each Pearson correlation coefficient.

Table 2 shows the joint effect of the independent variables on academic adjustment among high ability learners. The composite contribution of these variables to academic adjustment was statistically significant ($F_{(2, 162)} = 14.487, p < 0.001$). The coefficient of regression was 0.517 and the adjusted R^2 was 0.258. This implies that study habits and teacher-student relationship could explain 25.8% of the variance in academic adjustment of high ability learners.

Table 2: Regressions model summary and goodness of fit of the prediction of academic adjustment

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	5.281	2	2.640	29.525	<0.001
Residual	14.487	162	0.089		
Total	19.768	164			

$R = 0.517$

$R^2 = 0.267$

Adjusted $R^2 = 0.258$

Std. Error = 0.2990

The relative contributions of each of study habits and teacher-student relationships to academic adjustment among high ability learners are shown in Table 3. Both variables had a significant contribution to adjustment. Study habits contributed more to



explaining adjustment ($B = 0.427$; $t = 4.728$; $p < 0.001$) compared with teacher-student relationships ($\beta = 0.339$; $t = 4.728$; $p < 0.05$).

Table 3: Relative Contributions of school factors to the academic adjustment of high ability learners

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	B		
(Constant)	1.426	0.276		5.173	<0.001
Study Habits	0.384	0.081	0.339	4.728	<0.001
Teacher-Student relationships	0.231	0.057	0.290	4.040	<0.001

Discussion

This study showed that both study habits and teacher-student relationships were positively related to the academic adjustment of high ability learners. The association between study habits and academic adjustment implies that high ability learners who have developed good and efficient study patterns are academically well adjusted compared to those with poor and inefficient study habits. So far, there is no link in the literature between study habits and academic adjustment among high ability learners. Previous works have focused on academic achievement, and this variable has been shown to be highly associated with study habit as shown in the study of Kaur and Pathania (2015), for example. Similarly, Ebele and Olofu (2017) observed in their study a significant relationship between students' study habits and their academic achievement. The participants in their study were not high ability learners as is the case in the present study.

Since there was a positive relationship between teacher-student relationships and academic adjustment in this study, it can be inferred that optimum academic adjustment among high ability learners is dependent on good teacher-student relationships. This implies that a favourable relationship between high ability learners and their teachers will go a long way in stimulating their learning behaviours and better prepare them to meet the demands and expectations of their learning environment. A cordial relationship between teachers and students will enable students' freedom to approach their teachers with any difficulties or needs that may arise. On the other hand, a negative teacher-student relationship may interfere with the innate abilities of high ability-students and hamper their academic adjustment.



The significant contribution of teacher-student relationships and study habits to the prediction of academic adjustment of high ability students corroborates the results of Rueger, Chen, Jenkins and Choe (2014) who reported that support from teachers was crucial for student's adjustment to the school environment. Similarly, in their investigation of the effects of the quality of teacher-student relationships on academic adjustment, Longobardi, Prino, Marengo, and Settanni (2016) also found that the level of closeness between students and teacher significantly predicted academic adjustment of students.

When taken separately, the relative contributions of study habits and teacher-student relationship were significant in the prediction of academic adjustment of high ability learners in South-West Nigeria. No previous studies were found in literature to support or refute this finding.

Conclusion

This study established that study habits and teacher-student relationships influence the academic adjustment of high ability students. Study habits played an important role in the prediction of academic adjustment among high ability learners, and as such, high abilities learners who have strong and effective personal study time and relationships with their teachers are likely to be better adjusted. These findings therefore have some implications for teachers, parents, psychologists, special educators, school administrators, school counsellors and the government. Teachers of high ability learners should be aware of and understand the contributions of the studied variables to the academic adjustment of their students. It would be therefore necessary to expose them to this knowledge through seminars, workshops, conferences and trainings as this will help further enlighten them on how to cater for the peculiar needs of these students.

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CHAPTER 49

MIXED MODE OF INSTRUCTION AND TEACHING PRODUCTIVITY OF LECTURERS IN A UNIVERSITY OF EDUCATION

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Ijanikin with a campus @ Epe

Abstract

The study investigated the impact of mixed mode of instruction on the teaching productivity of lecturers in university of education in Lagos State. Descriptive research design was adopted for the study. A sample of 175 male and 125 female lecturers was drawn using stratified random sampling technique out of the total population of 385 male and 210 female lecturers. Also, four colleges were drawn from seven colleges using simple random sampling procedure. The study developed two set of questionnaires tagged 'Teaching Productivity of Lecturers Questionnaire (TPOLO)' and 'Mixed Mode of Instruction Questionnaire (MMOIQ)' with a reliability index of 0.82 and 0.76 respectively. The null hypotheses developed for the study were tested at 0.05 level of significance. The research questions were analysed using frequency distribution of means and standard deviation, while the hypotheses formulated were tested with Pearson Product Moment Correlation and z-test. The findings showed that there is significant relationship between mixed mode of instruction and teaching productivity of lecturers. The finding further revealed that gender has no significance impact on mixed mode of instruction in the teaching process. The study concluded that mixed mode of instruction enhances productivity of lecturers irrespective of gender. The study recommended that management should engage the lecturers in persistent trainings and workshops to boost their knowledge in Computer Assisted Instruction and develop the information technology infrastructure to allow unhindered internet connectivity to improve the teaching productivity of lecturers.

Keywords: *Instruction, Mixed mode of instruction, Productivity, Teaching productivity*



Introduction

Lecturers are indispensable to the survival and growth of any higher institution. Gultom (2021) asserted that, lecturers are one of the personnel in the organization of higher educational institution. They are key factors in the achievement of the objectives of higher institution which is hinged on the advancement of knowledge creation and sharing. They are expected to perform three primary roles of teaching, research and community services. The lecturers are usually the custodian and facilitator of learning processes in the tertiary institutions. Jabbar, Hussin and Nazil (2020) noted that the success of any educational system depends upon the involvement, efforts and the contribution made by lecturers or academic staff. So, the existence of lecturers in tertiary institutions is very germane and no institution can do without them.

Productivity according to Babalola (2003) is the ratio of goods and services to the input production ratio. Wilson (2005) saw productivity as the actual ratio of input to output of any work in the organization. Productivity can also be said to mean production output per labour hours. At a workplace level, productivity is influenced by factors such as technology, market forces etc. including the input of the individual worker. Productivity is concerned with the process of achieving the ultimate goals of the organization in terms of processing the input to reflect the expected output of the system (Armstrong, 2001).

In educational system, productivity refers to the ratio between the total educational outputs and the resource inputs utilized in the production process, Ejiogu (1997). It is a measure of how well available resources such as finance, human, materials, informational and other physical resources are utilized to realize specific and desirable results. Productivity is the relationship between output and any other associated inputs measured in real term (Fadipe and Oyedele, 2000). Marsh and Hattie (2002) posited that lecturers' productivity could be measured based on defined responsibilities which are teaching (transmission of knowledge), research (advancement of knowledge) and community service (application of knowledge). However, the researchers acknowledged that within much of the academy, a value hierarchy exists in which research and scholarships are at the top of the pyramid, followed by teaching and then community service. There are numerous criteria for measuring the productivity of the education process and these criteria have been divided into: teaching, research and community service, been brought out by different studies (Mulford, Kendall and Kendall, 2004; Griffith, 2004). Edun (2005) posited that measuring of staff productivity is challenging since it is a product of socio-economic, psychological and environmental factors.

Recently, lecturers' job productivity in terms of teaching and learning processes has assumed another dimension through mixed method of instruction or blended learning mechanism which connotes the combining of traditional face to face



and online environments to occupy the learners and making learning a worthwhile exercise beyond classroom atmosphere. It is a unification of traditional method of teaching and online system. The conventional method and the online systems have their areas of strengths and weaknesses. The areas of strengths are explored to develop a new method of instruction called blended learning. Obadara (2021) suggested that it is better to mix the strengths of both learning environments to develop a new method of delivery called blended learning or mixed mode of learning. This mode of instruction assumes different nomenclature in different educational institution throughout the world and the usage depends on the suitability and availability of infrastructure. It is referred to as hybrid learning, blended learning, distributed learning, open and flexible learning. The mixed mode of instruction is the type of instructional method that involves both face to face classroom style instruction as well as the use of online methods. Garrison and Vaughan (2008) noted that mixed mode of instruction is the use of traditional classroom teaching methods together with the use of online learning for the same students studying the same contents. It is usually a practice of providing instruction and learning experiences through some combination of both face to face classrooms and technology mediated learning. Kim (2013) noted that mixed mode of instruction has an arbitrary nature as expressed in its definition; combining instructional modalities, combining instructional methods and combining online and face to face instruction.

This study focused on Lagos State University of Education, Oto/Ijanikin with a campus at Epe. The University came into being as a result of unification of former Adeniran Ogunsanya College of Education and Micheal Otedola College of Education (MOCPED). The main campus of this institution is located at Oto/Ijanikin with a campus at Noforija, Epe. LASUED was not established to add to the catalogue of universities dotting the higher educational landscape of Nigeria. It is a teacher education institution established simply to meet a felt need for a university that will make healthy difference in addressing the educational needs of Lagosians and Nigerians at large.

The lecturers in the campuses must be available to teach both the undergraduate students and extant Nigerian Certificate in Education students in both campuses till the final phasing out of the extant programme in the next two years. Considering the huge number of students undergoing the two different programs in the institution, adoption of mixed method of instruction will be appropriate for effective teaching and learning. This study is therefore instituted to examine mixed mode of instruction on the teaching productivity of lecturers in Lagos State University of Education.



Purpose of the Study

The purpose of this study is to empirically establish the relationship between mixed mode of instruction and teaching productivity of lecturers in Lagos State University of Education.

Research Question

What is the difference in the teaching productivity of lecturers before and after the adoption of mixed mode of instruction?

Research Hypotheses

The following hypotheses were developed and tested to find solution to the problems under investigation.

H0₁: There is no significant relationship between mixed mode of instruction and teaching productivity of lecturers in Lagos State University of Education

H0₂: There is no significant mean difference in the mixed mode of instruction and teaching productivity of lecturers by gender in Lagos State University of Education

Methodology

The study investigated the impact of mixed mode of instruction on the teaching productivity of lecturers in university of education in Lagos State. Descriptive research design was adopted for the study. A sample of 175 male and 125 female lecturers was drawn using stratified random sampling technique out of the total population of 385 male and 210 female lecturers. Also, four colleges were drawn from seven colleges using simple random sampling procedure. The study developed two set of questionnaires tagged 'Teaching Productivity of Lecturers Questionnaire (TPOLQ)' and 'Mixed Mode Instruction (MMOIQ)' with a reliability index of 0.82 and 0.76 respectively. The research questions were analyzed using frequency distribution of means, standard deviation and percentages, while inferential statistics such as Pearson Product Moment Correlation and z-test and the hypotheses formulated would be tested at 0.05 level of significance.



Literature Review

Concept of Productivity

Lecturers all over the world are faced with constant pressure to publish their work in order to gain recognition both internationally and locally for their scholarship (Haliso and Toyosi, 2022). This recognition is achieved through productivity in teaching, research and community service. A lecturer that is unproductive is termed to be sinking and not swimming in academic activities. Productivity simply means producing more from the same level of input with the objective of expanding the volume of output. It is the efficiency with which lecturers perform their multiple responsibilities of learning (product of teaching), knowledge (product of research), institutional community and professional activities (the product of shared governance, community service and professional activities). A distinction should therefore be made between the concepts of productivity and efficiency as they are being misinterpreted, although, they look similar. Efficiency connotes spending less while producing the same level of output. Emunemu and Isiku (2011) in their study explained that efficiency is more concerned with the internal cost of production process, whereas, productivity pays attention more to output and could best be described as output per unit of measured input. In this process, input should be held constant while output is allowed to vary.

Ojedele (2000) asserted that the measure of productivity in educational institutions include both visible and invisible factors which includes teaching personnel, instructional materials, hours at work and other internal and external school factors which are inputs in the educational system,, used in the teaching-learning process and the quality of outputs of the system in terms of their examination grades and the numbers of years spent. This is corroborated by Adu (2015) that, productivity in the education sector can be taken as a measure of the success of operations of activities that will lead to the realization of the goals and objectives of the sector in the economy as it applies to other forms of business or corporate organization.

Ayeni and Akinola (2020) observed productivity in Education as the rate at which educational objectives are achieved putting into consideration the input, process and output phases of Education. According to Ifenaike and Mohammed (2022) in their study on organizational communication and academic staff productivity in Lagos State Public Universities, found that effective communication in an organization is crucial. It is through this that members of staff can perform their duties and achieve the organizational goals and objectives, thereby leading to productivity. Productivity is also seen as the degree of efficiency and effectiveness with which an individual contributes to the achievement of the set objectives (Akinloye, 2013). In higher institutions for instance, the available resources are utilized by the lecturers and the management to realize the goals of the institution.



Tijani (2015) conducted a study on occupational stress and productivity in Kwara State owned tertiary institutions with a target population of all the lecturers in the six state owned tertiary institutions using descriptive research design. Proportional sampling technique was used to select 500 respondents while stratified random sampling method was adopted to select four out of six universities. The three hypotheses formulated were tested using Pearson Product Moment correlation. The study found a significant relationship between occupational stress and lecturers' productivity. The study recommended more instructional facilities be provided for the lecturers.

Lecturer productivity is the ability to bring about high and consistent learning gains in all students taught across all courses or subject areas for which a lecturer is responsible and consistent in research and community service. Lecturers' productivity according to Kaniki (2003) is the efficiency with which lecturers perform their multiple responsibilities of learning (product of teaching), knowledge and scholarship (the product of research and other scholarly activities) institutional, community and professional well-being (the products of shared governance, community service and professional activities) ensuring that academic productivity is critical for survival in today's highly competitive university environment.

Mixed Mode of Instruction

Mixed method of instruction is an integration of traditional method of teaching and online mode. 'Mixed mode of instruction' 'blended learning', 'flipped classroom', 'hybrid', 'on-line classroom' 'face-to-face' are terms which are frequently used to refer to the interwoven conveyance of electronically delivered and in-class learning modalities (Dziuban, Graham, Moskal, Norberg and Sicilia, 2012). Osguthorpe and Graham (2003) emphasized six objectives of blended learning design as: pedagogical richness, access to knowledge, social interaction, personal agency, cost effectiveness, and ease of revision. Birman (2014) in his study found that blended learning increased teachers' skills, knowledge and leads to prompt change in the classroom practice. A similar study conducted by Belland, Burdo and Gu (2015), recommended that blended learning contributed significantly to professional development.

Akpan and Aminikpo (2017) cited in Obadara (2021), classified blended learning generally into five models namely: Station-Rotation Model, Laboratory-Rotation Model, Flex Model, Self-blend Model, and the Flipped Classroom Model. The researches stated that the station-rotation model gives students the opportunities to rotate around or between a given stations.

A study was conducted on blending learning behavior and university students' academic performance in Thailand with a sample size of 181 students from 13 different courses offered at the university. A cross-sectional design was employed by



extracting data from the learning management system of the study site and t-test, ANOVA, and multiple regressions were used for the analysis. The results indicated that there is a weak relationship between blended learning behaviour and academic performance. Absences were significant but tardiest and click use of the learning management system were not significant. This implies that benefits of blended learning are found in other ways than in their relationship with academic performance (Darrin, 2018). McConnel (2001) and Bamidele (2003) explained in their study that in recent years, like never before, the reward or promotion of lecturers has come to be based on the amount and quality of their work papers presented in conferences, articles published in referred and indexed journals and in national and international books published by renowned publishers. Consequently, lecturers have come to recognize the importance of self-renewal in this age of knowledge economy and the internet.

Obadara (2021) conducted a study on the exploration of blended learning and university students' academic performance. The study adopted quasi-experimental design with a sample of 84 three hundred level (300) students of the department of Educational Management in Tai Solarin University of Education, Ijebu Ode, Ogun State, Nigeria was drawn using purposive sampling technique. The sample was divided into two study groups of 42 students in each group; the two groups were randomly assigned to be treated differently as experimental group (blended e-learning group) environment and control group (traditional face-to-face teaching approach). The pre-test was administered on both groups after all essential topics were taught, post-test was also given to both groups. The test scores were collated and subjected to statistical analysis to determine the level of performance of the two groups in the course (EDM316). Analysis of Covariance (ANCOVA) was used to determine the main and interaction effects of the variables of the study while the hypotheses formulated were tested at 0.05 level of significant. The finding revealed a significant main effect of treatment (blended learning approach) on undergraduate students' academic performance. The study also recorded difference between experimental and control group.

Presentation of Results

The results of the study are presented according to the research question raised and the hypotheses formulated.

Research question: What is the productivity level of lecturers before and during the application of mixed mode of instruction?



Table 1: Productivity of lecturers before and after the adoption of mixed mode of instruction

Variable	\bar{X}	SD
Productivity of lecturers before mixed mode of instruction	17.67	5.72
Productivity of lecturers after mixed mode of instruction	17.46	5.61

The table above showed the productivity of lecturers before and after the adoption of mixed mode of instruction. The mean score of productivity of lecturers before the adoption of mixed mode of instruction was $\bar{X} = 17.67$ while the standard deviation was 5.72. The mean score after the adoption of mixed mode of instruction was $\bar{X} = 17.46$ and the standard deviation was 5.61. The mean score of the productivity of lecturers before the adoption of mixed mode of instruction was higher than productivity of lecturers after the adoption of mixed mode of instruction (Before Adoption: $\bar{X} = 17.67$; After Adoption: $\bar{X} = 17.46$). However, the standard deviation was lower after the adoption of mixed mode of instruction than before the mixed mode of instruction (Before Adoption: SD = 5.72; After Adoption: SD = 5.61;). The finding therefore showed that productivity of lecturers was far better after the adoption of mixed mode of instruction in the university. The finding further revealed wide spread in the productivity of lecturers in the university as the lower the Standard Deviation, the better the productivity of lecturers.

H0₁: There is no significant relationship between mixed mode of instruction and teaching productivity of lecturers in Lagos State University of Education

Table 2: Relationship between mixed mode of instruction and teaching productivity of lecturers

		MMI	TPL
MMI	Pearson Correlation	1	.733**
	Sig. (2-tailed)		.000
	N	57	57
TPL	Pearson Correlation	.733**	1
	Sig. (2-tailed)	.000	
	N	57	57

** . Correlation is significant at the 0.01 level (2-tailed).



The table above showed a correlation analysis between mixed mode of instruction(MMI) and teaching productivity of lecturers(TPL). The mixed mode of Instruction and teaching productivity of lecturers is observed to be related. The relationship between the two is observed to be strong ($r = 0.733$) in the positive direction and the relationship is significant ($p = 0.000 < 0.05$). A strong relationship between MMI and TPL indicates a strong likelihood of a change of one variable when the change in another takes place. In addition, the decision is to reject the null hypothesis that there is no significant relationship between mixed mode of instruction and teaching productivity of lecturers in Lagos State University of Education.

H₀₂: There is no significant mean difference in teaching productivity of lecturers by gender with the adoption of mixed mode of instruction in Lagos State University of Education

Table 3: T-test analysis of the significant mean difference in teaching productivity of lecturers by gender with the adoption of mixed mode of instruction in Lagos State University of Education

MMI/ Gender	N	\bar{X}	SD	MD	DF	z-test	Sig	Remarks
Male	391	55.85	5.70	0.78	567	13.23	0.856	NS
Female	190	27.14	8.60					

Table 3 shows the independent sample z-test performed on the data, the findings indicated a higher level of teaching productivity among the Male lecturers ($\bar{X} = 55.85$, $SD = 5.70$) compared to that of Female lecturers ($\bar{X} = 27.14$, $SD = 8.60$). The size of the difference between the mean scores is 28.71. The significant P-value for the z-test is 0.856 and this is more than 0.05 level of significant ($0.856 > 0.05$). Based on the above, it is therefore concluded that there is no significant mean difference in teaching productivity of lecturers by gender with the adoption of mixed mode of instruction in Lagos State University of Education. The researchers therefore did not reject the null hypothesis which states there is no significant mean difference in teaching productivity of lecturers by gender with the adoption of mixed mode of instruction in Lagos State University of Education.

Discussion of Findings

The finding of the research question reveals that the teaching productivity of lecturers increased after the adoption of the mixed mode of instruction in the university in terms of students' academic performances in various courses, attendance and presentation



of courses at conferences and prompt response to administrative issues assigned to them. The finding of this study lends credence to the study by Darrin (2018) that expressed that the benefits of blended learning are found in other ways than in their relationship with academic performance. This study also corroborated the study conducted by Sakamo (2014) who found that functional procedures of the learning management system application and optimizing the collaboration between lecturers and information technology teams increase performance of lecturers.

The analysis of hypothesis 1 indicated strong relationship between mixed method of instruction or blended learning and teaching productivity of lecturers. The relationship tended towards positive direction. Hence, the hypothesis was rejected. This above finding buttressed the finding of the study conducted by Birman (2014) that blended learning increased teachers' skills, knowledge and leads to prompt change in the classroom practice. While Belland, Burdo and Gu (2015), recommended that blended learning contributed significantly to professional development and lecturers now recognised the importance of self-renewal and development in this era of information technology.

The result of the analysis of hypothesis 2 indicated that the researchers therefore failed to reject the null hypothesis which states there is no significant mean difference in teaching productivity of lecturers by gender with the adoption of mixed mode of instruction in Lagos State University of Education. The finding of this hypothesis should not be surprising as both male and female are given equal opportunities by the university management to use available information technology resources to improve their technology. The finding of this study is in tandem with the result of the study conducted by Haggerty (1994) and Balogun (1994) that expressed the view that, intelligence or hard work has no gender inclination, and in fact found that females tend to show more intrinsic interest than males in matter of life, education and people, although they did not see this from productivity perspectives.

Conclusion

Based on the findings of this study, it was concluded that mixed mode of instruction enhances teaching productivity of lecturers irrespective of gender as both lecturers have equal access to information technology resources.

Recommendation

From the conclusion above, it is therefore recommended that management of the university should frequently organise workshops and seminars on the availability and the use of mixed mode learning resources available in the university. The management should also provide state-of-the-Art information technology infrastructure to enable



the lecturers' conversant with the application of information technology that will enhance their teaching productivity. The entire university communication should also be informed through enlightenment programmes on the current realities of information technology in the university. Lecturers should be encouraged to attend both local and international conferences to broaden their knowledge on the use and application of new computer assisted instruction.

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CHAPTER 50

THE USE OF INNOVATIVE TEACHING STRATEGIES: A PARADIGM SHIFT IN ENGLISH LANGUAGE TEACHER PREPARATION

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Abstract

This paper highlights the importance of innovative strategies in English language classrooms. The paper also identifies areas of teaching deficiencies of teachers. Furthermore, the paper describes classroom and professional tools that will best equip English language teachers and explains, from the available literature, how PD can facilitate the effective use of ITS in English language and literature classrooms. Given the emerging trend in the classroom practices, the writers believe that teachers in today's modern classrooms need more training and professional support to improve their pedagogical knowledge and capacity. It was recommended, among others, that teachers should avail themselves of the opportunity for professional development by attending workshops and conferences, especially those that focus on the use of innovative strategies.

Keywords: *Innovative teaching strategies, English language teachers, Professional Development, Pedagogical knowledge*

Introduction

The importance of teaching the English Language in Nigeria's educational system must be balanced, considering the crucial roles that language plays in human



development, be it in promoting education, social activities and economic development. For instance, good performance in English Language at the senior secondary school examination is a pre-requisite to getting admission into tertiary institutions of learning and decent employment in the country.

In many countries where English serves as the second language (ESL) and foreign language (EFL), Literature teaching is embedded in the English Language curriculum at the junior secondary school level. Literature in English is an important subject in Nigeria's senior secondary school curriculum. The teaching and learning of Literature-in-English expose students to effectively use English, enhancing their proficiency (Fatimayin, 2022). Additionally, reading literary texts helps individuals identify, discover and enjoy their creative potential through the instrument of language. Studies have shown that literature teaching enhances and facilitates lifelong learning skills and strategies in other spheres of life (e.g. Ogunnaike, Adenuga and Olu-Dukiya, 2022).

Despite the crucial role played by the English Language in society, studies have shown that most senior secondary school students are yet to perform better in School Certificate Examination (Akintola and Fakeye, 2020; Okome, 2022). Students' performance continued to dwindle yearly (Fatimayin, 2022). It was also observed that the subject needs to be taught correctly in the classroom (Oladunjoye and Idowu, 2022; Olagunju, 2022). Considering the low performance of students in the Senior Secondary Certificate Examination (SSCE), the West African Examination Council (WAEC), through the Chief Examiners' Reports (2014, 2016 and 2018), observed that low quality of teaching and learning is responsible for the situation.

Lack of effective teaching due to teachers' ineffective strategies is a significant contributing factor to the performance gap among students. Olatunji, Bateye and Fakeye (2021) noted that English Language teachers are the pivot of students' good performance in the subject. To elevate the teaching of English, teachers at the senior secondary school level should get familiar with how to use research-based strategies capable of enhancing classroom teaching and student learning.

According to Oliver and Reschly (2007), effective teaching embedded the use of relevant instructional materials, a planned sequential lesson, student-centred strategies (e.g. peer tutoring, guided practice), and effective classroom interactions. Also, among the requirements for high-quality teaching in the 21st century is to produce teachers who are well grounded in pedagogy, especially teaching requirements that align with best practices in the world. Such practices include the Common Core State Standard (CCSS) for English Language Arts and Literacy, which, according to Greenfield Litman and Marple (2018), emphasises instruction that engages students in reading and reasoning with complex sources of information.

In line with the above requirements for high-quality teaching, strong emphasis is placed on the effective teaching of English and Literature-in-English and the ability



to develop in students critical thinking skills, communication skills, creativity skills and collaborative skills, which are essential to the attainment of 21st-century learning goals (Ijaiya, et al., 2011 and Orellus, 2019). The learning goals can be achieved by involving students in active learning using innovative teaching strategies.

The Concept of Innovation in the Teaching and Learning Process

Teaching and learning have moved from traditional to conventional teaching settings. The paradigm shift has been initiated using models that engage students in activities that support the growth of 21st-century learning skills and abilities. Thus, classroom practices require teachers' efforts to meet the core practices of modern teaching, which embeds creativity and innovation. Ahmad and Arshad (2018) referred to innovation in the classroom as any communication method that makes students become critical thinkers and knowledge seekers. For a teacher to be effective in this era of change, such an individual will look beyond the traditional method and develop novel ideas in line with the paradigm shift.

According to Greenfield, Litman and Marple (2018), innovative teaching transcends traditional content area instruction and shifts into instruction that engages students in active learning. The use of innovation in teaching aligned with the constructivist's view of teaching and learning. Innovative teaching supports students' learning through various instructional strategies, hands-on practices, and relevant instructional tools. Ahmad and Arshad (2018) noted that innovative teaching is a proactive approach to integrating new teaching strategies and methods into a classroom and solely involves creativity on the part of the teacher.

In teaching English Language, strategies such as visual and graphic organisers, peer tutoring, collaborative learning strategies, literature circles, inquiry-based strategies, and other constructivist-based strategies have been suggested for use, and have been used by researchers. Sharma (2017) explained that innovative applications should be evidence-based and applicable in real-life situations to allow the students to practice or gain the skills in a safe environment. The strategies listed above, and other constructivist strategies suggested by researchers as cited in Ahmad and Aishad (2018), are supported by knowledge about the learning process that has emerged from the research.



Evidence-based Research Strategies Used among English-Language Teachers

Several studies in the last two decades attested to the efficacy of many student-centred strategies. The studies revealed that there are various strategies that teachers can use innovatively in the classroom, which include cooperative strategies, problem-based strategies and inquiry-based strategies. Most of the studies also showed the importance of this innovative strategy in content area teaching, particularly in teaching English language and Literature-in-English.

For instance, some of the researchers cited in Oduwole and Fakeye (2022) (e.g. Alabi, 2008; Ogunyemi, 2014; Awolere, 2015 and Adedigba, 2016) experimented with instructional strategies which have been reported to enhance effective teaching of English Language. Similarly, Chen, Adelabu, Adaje and Vande-Guma (2022) reported in their findings that a cooperative learning strategy enhances achievement scores in students' reading comprehension. Additionally, Odua, Adelabu, Onekutu and Adaje (2022) found peer feedback strategies capable of helping students improve their writing ability and the content of their essays.

Further research has pointed to the fact that the teaching strategies that were found to be innovative in English Language classrooms (e.g. Literature circle, Inquiry-based strategies) are most effective for teaching Literature-in-English to students in the 21st century (Ezenandu, 2011; Alameddine and Ahwal, 2016; Norman 2021 and Olagunju, 2022). Ezenandu (2011) found Literature circles and Scaffolding Instructional Strategies to be helpful in enhancing students learning outcomes in Literature teaching. Alameddine and Ahawal (2016) found that using an inquiry-based strategy improved students' performances and critical thinking skills in prose literature teaching.

Despite the importance attached to the use of innovative teaching strategies in the classroom, Kolawole (2016) and Oduwole and Fakeye (2022) observed that most of these strategies are not actively used by secondary school teachers and that teachers still stay glued to their teacher dominated methods. The deficiencies found in the use of innovative teaching strategies by teachers were a result of poor dissemination of doctoral findings by postgraduate students (Kolawole, 2016), absence of regular professional development programmes (Wang and Zhao, 2012), inadequate pre-service training (Alberta Teachers' Association, 2018) to mention just a few.

Fakeye and Aiyede (2013) have explained in general terms that mastery of pedagogical content knowledge, instructional organisation, and questioning behaviour produce quality teaching and learning of the different aspects of the English Language. Given the above and the deficiencies found in English Language teachers' pedagogical skills in enacting innovative strategies, it was evident that the teachers



need more training and support to develop their pedagogical skills and to be able to master and use the skills.

Teachers' Pedagogical Needs and Support from Professional Bodies

Shulman (1987) identified teachers' Pedagogical Content Knowledge (PCK) as a central element in the knowledge base of teaching. Cited in Olatunji, Bateye and Fakeye (2021), PCK focuses on (i) the teacher's subject knowledge and (ii) the teacher's pedagogical knowledge. Consequently, this paper focuses on teachers' pedagogical knowledge due to deficiencies in classroom teachers' pedagogical skills. The paper intended to identify teachers' pedagogical needs and the best way to support and equip them.

Teachers' pedagogical needs include the useful and practical knowledge of using research-based instructional strategies to meet the demands of 21st-century learning. However, research has indicated that more than pre-service training or initial teacher preparation is needed and inadequate (Alberta Teachers Association, 2018). Most teacher education programmes are overtly theoretical. Most students need more innovative measures during teaching practice and seldom practice the skills acquired during teacher education in the actual classroom situations (National Comprehensive Centre for Teacher Quality, 2011). Most prospective teachers have several pedagogical challenges in the classroom. It was evidence that inadequate pre-service training affects teachers' capacity.

ATA (2018) indicated that teachers' basic needs are multiple and fundamental for pedagogical growth. However, despite concern for teaching quality in the 21st century, Ijaiya, Alabi and Fasasi (2011) found that inadequate knowledge base by teacher educators and ineffective teaching practice had a negative impact on the development of effective teaching skills by prospective teachers. Pre-service teachers ought to receive training to prepare lesson plans based on the use of new strategies and to demonstrate their use in the classroom. Also, emphasis should be placed on the programme for evaluation of trainees' fieldwork/practical teaching, and it should include an adequate number of months for field experiences on the use of innovative teaching strategies. The evaluation should be accompanied by innovation configuration (IC) guidelines to determine the extent to which teacher candidates apply the strategies.

Oliver and Reschly (2007) explained that teachers who have received minimal training in managing time and resources and in controlling student-centred activities may need help to enact innovative strategies in the classroom. Researchers have emphasised ongoing professional training to improve teachers' teaching quality in English Language classrooms. Ohia and Fadele (2020) reiterated that the journey from



being a novice teacher to becoming an expert would be quickened and made less stressful by planned continuing professional development programmes.

Most of the literature research developed in the last two decades (e.g. National, et al. [NRP], 2000, Jourdan, 2009, Ijaiya, Alabi and Fasasi, 2011, ATA, 2018) have moved from experiment to the preparation of teachers to teach strategies in line with constructivist principles. Jourdan (2009) argued that applying constructivist principles in language teacher education promotes a more critical and reflective stance of the 'received wisdom about best practices in language teaching. NRP (2000) considered teachers' preparation to teach strategies as the most significant development. ATA (2018) has committed to supporting the newest members through continued research and professional development initiatives such as the Beginning Teachers Conference (BTC).

Conclusion

Focusing on teachers' pedagogical needs and support from professional bodies is critically important, given the deficiencies in pre-service teachers' skills in enacting innovative strategies in actual classroom situations. Researchers, including Wang and Zhao (2012), have written about the importance of professional development of in-service English as a second language (ESL) teachers in education. The No Child Left Behind (NCLB) Act of 2001 set a criterion that teachers must participate in PD focusing on instructional strategies for teaching English Language. Teachers of English Language and Literature-in-English in Nigeria also need adequate professional development training and support programmes to meet students' need to learn in preparation for further education and work in the 21st century.

Recommendations

1. Pre-service teachers' initial training is crucial for student learning in the ESL context.
2. Administrators, teachers and teacher educator faculty should collectively participate in designing the required coursework, field experience, activities and support system to adequately address the needs and interests of teacher candidates and classroom teachers.
3. For improved pedagogical skills, emphasis should be placed on the programme of evaluation of prospective teachers' fieldwork/practical teaching, and it should include an adequate number of months for field experience and the use of innovation configuration guidelines to determine the extent of teacher candidate activities.



4. Researchers should access professional development programmes to improve teaching quality.
5. Helping teachers implement innovative teaching strategies in the classroom using various types of PD supports will require concerted efforts from all stakeholders. Thus, Government parastatals (e.g. Ministry of Education), school principals and cooperate bodies are to provide teachers with additional professional learning through the use of online teaching resources, attending Webinar online courses, seminars and conferences.

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CHAPTER 51

FAMILY BACKGROUND AND SELF CONCEPT AS CORRELATES OF ACADEMIC ADJUSTMENT OF STUDENTS WITH VISUAL IMPAIRMENT IN OSUN STATE, NIGERIA

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Abstract

The family background and self-concept of every student irrespective of their conditions plays an indispensable role in their academic adjustment. This paper therefore takes a look into family background and self-concept as correlates of academic adjustment of students with visual impairment using Osun state as case study. The objectives of the study is to identify the relationship that exist among family background, self-concept and academic adjustment of students with visual impairment, investigate the joint contributions of family background and self-concept to the academic adjustment of students with visual impairment and to examine the relative contributions of family background and self-concept to the academic adjustment of students with visual impairment. The findings shows that, the two independent variables has significant relationship with the dependent variable and that the joint contributions of family background and self-concept to the academic adjustment of students with visual impairment is also significant. It is also evident in the study that the relative contributions of the independent variables to the dependent variable was also significant. The study therefore recommends that, the family background of students with visual impairment should be a friendly and accommodating one that will give room for their acceptance coupled with the positive ideas towards themselves.

Keywords: Family background, Self-concept, Academic adjustment, Students, Visual impairment



Introduction

Adjustment is concerned with the level at which individual irrespective of their condition, status or background was able to cope and adapt to situations, event or task. It can be viewed in different perspectives which includes psychological, social, emotional, health, physical and academically. The academic aspect of the adjustment is the extent at which a student with or without impairment was able to cope, adapt and maintain balancing between his or her personal self and the academic task without being hurt or affected. Adjustment is the relationship between emotional life and body process. It deals with the way an individual adapts to his environment and demand of life. This includes how he relates to others in the community where he or she lives (interpersonal relationship) and how he copes with responsibilities and inner feeling on the other hand (intra-personal relationship) (Ogundipe, 2009).

A person living with visual impairment may have difficulty adjusting in many areas of life. Consequent upon visual loss, individuals with visual impairment suffer rejection and stigmatization both by parents and the society, this impact on their adjustment Komolafe (2016). Adjustment for persons with visual impairment has been described as changing self-efficacy and goals to include the realistic restrictions imposed by the impairment; in the process such persons develop new capabilities that are compatible with the new environment and explore whatever will lead to his comfort, this is recognize as social adjustment. Adjustment enjoys a wide spectrum, encompassing the aspects such as

Academic adjustment is the student's positive attitudes towards their academic work and goals and positive valuations of their academic environment (Baker and Siryke cited in Cohorn and Giuliano, 1999; Al-Qaisy, 2010). Academic adjustment includes student motivation to complete academic work, success in meeting academic requirements, academic efforts and satisfaction with academic environment (Baker and Siryke cited in Kyalo and Chumba, 2011).

It is a fact that the teaching and learning process among students with visual impairment is important especially in this century of sustainable development of quality education for all through the means of inclusive education for people with impairment and disability. This can be observed in the quest of the professionals, society, government, international bodies etc trying all possible means to make sure that students with visual impairment are not left out in acquiring a sound and quality education. Improvement in the teaching and learning process of students with visual impairment at any level of life is not just an indication that they are not been segregated and marginalized but that there are efficient and progressive work in molding and making the visual impaired child and as well help in the determination of the child's ability to live independently as individual and contribute to the progress of the development of the nation in general



The ability of an individual with visual impairment to adjust to situations, conditions or challenges that may arise as a result of their impairment depends on their level of acceptability, recognition and accommodation by their parents, family, peers and society. Among the invigorating factors that assist the persons with visual impairment to have good interpersonal relationship leads to good psychological adjustment include the active involvement of their parents in their daily exercise supported by their level of emotional intelligence and self-concept (Abodunrin and Komolafe, 2017).

Students vary in terms of intellectual or academic ability. While some are low in academic achievement, others are either average achievers in academics while some are high achievers in academics, the special gift that some students possess set them apart from their regular counterpart. Students who are visually impaired in a family who provide supervision and support, and who have aspirations for them, tend to increase the chances of their being successful students. In essence, the prevailing environment will either make or mar the psychological wellbeing of a child. Obani (2006) reported that every child will benefit psychologically from a loving home. In such a home the parents are ready to provide for social, psychological and academic needs of their children with visual impairment. Sociologist, educators and psychologists discovered that the home is the first school of the child/children and any child reared under adverse social condition is likely to have problem in academic achievement than children reared in more desirable circumstances. Nicholas and Chem (2001) affirmed that those from broken homes are likely to exhibit maladjusted behaviour at school or at home. In other words, children from broken homes or with parents having unhappy marriage are likely to develop the greatest incidence of maladjustment, while loving and caring homes are likely to rear well-academically sound children

Visual impairment is a condition of reduced visual performance that cannot be remedied by refractive correction (spectacles or contact lenses), surgery or medical methods (DeCarlo, Woo and Woo, 2006). Consequently, it results in functional limitations of the visual system that may be characterised by irreversible vision loss, restricted visual field and decreased contrast sensitivity, increased sensitivity to glare as well as decreased ability to perform activities of daily living, such as reading or writing (Kavitha, Manumali, Praveen and Heralgi, 2015). Corn and Lusk (2010) affirm that individuals with Visually Impairment have measurable vision, yet experience difficulties accomplishing visual tasks even with the use of refractive correction. Furthermore, these individuals are sometimes capable of enhancing their abilities to accomplish visual tasks with the use of compensatory low vision aids and/or environmental adjustments. Abodunrin and Abodunrin (2020) observed that the visually impaired are the group of people characterized by inefficiency in the organ of sight which hinders individual capability in performing various functions that requires the use of sight.



Family is the first school of the child and home environment is one of the most potential actors which influences a child's adjustment. Home provides an excellent opportunity for socialization by laying the foundation for physical, mental and social health of the child irrespective of their condition. All families do not have different culture and standard of life, so they differ in the ways of meeting the physical, emotional, psychological and mental needs of the children. The family provides facilities and varieties of stimulating experiences through one emotions which foster academic adjustment of their children in schools. Jaga, Basanitha and Mukhonadhyaya (2001) asserts the achievement of students depends on and significantly related to their family background. The factors like family structure, social status, economic status, residential background, parental aspiration and expectations, parental education and occupation, interpersonal relationship of family members and family discipline are some of the variables that influences the adjustment of students in school which consequently have positive impact on their achievement as a student. These does not exclude students with visual impairment because they all belongs to one family or the other.

Self-concept takes an important place in adolescence. Self-concept refers to the cognitive schemata people have about themselves (Nurmi, 1997). Growth and development occur in interaction with other people that are important to the students, such as parents, siblings, relatives, friends, and school personnel. During adolescence, youngsters change in the way they interact and relate to family and peers. Functional changes occur in family interactions because the young students begins to demand greater autonomy and an altered relationship with parents. Peers play an important role in studentss' emergence from family towards independence (Kaushik, 2006).

Self-concept refers to a student's perceptions of competence or adequacy in academic and nonacademic (e.g., social, behavioral, and athletic) domains and is best represented by a profile of self-perceptions across domains. As students with visual impairment transit from elementary level to high school, their self-concept gradually grows. Increasing freedom allows students with visual impairment greater opportunities to participate in activities in which they are competent and their abilities enable them to garner more support from others by behaving in more socially acceptable ways (Harter, 2005).

The development of a child's self-concept, when they have a visual impairment, follows similar steps to that of a sighted child, although the visual defect will influence this process. However, evidence shows that the lack of vision has a general effect on children visual impairment. Warren (1994) highlights the major roles that body image and language play in the case of these children.

Further analysis of the impact that stereotypes has on the self-concept revealed that people without vision often experience feelings of shame and inadequacy (Scott, 2009). Professionals in the field of visually impaired have suggested that attitudes of significant others, that is family and friends have the most significant impact on the



visually impaired individual's self-concept. Families with positive attitudes help the blind person maintain a positive outlook (Versluys, 2000 and Lukoff, 2002). It was also determined that the reactions of medical personnel have an impact on the adjustment process (Bauman and Yoder, 2006).

Clock-Clampert (2001) underlines the importance of a visually impaired child's self-concept: "The most fundamental aspect of the child with visual impairment is his self-concept. The manner in which the child learns to view himself has a tremendous impact on his psychological adjustment, future ambitions, accomplishments and personal happiness". Uttermohlen (2007) speaks of the risks that the students stage of life can represent for young people who are visually impaired, throughout their entire lives, people with a visual impairment have to deal with the challenge of how to reach a balance between the need for help and the need to regard themselves as competent, independent people and for others also to see them as such. During the adult stage of life, the process of integration into the labour market and the emotional facet of a person's life can be a determining factor in what they make of their lives.

This paper therefore takes a look into family background and self-concept as correlates of academic adjustment of students with visual impairment using Osun State as case study

Objectives of the Study

The objectives of the study is to

1. Identify the relationship that exist among family background, self-concept and academic adjustment of students with visual impairment,
2. Investigate the joint contributions of family background and self-concept to the academic adjustment of students with visual impairment and
3. Examine the relative contributions of family background and self-concept to the academic adjustment of students with visual impairment.

Research Questions

The following research question guides the study:

1. What is the relationship that exist among family background, self-concept and academic adjustment of students with visual impairment?
2. What is the joint contributions of family background and self-concept to the academic adjustment of students with visual impairment?



3. What is the relative contributions of family background and self-concept to the academic adjustment of students with visual impairment?

Methodology

This study utilizes survey research design, 80 samples were purposively selected from target population which includes male and female students with visual impairment. The data was collected using questionnaire methods which consist of the personal biodata of the respondents and three other scales which include home environment inventory, self-concept scale and student academic adjustment scale. The data collected was analysed using descriptive statistics of frequency count and Pearson product moment correlation and multiple regression analysis which was tested at 0.05 level of significance

Results

RQ1: What is the relationship that exist among family background, self-concept and academic adjustment of students with visual impairment?

Table 1: Inter-correlation Matrix of independents and dependent variables

Variable	Academic Adjustment	Family background	Self-concept
Academic Adjustment	1		
Family background, (P value)	.994** .000	1	
Self-concept (p value)	.984** .000	.986** .000	1
Mean	78.88	27.96	61.42
Standard Deviation	26.09	13.29	26.14

Table 1 shows that: there was a significant relationship between the independent variables (family background, self-concept) and the dependent variable (academic adjustment) of students with visual impairment. That is, Family background ($r = .994$, $N = 80$, $p < .05$), and Self-concept ($r = .984$, $N = 80$, $p < .05$), has significant relationship with academic adjustment. It implies that, there was a significant relationship among family background, self-concept and academic adjustment of students with visual impairment.



RQ2: What is the joint contributions of family background and self-concept to the academic adjustment of students with visual impairment?

Table 2: Summary of Regression Analysis of the combined prediction of family background and self-concept to the academic adjustment of students with visual impairment

.R	R Square	Adjusted R Square	Std. Error of the Estimate			
0.994	0.988	0.988	2.85481			
SUMMARY REGRESSION ANOVA						
	Sum of Square	Df	Mean Square	F	P	Remark
Regression	53174.442	2	26587.221	3262.261	0.000	Sig.
Residual	627.545	77	8.150			
Total	53801.987	79				

Table 2 shows there was a significant joint contributions of family background and self-concept to the academic adjustment of students with visual impairment. That is academic adjustment correlated positively with the independent variables (family background and self-concept). The table also shows a coefficient of multiple correlations (R) of 0.994 and a multiple R square of 0.988. This means that 98.8% (Adj. $R^2=0.988$) of the variance in the academic adjustment is accounted for by the independent variables, when taken together. The significance of joint contribution was tested at $p<0.05$ using the F- ratio at the degree of freedom ($df = 2/77$). The table also showed that the analysis of variance for the regression yielded a F-ratio of 3262.261. The above present is significant at 0.05 level.

RQ3: What is the relative contributions of family background and self-concept to the academic adjustment of students with visual impairment?



Table 3: Relative contribution of the independent variables to the dependent variables (Test of significance of the regression coefficients)

Variable	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Remark
	(B)	Std. Error	Beta			
Constant	134.323	.921	-	145.786	.000	-
Family background	1.710	.147	.871	11.609	.000	Sig.
Self-Concept	.124	.075	.245	5.659	.012	Sig.

Table 3 reveals there a significant relative contribution of the independent variables to the dependent variable, expressed as beta weights. The correlation coefficients of family background and self-concept to the academic adjustment of students with visual impairment. Using the standardized regression coefficient to determine the relative contributions of the independent variables. Family background ($\beta = 0.871$, $t = 11.609$, $p < 0.05$) indicates most potent contributor to the prediction, follow by Self-concept ($\beta = 0.245$, $t = 5.659$, $p < 0.05$), has a relative contribution to the academic adjustment of students with visual impairment. Implies that there is significant relative contributions of family background and self-concept to the academic adjustment of students with visual impairment

Discussion of Findings

The study reveals that there was a significant relationship among family background, self-concept and academic adjustment of students with visual impairment. The reason for this result was due to the fact that, a student who is visually impaired has an idea of the kind of person he or she is coupled with the fact that, he or she is visually impaired. Seeing himself or herself as someone that has to live a meaningful life increases their self-concept which has a connection with the family background they come from because a student who is visually impaired that comes from a family where love and affection is shown to him or her without discrimination, overprotection, or isolation will have a good academic adjustment in school and be able to himself or herself as part of the society. This was in line with the view of Johnson, Blum, and Cheng (2014) who asserts that, family background and self-concept play a significant role in the academic adjustment of students with visual impairment.

The study also shows that, there was a significant joint contributions of family background and self-concept to the academic adjustment of students with visual impairment. This was so because there are a lots of variables that determines good family background which include socio-economic status, parental education, harmonious relationship between both parents. So students with visual impairment



that comes from a good family background where all this quality are present will be motivated to have positive concept which prepares him or her for a well-adjusted life in his or her academics. This was supported with the view of Sirin (2005) who opined that, parental educational level is positively associated with academic adjustment. Students whose parent have higher level of education often have more access to educational resources, support and role models which can positively influence their academic adjustment. In the view of Reargdon, (2011) he buttressed that, student from higher socio-economic backgrounds tends to have better academic outcomes compared to their peers from lower socio-economic background. Economic advantages, such as access to quality schools, educational materials and extra curricular opportunities can contribute to better academic adjustment.

The study reveals that, there is significant relative contributions of family background and self-concept to the academic adjustment of students with visual impairment. These two variables are inseparable when it comes to the issues that concerns the academic adjustment of students with visual impairment. Because looking at it critically the first helps the other thereby leading to god academic adjustment of students with visual impairment. This was in line with the view of Duchnowski and Kutash, (2011) Fantuzzo, McWayne, Perry and Childs (2005) who maintained that, importance of parental involvement and support for students with disability including those with visual impairment. parental involvement such as providing assistance with homework, creating a conducive learning environment, and advocating for their child s needs has been linked to improved academic outcomes for students with disabilities. Shogron, Wenmeyer, and Palmer (2015) reported that, self-concept plays a crucial role in the academic adjustment of students with visual impairment. They stressed further that, a positive self-academic self-perception including beliefs in one's abilities and self-worth in an academic context can positively influence academic motivation and achievement. They maintained that, students with visual impairment who have a strong sense of their academic identity and believe in their capabilities are mre likely to engage actively in their education.

Conclusion

The study has establish the fact that, significant relationship exist among family background, self-concept and academic adjustment of students with visual impairment, it was also evident in the study that, the joint and relative contributions of family background and self-concept was also germane to the academic adjustment of students with visual impairment. Through it was shown in the study that the two variable has numerous impact on the academic adjustment of student with visual impairment.



Recommendations

The study therefore recommends that:

- The family background of students with visual impairment should be a friendly and accommodating one that will give room for their acceptance coupled with the positive ideas towards themselves.
- Educators, parents and policy makers should identify the strategies that will help in supporting students with visual impairment that comes from diverse family background and promote positive self-concept leading to an improved academic adjustment.

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CHAPTER 52

EFFECTS OF VIRTUAL LABORATORY ON CHEMISTRY STUDENTS' GENDER AND SCHOOL LOCATION IN QUANTITATIVE ANALYSIS IN COLLEGES OF EDUCATION, OYO STATE

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Abstract

Poor performance in practical aspect of Chemistry has been observed over years in Nigeria Colleges of Education. This was attributed to many problems faced by the teachers in which an alternative of using a virtual laboratory for teaching Chemistry practical for proper understanding is inevitable. This study investigated the “Effects of Virtual Laboratory on Chemistry Students’ Gender and School Location in Quantitative Analysis in Colleges of Education, Oyo State. A quasi-experimental design using 2x2x2 factorial matrix which involved pre-test, and post-test group design was employed. One hundred and thirty six (136) 100 Level NCE students’ were selected from two (2) State Colleges of Education in Oyo State. The Chemical Concept Achievement Test (CCAT) (KR20=0.80) was used for data collection. Three hypotheses were formulated at 0.05 level of significant and ANCOVA was used for data analysis. There is a significant main effect of virtual laboratory on students’ academic achievement in Chemistry ($F=672.192$ Sig=0.000 df= 136 $P<0.0$). Gender has no significant main effect on student's achievement in Chemistry ($F=0.002$, Sig=0.985, df= 135 $P<0.05$). There is a significant effect of school location on students’ achievement in Chemistry practical ($F=16.168$, Sig=0.00, df= 135 $P<0.05$). It was recommended among others that lecturers in Colleges of Education should be trained regularly through seminars, workshops, conferences and short and long term training on how to use virtual laboratory to improve their competence in teaching and lecture delivery.

Keywords: Virtual laboratory, Quantitative analysis, Gender, School location



Introduction

The importance of science and technology to man cannot be over emphasized since most courses and professions require a sound knowledge in it. It is essential that every child is given an opportunity to acquire at least the basic knowledge and processes of science. Science is recognized as the foundation of contemporary technological advancement throughout the world. The concept of science which has a central place and role can be described as systematic mental representation of the natural world; and this may correspond to observable entities like mammal or mountain, to unobservable entities like atom or gene (Kampourakis, 2018). The systematic organization of human knowledge for describing and comprehending nature might be seen as the ongoing goal of science. Science is the pursuit and application of knowledge and understanding of the natural and social world following a systematic methodology based on evidence (<https://sciencecouncil.org/>). Science is a subject that involves working in a laboratory. The global trends in science teaching have been geared towards advancing in science discipline and this has led to what is now branded as Science, Technology, Engineering and Mathematics (STEM) education. STEM education was called Science, Technology, Engineering and Mathematics (Sanders, 2009), and it was an initiative created by the National Science Foundation (NSF). The goal is in providing all students with critical thinking skills that would make them creative, problem solvers and more marketable in the workforce.

The core disciplines of science include Chemistry, physics, and biology. Chemistry being a core discipline in science examines the structure, functions, and interactions of matter. Chemists are curious about the processes that lead to chemical changes. Chemistry plays a significant role in our daily lives (NCERT, 2015). Chemistry is important because everything man does revolves around Chemistry, in fact human body is a composition of chemicals (Lim, 2020). The fact remains that the importance of Chemistry will not be diminished over time, so it will remain a promising career path (Natasa, 2016).

Quantitative analysis involves analyzing substances to ascertain their composition, such as the elements and compounds present in a given sample. Quantitative analysis is the branch of Chemistry that deals with the determination of the amount or percentage of one or more constituents of a sample (The Editor of Encyclopaedia, 2022). Calculations are done to determine the amount of a certain element or compound in a sample. The methods used for quantitative analysis may be broadly classified as physical and chemical, depending on which properties are utilized. Physical method involves the measurement of some physical quantities like density, refractive index, et cetera. Chemical method depends on such reactions or precipitation, neutralization, oxidation which are used in the formation of a new compound. The major types of chemical methods are known as Gravimetric analysis



or titrimetric analysis (Volumetric analysis). Chemical methods mainly focus on analysis of chemical reactions and it includes: Titration and Gravimetric analysis.

Titration, also referred to as volumetric (quantitative) analysis, is frequently used to determine how much of an analyte's solute is in its solvent. Analysis of neutralization reactions between acids and bases is one of its most useful applications. It involves the titration of an acid against base, the end-point of this reaction is determined by colour changes according to the pH of the solution by a substance known as indicator (Wikipedia, 2022). For a variety of reasons, quantitative analysis is significant in Chemistry: its integration to the pursuit of pure science and very essential to various practical application. It is utilized for medical diagnostic functions, such as determining a patient's blood cholesterol level (and also for determining the biochemical markers biopsied tissues), it plays a vital roles in formulating medicines and processing food products (Onissiphorou, 2022).

Despite the fact that many science and technology courses at Universities, Polytechnics, and Colleges of Education require Chemistry as a prerequisite, and it's importance in the society at large, the rate of students' performance in Chemistry examination has been observed to decline and this may be due to the students, school, and teacher factors at Ordinary Level Certificate Examination, General Certificate of Secondary Education (GCSE) and at Advanced Levels (A-levels). According to the chief examiners report, during the past five years, less than 50% of students have regularly completed Chemistry at the credit level or higher (A1–C6) (WAEC, 2015) (Alexiou, 2005). In educational institutions where both students and teachers contribute to the process outcome, the roles of both parties in the educational process are of utmost importance.

Fulfilling the goals of a successful learning process in Chemistry education is frequently a challenging managerial task and complex, three specific learning areas needs to be combined which are the cognitive, affective and psychomotor. The cognitive components is the foundation for learning which require acquisition of up-to-date factual information; the affective components deals with learners' disposition to chemical concepts with the aim of achieving positive attitude, increased self-awareness and clarification of value. The learning needs of individual students are distinct and peculiar in which their best are observed when their views are being listened to; also learning helps to incorporates their previous experiences, knowledge, skills and when their participation are adequate in which conventional method can never achieve. The factors that could positively influence students' to learn Chemistry could be organized into three main categories: Teaching approaches, Educational tools and Non-formal educational material and activities. Three crucial elements that should be taken into account in studying Chemistry are the methods used to present the content (such as relevance, and historical approach), (ii) instructional techniques that are implanted, and (iii) gender issues (Lumen, 2021).



The gender include boys and girls, and awareness of gender in science may help them in total exploration; as observed that the shift in academia and career success have been attributed to gender differences (Alexiou, 2005). It has been determined that there are gender gaps in University students' views and expectations of the internet, that male students have more positive feelings about the internet than female students, and that gender gaps exist in the use of computers and the internet, as well as in education, particularly in Colleges of education (Chang, Liu, Sung, Lin, Chen and Cheng, 2014). This was supported by past studies that male students have more confidence in using technology in learning than female students do because gender imbalance in computing are socially constructed and not related to a learner's innate ability (Hon Keung, Yau and Alison, 2012). Females have greater regulation in the online environment than males, who can employ more learning techniques and possess higher technical skills (Alghamdi, Karpinski, Lepp and Berkley, 2020). The outcomes of their research confirmed that women have a lower average in the use of virtual learning and learning styles.

School location is another factor that influences students' learning outcomes. It is viewed in terms of where a particular school is located and could be in a rural or urban area. Location is the environmental condition around a school which could be urban or rural (Ajayi and Akinsanya, 2016). It is observed that schools located in the urban areas tend to have more facilities, manpower, government attention, et cetera as against those located in the rural areas (Ekpenyong, 2017). The rural center is uniform, homogenous and less complex than that of urban centers which is often suspected to affect students' academic achievement because urban centers are better favoured with respect to social amenities distribution, educational facilities distribution and teachers (Ntibi and Edoho, 2017).

Most schools in rural areas are characterized by low population whereas schools in urban areas are crowded. An urban school will have an environment – based activities peculiar to its environment but different from a rural location. As the school environment differs, the level of academic performance may also differ; which results in an uneven quality of education and nonattainment of the national policy (Ajayi and Akinsanya, 2016). Location of a school has an important role to play in the students' learning outcomes and final educational attainment of students in the school.

The world had been transformed into a global village where all activities are achieved through technological tools, devices and resources; and there is a continuous development and occurrence of wide range of technologies which brings about greater potential and possibilities in using technology as a powerful means for instructional deliveries. Learners in this generation are commonly referred to as “NetGen” learners due to the fact that they grew up in environment surrounded by information and communication technology devises and are overwhelmed by continuous technological developments. They prefer to always want to stay connected for interactive and real time experiences rather than non-interactive, passive and non-stimulating



environment (Papp, 2010). The educational challenge necessitated by Covid-19 affirmed more the idea of using what appeal to students mind most during teaching learning process, since traditional teaching strategies that are teacher-centered have not provided enough chances for pupils to create their own learning. Students centered instructional methods is a vital means of deriving students' individual capabilities, intelligence and creative thinking (Herga, Grmek and Dinevski (2014).

The Chemistry curricula in Nigeria are designed so that ample time is allotted for practical demonstration. The chief examiners' reports from the West African Examination Council (WAEC) in 2012 and 2013 included, among other things, the unimpressive performance of the candidates (Ramos, Pimentel, Marietta, Maria das and Botelho, 2018). It was stated that students were unable to draw logical conclusions from experimental findings. The lack of knowledge with the use of basic laboratory tools has been linked to students' poor performance, particularly in the practical aspects of Chemistry. Effective utilization of laboratory resources can help students better understand abstract Chemistry concepts since students require practical experiences to understand these concepts (Alexiou, 2005). The Colleges of Education students' performance in Chemistry were not encouraging due to their poor foundational backgrounds in Chemistry in secondary schools as a result of lack of laboratory, or equipment and poor laboratory conditions.

Although the use of laboratories in classroom instruction is very vital and essential, there are some restrictions and issues, particularly in poor nations. The following are some of the main issues encountered: the cost of conducting experiments and setting up the necessary equipment; the length of time required for planning and implementation; the difficulty of assessing students' performance during activities in crowded classrooms; and the teacher's limited ability to perform even the most basic of laboratory activities due to a lack of facilities or equipment (Herga and Dinevski, 2012).

In the real world situations taking cognizance of the limits and problems, sometimes due to the limitation of equipment, limited time allocated for the topic or insufficient laboratory conditions force teachers to perform laboratory activities in crowded groups, or sometimes demonstrational activity can be performed. This application is contrary to the basic laboratory method ethics which accepts that knowledge can be gained through personal experience and observation (Herga and Dinevski, 2012). When taking these limitations into consideration looking for appropriate alternatives is inevitable. Among these alternatives, the use of educational technologies, more specifically the use of computer in supporting the laboratory methods can be a logical one (Tuysuz, 2010).

To solve the various problems faced under conventional method, one of the valid intervention used to solve the problem is the use of virtual laboratory. People are constantly looking for ways to make knowledge transfer easy, quicker, and more effective. Virtual laboratory seems to be the natural next step for the evolution of



education (Georgiou, Dimitropoulos and Manitsaris (2007). Many researchers and educational practitioners opined that virtual laboratory technology has provided new insights to support education.

A virtual laboratory is the most fascinating breakthrough of the digital age that may be applied to the field of education. The interesting laboratory processing and simulation facilities provided by the virtual laboratory make it easier to use tools and produce findings that are more accurate (Tatli and Ayas, 2012) The virtual laboratory is a teaching tool that effectively offers direct, hands-on experiment visualization, an interactive virtual environment, and more opportunities to redo failed experiments to further the learning process independently (Ramadhan and Irwanto, 2017; Tatli and Ayas, 2012). The development of virtual laboratories facilitate numerous distinct benefits which include equipment reduction needs, availabilities at all times when and where needed in attaining the expected learning outcomes (Gambari, Kawu and Falode, 2018).

The virtual laboratories, a learning medium which enhances academic pursuits contributes positively in achieving learning goals by solving some problems faced in conventional laboratories (Georgiou, Dimitropoulos and Manitsaris, 2007). Utilizing virtual laboratories effectively improves learning through practice in a more affordable and safe setting, and once available at an affordable price (Tatli and Ayas, 2012). The use of virtual laboratories greatly facilitates and improve learning process of science through simulations but cannot replace traditional laboratories (Kathleen and Pedersen 2021).

Therefore, the use of virtual laboratory or simulation programs, overcomes some of the problems faced in traditional laboratory applications and make positive contributions in reaching the objectives of an educational system. Use of simulation programs can overcome that mistakes which occur as a result of such laboratory conditions or misuse of the laboratory (Lim, 2020). The risk that may be avoided in which a hazardous experiment can be prepared in computer simulations for students to view the experiments design, run the experiment in computer, and observe the result is one of the greatest benefits of virtual laboratories over the real laboratories. Difficult experiments can be done virtually having advantages of time saving, reduced cost and increased motivation compared to real laboratory which faced lack of equipment, costly materials and dangerous situations (Natařsa and Dinevski, 2012; Wong, Chen and Chang, 2020).

The urgent need for Nigeria to gradually and steadily move away from the traditional time-tested methods and techniques of instruction and embraced the idea and implementation of ICT-based teaching strategies. Because of this, research on the impact of virtual laboratories on students' performance in practical Chemistry in a personalized and collaborative context is few in Oyo State, Nigeria. This study seek to find out the effects of virtual laboratory on gender and school location in quantitative analysis in Chemistry in Colleges of Education, Oyo State.



Statement of the Problem

Poor performances in practical aspect of Chemistry especially in quantitative analysis has been observed over many years most especially since the COVID 19 era in which academic activities were crippled for a long period of time. The performance of students' in practical Chemistry which facilitates meaningful learning is very poor in Nigeria (Hamed and Aljanazrah, 2020). The poor performance is attributed to limitation of the teacher to perform simple laboratory activities due to packed classrooms, lack of laboratories or equipment, or inadequate laboratory settings, the cost of conducting experiments and setting up the necessary equipment; the length of time required for planning and implementation; the difficulty of assessing students' performance during practical activities in crowded classrooms. This could be due to the fact that both students' and teachers are not familiar to the virtual laboratory and we are in the era of technology, there is need for the students' to be exposed to virtual laboratory in order to improve the students' learning outcomes. Existing work had been done on the conventional method, however, there is paucity of work in the use of virtual laboratory in teaching quantitative analysis, an aspect of Chemistry practical in Colleges of Education. This study therefore focus on the Colleges of Education whose Chemistry students are not conversant with the use of virtual laboratory and would need information and orientation on virtual laboratory. It is on this note that this study was carried out to investigate the effects of virtual laboratory on Chemistry students' gender and school location in Quantitative analysis in Colleges of Education, Oyo State.

Aims and Objectives of the Study

The aim of this study is to examine the effects of virtual laboratory on Chemistry students' gender and school location in quantitative analysis in Colleges of Education, Oyo State.

Specifically, the objectives of this study are to:

- i. determine the main effect of using virtual laboratory on students' learning outcomes (Achievement) in quantitative analysis in Chemistry in College of Education, Oyo State;
- ii. ascertain the main effect gender on students' learning outcomes (Achievement) in quantitative analysis in Chemistry in College of Education, Oyo State; and
- iii. investigate the main effect of school location on students' learning outcomes (Achievement) in quantitative analysis in Chemistry in Colleges of Education, Oyo State.



Hypotheses

The following null hypothesis will be tested at 0.05 level of significant.

H₀₁: There will be no significant main effect of virtual laboratory on Chemistry students' learning outcomes: (Achievement) in quantitative analysis in Colleges of Education, Oyo State.

H₀₂: There will be no significant main effect of gender on Chemistry students' learning outcomes (Achievement) in quantitative analysis in Colleges of Education, Oyo State.

H₀₃: There will be no significant main effect of school location on Chemistry students' learning outcomes (Achievement) in quantitative analysis in Colleges of Education, Oyo State.

Methodology

The research design of the study was a quasi-experimental design of 2x2x2 factorial matrix. It focuses on treatment which was of two levels (virtual group and control group). Virtual laboratory and conventional method were independent variables, in which virtual laboratory was used for the experimental group while the conventional teaching method was used for the control group. The dependent variable was learner's achievement in pre-test and post-test approach.

The population for the study comprised of all 100 level chemistry students from Emmanuel Alayande College of Education, Erelu, Oyo and Oyo State College of Education, Lanlate in Oyo State. The population of Chemistry students in Emmanuel Alayande College of Education was three hundred and ninety one (391) while the total population of Chemistry students in Oyo State College of Education, Lanlate was one hundred and sixty-nine (169). The total population for the study was five hundred and sixty (560) students of the schools in consideration.

The study used purposive sampling technique to select one hundred and thirty six (136) of two intact classes of NCE 1 chemistry students of Alayande College of Education, Erelu, Oyo and NCE 1 Chemistry students' of Oyo State College of Education, Lanlate, Oyo State. The study adopted the use of NCE 1 Chemistry students because the quantitative analysis in Chemistry was been taught in 100 level.

Research Instruments

The research instruments used for this study were Chemistry Virtual Laboratory (CVL), Students' Chemistry Attitude Questionnaire (SCAQ).



(a) Chemistry Virtual Laboratory (CVL)

Chemistry Virtual Laboratory was an instructional software developed by the researcher for teaching and learning Chemistry at Colleges of Education; it is used as a treatment to support learning using computer as a medium. The CVL was developed with three (3) components which include: (a) Chemistry lecture note, (b) video of Chemistry practical, (c) Virtual Chemistry Laboratory. The Chemistry lesson plan format enables students to read the experimental procedure and guide the teaching of quantitative analysis as the core of the study.

Video component were recorded using digital camera and editing suite to enable students watch the video of Chemistry practical and the Chemistry Virtual Laboratory enable the students to perform the experiment. CVL consists of three topics which include: (a) Introduction to Quantitative Analysis (b) Preparation of Standard Solution, and (c) Determination of Unknown Concentration. Each of these topics were taught for 60-minutes per week. The production of the Chemistry Virtual Laboratory were effected through a team of professionals and specialists that include: (a) computer programmers, educational technology experts; Chemistry lecturers and laboratory assistants.

(b) Chemistry Concepts Achievement Test (CCAT)

The Chemical Concepts Achievement Test (CCAT) used for data collection in which the students' were given the Chemical Concepts Achievement Test (CCAT) as pre-test before the treatment. It was based on the contents of CVL. CCAT consisted of forty (40) objectives questions. Chemical Concepts Achievement Test (CCAT) were answered by the students. It has two (2) sections. Section A consists of Demographic Data of the students. Section B comprises forty (40) multiple choice questions which were self-structured to test the students' achievement in Chemistry. The instrument were scored manually; one (1) mark was awarded for each correct answer while zero (0) was awarded for wrong answer. The total mark obtained was forty (40) marks.

Validity and Reliability of Research Instrument

Face and content validity evidence were used to validate the questionnaires. The data collected from the pilot study was used to determine the reliability coefficient using Kuder Richardson of $KR20 = 0.8$, was obtained to ensure its dependability.

**Table 1:** Frequency table showing the schools of the respondents

Name of schools	Frequency	Percentage	Cumulative percentage
Emmanuel Alayande College of Education	88	64.71	64.71
Oyo State Colleges of Education Lanlate	48	35.29	100.0
Total	136	100	

Source: Fieldwork, 2022

Table 1 shows that the 88 (64.71%) of the respondents were from Emmanuel Alayande College of Education while the remaining 48(35.29%) of the respondents were from Oyo State College of Education, Lanlate. Most of the respondents were tilted towards Emmanuel Alayande College of Education Erelu, Oyo.

Table 2: Frequency table showing gender distribution of the respondents in Emmanuel Alayande College of Education, Erelu, Oyo

Gender	Frequency	Percentage	Cumulative percentage
Male	30	34.10	34.10
Female	58	65.90	100.0
Total	88	100	

Source: Fieldwork, 2022

Table 2 shows that 30 (34.10%) of the respondents in Emmanuel Alayande College of Education, Erelu, Oyo (EACOED) were male while 58 (65.90%) were female. Most of the respondents in Emmanuel Alayande College of Education Erelu, Oyo (EACOED) were females.

Table 3: Frequency table showing gender distribution of the respondents in Oyo State College of Education, Lanlate

Gender	Frequency	Percentage	Cumulative percentage
Male	17	35.40	35.40
Female	31	64.60	100.0
Total	48	100	

Source: Fieldwork, 2022



Table 3 shows that 17 (35.40%) of the respondents in Oyo State College of Education, Lanlate were Male while 31 (64.60%) were female. Most of the respondents in Oyo State College of Education, Lanlate were females.

Presentation of Tests of Hypotheses

H₀₁: There will be no significant main effect of virtual laboratory on Chemistry students' learning outcomes (Achievement) in quantitative analysis in Colleges of Education, Oyo State.

Table 4: Analysis of Covariance (ANCOVA) showing the main effect of virtual laboratory on Chemistry students' learning outcomes (Achievement) in quantitative analysis in Colleges of Education, Oyo State

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1540.663 ^a	2	770.332	336.825	.000	.777
Intercept	1344.275	1	1344.275	587.780	.000	.753
Pre-test	1.371	1	1.371	.599	.440	.003
Virtual Lab	1537.327	1	1537.327	672.192	.000	.777
Error	441.398	135	2.287			
Total	13370.000	136				
Corrected Total	1982.061	136				

a. R Squared = .777 (Adjusted R Squared = .775)

Source: Fieldwork, 2022

Table 4 indicates that there is a significant main effect of virtual laboratory on students' academic achievement in Chemistry F-ratio is 672.192, with associated probability (P = 0.000). Meanwhile the Probability value of 0.000 is less than 0.05 level of significant. The partial Eta squared (0.777) showed that virtual laboratory has a great effect on the academic achievement of quantitative analysis in Chemistry (0.777) accounting for 77.7% of the effect. Hence, it could be concluded that virtual laboratory had significant effect on students' learning outcomes (Achievement) in quantitative analysis in Chemistry in Colleges of Education. The null hypothesis that



there will be no significant main effect of virtual laboratory on Chemistry students' learning outcomes (Achievement) in quantitative analysis in Colleges of Education in Oyo State is therefore rejected.

H0₂: There will be no significant main effect of gender on Chemistry students' learning outcomes (Achievement) in quantitative analysis in Colleges of Education, Oyo State.

Table 5: Analysis of Covariance (ANCOVA) showing the main effect of gender on Chemistry students' learning outcomes (Achievement) in quantitative analysis in Colleges of Education, Oyo State

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	45.340 ^a	2	22.670	1.120	.331	.026
Intercept	4316.524	1	4316.524	213.236	.000	.715
Pre	45.334	1	45.334	2.239	.138	.026
Gender	.002	1	.002	.002	.985	.026
Error	1720.649	133	20.243			
Total	78289.000	136				
Corrected Total	1765.989	135				

a. R Squared = .026 (Adjusted R Squared = .003)

Source: Fieldwork, 2022

Table 5 demonstrates that gender had no significant main effect on student's intellectual achievement in Chemistry F-ratio is 0.002, with associated probability ($P = 0.985$). The Probability value of 0.985 is greater than 0.05 level of significant. The partial Eta squared (0.026) showed that gender had very minimum 2.6% effect on the academic achievement of quantitative analysis in Chemistry. Hence, it could be concluded that gender had no significant effect on students' learning outcomes (Achievement) in quantitative analysis in Chemistry in Colleges of Education. The null hypothesis that there will be no significant main effect of gender on students' learning outcomes (Achievement) in quantitative analysis in Chemistry in Colleges of Education in Oyo State is hence accepted.



H0₃: There will be no significant main effect of school location on Chemistry students' learning outcomes (Achievement) in quantitative analysis in Colleges of Education, Oyo State.

Table 6: Analysis of Covariance (ANCOVA) showing the main effect of school location on Chemistry students' learning outcomes (Achievement) in quantitative analysis in Colleges of Education, Oyo State

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	299.834 ^a	2	149.917	8.176	.000	.109
Intercept	2452.565	1	2452.565	133.761	.000	.501
Pre	7.815	1	7.815	.426	.515	.003
Location	296.444	1	296.444	16.168	.000	.108
Error	2438.607	133	18.335			
Total	46014.000	136				
Corrected Total	2738.441	135				
a. R Squared = .108 (Adjusted R Squared = .096)						

Source: Fieldwork, 2022

Table 6 reveals that there is a significant effect of school location on students' academic achievement in Chemistry F-ratio is 16.168, with associated probability ($P \geq 0.000$). The Probability value of 0.000 is less than or equal to 0.05 level of significant. The partial Eta squared (0.109) showed that location had slight effect of 10.9% on the academic achievement of quantitative analysis in Chemistry. Hence, it could be deduced that location had a slight significant effect on students' learning outcomes (Achievement) in quantitative analysis in Chemistry in Colleges of Education. The null hypothesis that there will be no significant main effect of location on students' learning outcomes (Achievement) in quantitative analysis in Chemistry in Colleges of Education in Oyo State is hence rejected.



Discussion of Findings

The study was carried out to examine the effects of virtual laboratory on the Chemistry students' learning outcomes (Achievement) in quantitative analysis in Colleges of Education. The demographic information of the students revealed that eighty-eight (88) (64.71%) students from Emmanuel Alayande College of Education, Erelu, Oyo participated while forty-eight (48) (35.29%) students from Oyo State College of Education, Lanlate participated in the study. The number of students were not the same because of the variation in population of the students in the different location. The implication of this was that most schools in rural areas was characterized by low population whereas schools in urban areas were crowded.

The findings of this study revealed that there is a strong positive significant effect of virtual laboratory on students' learning outcomes (Achievement) in Quantitative analysis in Chemistry among Colleges of Education in Oyo State. Virtual laboratory was seen to have a great and positive effect on students offering Chemistry based on the achievement test outcomes. Chemistry students taught with virtual laboratory record high academic achievement than those taught with the use of conventional methods. In a study, more than 80% of students who used virtual laboratories scored higher in examinations compared to a control group (Kumar, Radhamani, Nizar, Achuthan, Nair, and Diwakar (2018); Asiksoy and Islet, 2017). This corresponds with the view that virtual laboratories offer numerous advantages for reaching the anticipated learning outcomes; and the usage of virtual laboratories addresses some of the issues with traditional laboratories and helps students achieve their learning objectives (Georgiou, Dimitropoulos and Manitsaris, 2007). Additionally, it was discovered that using virtual laboratories in Chemistry classes as an alternative method of instruction might significantly enhance student learning outcomes (Tatli and Ayas, 2013).

The results from the findings revealed that students in the treatment group performed better than those taught with the use of conventional methods; the introduction of virtual laboratory package made the experimental group performed better than the control group (Famuwagun and Mohammed, 2020). The experimental group scored much higher on the physics achievement test than the control group, according to a study that evaluated the effects of a virtual laboratory with a traditional laboratory on academic achievement, student teachers' cognitive achievement and practical skills (Hammed and Aljanazra, 2020; Faour and Ayoubi, 2018; Asare, 2022). The result of a study revealed a positive effect on the application of virtual laboratory of problem-based learning to improve scientific literacy and problem-solving skills among junior high school students (Supahar and Widodo, 2020).

This result supported the idea that using audiovisual teaching resources aids in students achieving excellent academic scores (Ibe and Abamuiche, 2019). The exciting laboratory processing and simulation facilities, tool simplicity, conduct of



experiments at their own learning pace, and more precise findings, were all provided by the virtual laboratory (Tatli and Ayas, 2012; Asiksoy and Islek, 2017). Students can individually expand their understanding by repeating the incorrect experiment using the virtual laboratory activity (Tatli and Ayas, 2012; Ramadhan and Irwanto, 2017).

The results from the finding showed that there is no significant main effect of gender on students' academic achievement in Chemistry is accepted, F-ratio is 0.002, with associated probability ($P = 0.985$) value of 0.985 greater than 0.05 level of significant. The partial Eta squared (0.026) showed that gender had very minimum 2.6% effect on the academic achievement of quantitative analysis in Chemistry. Students' positive attitude towards science were moderate, with no significant differences in attitude between female and male students¹¹. (Sofiani, Fadhillah and Sihite, 2018). Gender was found not to solely affect the performance of students in Chemistry. This is contrary to past studies that male students have more confidence in using technology in learning than female students do because gender imbalance in computing were socially constructed and not related to a learner's innate ability (Hon Keung and Alison, 2012). In online context, females have stronger regulation than males, which had greater technical skills and can employ more learning methodologies (Alghamdi, Karpinski, Lepp and Berkley, 2020). The outcomes of their research confirmed that women have a lower average in the use of virtual learning and learning styles which was contrary to the findings of this study (Goulas, 2013). It was also reported that majority of females greater than 80% (>80%) preferred a consistent learning method and dislike the online learning approach while more than 85% (>85%) males preferred the online learning method to the traditional face-to face method (Zhonggen, 2021).

The results of the finding revealed that there is a significant effect of school location on students' academic achievement in Chemistry is rejected, F-ratio is 16.168, with associated probability ($P \geq 0.000$) value of 0.000 is less than or equal to 0.05 level of significant, the partial Eta squared (0.108) showed that location has slight effect of 10.8% on the academic achievement of quantitative analysis in Chemistry. It was discovered that school location slightly affects students' achievement in Chemistry. As the school environment differs, the level of academic performance may also differ; which results in an uneven quality of education and non-attainment of the national policy (Ajayi and Akinsanya, 2016). It was also observed that schools located in the urban areas tend to have more facilities, manpower, government attention, et cetera as against those located in the rural areas (Ekpenyong, 2017). This was attributed to the effectiveness of teaching in the urban areas due to the fact that the resources were accessible and readily available for teaching and learning (Babawale, 2019).

The rural centre was homogenous and less complex than that of urban centers which was often suspected to affect students' academic achievement because urban



centers were better favoured with respect to social amenities distribution, educational facilities distribution and teachers (Ntibi and Edoho, 2017). The area where a school was located was expected to affect the students' achievement either positively or negatively due to the fact that the location was linked with the teacher retention and provision of necessary school facilities (Ajayi and Akinsanya, 2016).

Recommendations

Based on the foregoing, the following recommendations are suggested to be considered.

1. Students should be introduced to virtual laboratory from secondary schools to avoid being shy away from the advanced equipment once in higher institution. Schools' laboratories should be built or renovated, equipped with adequate and appropriate technological devices that are learners friendly, which will help keep the interest of the students within the laboratory to learn more. Lecturers and students must break away from the old pedagogical beliefs underlying teaching, teaching and learning should be blended and made teacher-learner centered, if not purely learner-centered. Lecturers should be trained regularly through seminars, workshops, conferences and short and long term training on how to use virtual laboratory to improve their competence in teaching and lecture delivery. All lecturers in Colleges of Education should have access to the internet at homes and in the offices. The College environment must be made ICT- compliant as it is in the University.
2. Both male and female students should be encouraged on the use of virtual laboratory.
3. School located in the rural areas should be equipped adequately as schools located in the urban areas tend to have more facilities, manpower and government attention as against those located in the rural areas. Conducive environment in the rural areas should be provided with adequate facilities for virtual laboratory as a mode of instruction to be effectively utilized in schools. Virtual laboratory should be encouraged. There should be a thorough monitoring by the concerned bodies on the implementation of virtual devices in both rural and urban schools. This is to prevent some sets of students being deprived of effective method of teaching especially in learning Chemistry.

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CHAPTER 53

ATTITUDE OF UNDERGRADUATES TOWARDS THE UTILIZATION OF MOBILE TECHNOLOGIES FOR LEARNING

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Abstract

Technology is advancing and becoming universal to the extent that it provided educators with valuable tools to support learning. Despite the advanced level of mobile technologies, the benefits and features of these mobile technologies have not been properly researched in relation to education, especially in developing countries like Nigeria. This study therefore assessed attitude of undergraduates towards the utilization of mobile technologies for learning in Iwo, Osun State Nigeria.

This study adopted a descriptive survey research design and employed a two-sectioned questionnaire designed by the researcher to elicit information from the respondents. The research instrument was validated by three educational technology experts, and pilot tested among 10 undergraduates that were not part of the original study. The sample size included a multistage sampled 150 undergraduates across three faculties in Bowen University, Iwo. Both descriptive statistics and inferential statistics were employed to provide answer to the research questions.

The findings of the study were that undergraduates have access to mobile technologies and use them frequently. Significant difference in the undergraduates' attitude towards utilization of mobile technologies for learning based on academic level was also established. This is as undergraduates in 400 level showed better attitude towards the use of mobile technology for learning than their counterparts $\{F_{(2,149)} = 2.959, p < 0.05 = 0.034\}$.

It was recommended that mobile technologies should be made available, open and accessible to students, so as to encourage them to utilize the technologies for learning in order to improve learners' capability towards achieving better academic performance.



Keywords: Attitude, Undergraduates, Utilization, Mobile Technologies, Learning

Introduction

Globalization of the world through Information and Communication Technology (ICT) has brought about knowledge expansion among tertiary institution as they grow rapidly, in scope and complexity. Also, ICT has a revolutionary impact on educational experience globally. This is why teachers are today finding out that the traditional methods of managing and transmitting knowledge and skills are inadequate to deal with the accelerating change. In order to achieve the highest quality standard in education, a new approach to teaching and learning must be fostered to initiate change, intensify and diversify programmes and build a foundation for continuity (Maria, 2019) .

The advent of Mobile technologies such as the second and third generation Global System for Mobile Communication (2G/3G GSM), General Packet Radio Service (GPRS), Wireless Application Protocol (WAP), Infrared Data Association (IrDA), Bluetooth, IEEE 802.11, Wi-Fi, WiMAX and so on, has brought about a paradigm shift in communication and information sharing among people globally (Al-Shareef, 2018). Mobile technology has the power to make learning even more widely available and accessible to learners across Africa, especially the vulnerable populations that could not benefit from e-learning projects due to lack of infrastructure and other factors. Mobile technology is a rapidly growing industry in Nigeria, and from the data obtained from Nigerian Communications Commission (NCC), there are more than 138 million active subscribers and around 75 percent of the Nigerian population now has access to mobile and smart phones as at May 2020.

In Nigeria, across Africa, and the world, many universities are integrating mobile learning platforms into their educational curriculums as a means of not only enhancing the students learning experience (Deng and Tavares, 2013), but also as a way of staying competitive. With mobile and electronic learning technologies shaping how educational content is consumed today (Ahmed, 2014), one cannot deny that students born in the digital and mobile age would be approaching learning from a very different perspective than their predecessors. Indeed, learners are increasingly using various mobile technologies such as smartphone and its related tools to not only construct, but, also, share knowledge in new, interesting and interactive ways.

The world is in the age which mobile devices are used for more than just chatting and texting; they are often used to access the internet and everything it has to offer. Mobile technologies are used for a number of reasons, including company and making a phone available in an emergency. For instance, the use of a mobile phone is not limited to talking; it can also be used with a computer, mobile banking, and payment, among other things. Students should talk over the phone about their tasks or



project work, which can be tedious and time-consuming otherwise. Fatima and Abdullahi, (2017) opined that, more than two-thirds of university students used electronic media (including mobile phones) in class, while studying, or while doing assignments. While the use of mobile technologies is not intended for negative purposes, the attitude and time dedicated to them has enslaved students, turning them into addicts. Conversely, mobile technology, according to Seifert, Hervás-Gómez and Toledo-Morales (2019) influences academic performance and enhances motivation to study. When properly utilized, mobile technology can lead to passive learning in which the student is the central player. Teachers and researchers will know the aspects they need to control and also the strengths to support when using new technologies. This makes the need to investigate the attitude of undergraduates towards the utilization of technology a necessity.

Statement of the Problem

In Nigeria, little is being said about mobile learning despite the level of penetration of mobile network to most of the rural areas in the country and the availability of phones. In fact, 58.5 per cent of Nigerians in the rural population now has access to mobile phones (Ahmed, 2014). The implementation of mobile learning in Nigeria has continued to witness social abuse, use for examination malpractice, low computer literacy levels, poor motivation for educators, poor learning environment, and lack of expertise in technology. Similarly, Samuel and Ayodele (2014), affirms that some mature students are also not willing to embrace technology when learning as they are mainly studying for promotion at work rather than skill.

This result is consistent with that obtained on a previous study on e-learning in which the author stated that lukewarm attitudes on the side of the staff and students in the e-learning processes is a challenge to successful implementation in Nigeria as well as the result of the study obtained by Riconscente (2013) on the use of Interactive digital technologies in Southwest Nigerian universities being impeded by lack of motivation for the faculty members. Another notable reason for the unenthusiastic attitude of student is that mobile devices take learning out of the classroom beyond the reach of the lecturers, and this can be perceived as a threat and loss of control. In a remark made by Al-Shareef (2018), the acceptance and readiness to use mobile technology by the teaching staff and their students is a crucial factor that will determine the success rate of mobile learning implementation in Nigeria, against this backdrop this study intends to investigate the attitude of undergraduate towards the utilization of mobile technologies for learning in one of the higher institutions in Iwo, Osun State.



Theoretical Framework

The Mastery Learning Theory developed by Bloom's (1968) is the framework for this study. Bloom asserted that when mastery is held constant and time is allowed time, traditional instruction will hold time constant and allow mastery to vary (Bei Zhang, 2010). Bloom was of the opinion that over 90% of students can master content given the right context and learning tools for their learning style, even with a learning difficulty or disability present (Bei Zhang, 2010). To apply the theory, students are provided with a variety of instructional procedures utilizing varied forms of interaction, learning and instruction while teachers cater for a variety of students' learning styles, rather than students catering for teachers' teaching styles. This was a paradigm shift in educational thinking and practice in the 1960s because teachers had been all providing the same type of teaching style and assignment and assessment requirements for students in the same time allotment (Bei Zhang, 2010).

Purpose of the Study

This study examined the attitude of undergraduate towards the utilization of mobile technologies for learning in Iwo, Osun State. Specifically, the study:

- i. determined frequency of utilization of mobile technologies for learning among undergraduate in Iwo;
- ii. investigate the attitude of undergraduates towards the utilization of mobile technologies for learning in Iwo; and
- iii. establish if significance difference exists in the attitude undergraduates of different levels towards the utilization of mobile technologies for learning in Iwo.

Research Questions

Three research questions guided this study. They are:

- i. What is the frequency of utilization of mobile technologies for learning among undergraduate in Iwo?
- ii. What is the attitude of undergraduates towards the utilization of mobile technologies for learning in Iwo?
- iii. Is there any established significant difference in the attitude of undergraduates of different levels towards the utilization of mobile technologies for learning in Iwo?



Methodology

Descriptive survey research design was adopted for this study. Three research questionnaire were raised. Questionnaire on Students' Attitude towards the Utilization of Mobile Technology (SATUMOT-Q designed by the researcher was used for data collection. The research instrument was validated by three educational technology experts, and pilot tested among 10 undergraduates that were not part of the original study. The sample size included a multistage sampled 150 undergraduates across three faculties in Bowen University, Iwo. Copies of the questionnaire were administered to the students after taking permission for them. Data collected was analysed using descriptive statistics and inferential statistics.

Results

Table 1: Demographic information of respondents

Demographic Data		Frequency	Percentage
Gender	Male	63	42.0
	Female	87	58.0
	Total	150	100.0
Academic Level	100	23	15.3
	200	26	17.3
	300	49	32.7
	400	52	34.7
	Total	150	100.0

Table 1 reveals the demographic description of participants in this study. As indicated in Table 1, gender difference rate of 16.0% was observed, indicating that there was a difference in the proportion of participants in the study: female respondents (58.0%) were more than male respondents (42.0%). Also, undergraduates across four academic levels were sampled: 400 level undergraduates formed the largest percentage (34.7%) of the sample size; followed by the 300 level undergraduates forming 32.7%; 200 level forming 17.3%; and 15.3% of 100 level. The implication of this demography is that there is an almost proportionate representation among the categories of participants.



Research Question 1: What is the frequency level of usage of mobile technologies for learning among undergraduates in Iwo, Osun State?

Table 2: Frequency of Use of mobile technologies for learning

S/N	Items	Always Freq. (%)	Often Freq. (%)	Seldom Freq. (%)	Never Freq. (%)
1	Smart Phones	72 (48.0)	59 (39.3)	19 (12.7)	0 (0.0)
2	Pocket Computers	72 (48.0)	60 (40.0)	18 (12.0)	0 (0.0)
3	Presentation Software	67 (44.7)	63 (42.0)	20 (13.3)	0 (0.0)
4	Radio Set	63 (42.0)	60 (40.0)	27 (18.0)	0 (0.0)
5	Digital Video Camera	63 (42.0)	64 (42.7)	23 (15.3)	0 (0.0)
6	Notebook Computer (iPad)	73 (48.7)	58 (38.7)	19 (12.7)	0 (0.0)
7	Interactive whiteboard	61 (40.7)	64 (42.7)	25 (16.7)	0 (0.0)
8	Word processing Software (MS Word)	70 (46.7)	62 (41.3)	18 (12.0)	0 (0.0)
9	Palmtop Computer	73 (48.7)	60 (40.0)	17 (11.3)	0 (0.0)
10	e-Note Taker	70 (46.7)	60 (40.0)	20 (13.3)	0 (0.0)
Cumulative Total		684 (45.6)	610 (40.7)	206 (13.7)	0 (0.0)

Table 2 shows that majority of the undergraduates claimed that they always use notebook computer, palmtop computer, smartphones, pocket computers, word processing software, e-note taker, presentation software, while only few stated that they often use digital video camera. The cumulative total percentage of 45.6% which is the greatest among the percentage values revealed that undergraduates always utilised mobile technologies for learning in Iwo, Osun State.

Research Question 2: What is the attitude of undergraduates toward the utilization of mobile technologies for learning?



Table 3: Undergraduates' Attitude towards the Utilization of Mobile Technologies for Learning

S/N	Items	Mean
1	I enjoy learning with mobile technologies	2.95
2	Using mobile technology for learning improve my self-confident on learning on my own	3.02
3	Mobile technology enhances my learning and make me assimilate easily	3.30
4	Smart phone give rooms for collaboration and allows me to communicate easily with my colleague	3.32
5	Pocket computer offers flexibility and allows me to learn any on my own at any time	3.37
6	Presentation Software for learning offers dynamic material to support learning	3.25
7	Mobile technology allows me to evaluate learning and test my knowledge	3.44
8	Mobile technology doesn't create distraction for learning	3.01
9	My environment encourages the use of mobile technology for learning	3.37
10	Word processing software motivates me to learn and offer me different multiple learning style	3.05
Cumulative Total		3.21

Table 3 shows all the items have mean value that is greater than benchmark of 2.50, this implies that undergraduates claimed that mobile technology allows them to evaluate their learning and test their knowledge (3.44); Pocket computer offers flexibility and allows me to learn any on my own at any time(3.37); their environment encourages the use of mobile technology for learning (3.37); smartphone give rooms for collaboration and allows them to communicate easily with their colleague (3.32); mobile technology enhances their learning and make them assimilate easily (3.30). Summarily, the grand mean of 3.21 which is greater than the benchmark of 2.50 implies that undergraduates have positive attitude towards the utilization of mobile technologies for learning.

Research Question 3: Is there any significant difference in the undergraduates' attitude towards utilization of mobile technologies for learning based on academic level?



Table 4: Analysis of Variance (ANOVA) of undergraduate attitude towards utilization of mobile technologies for learning

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.868	2	.434	5.292	.034*
Within Groups	12.102	146	.082		
Total	12.970	149			

Table 4 reveals the ANOVA of difference in undergraduates' attitude towards utilization of mobile technologies for learning based on academic level. The result revealed that there was significant difference in the undergraduates' attitude towards utilization of mobile technologies for learning based on academic level ($F_{(2,149)} = 5.292, p < 0.05 = 0.034$).

Table 4: Scheffe Post-hoc Analysis of difference in undergraduate attitude towards mobile technology for learning based on academic level

(I) Academic Level	(J) Academic Level	Mean Difference (I-J)	Sig.
	100 Level	-.11024	.493
	200 Level	-.12375	.499
	300 Level	-.11056	.488
	400 Level	.02818	.983

In order to locate identify the sources of the significant difference among the groups, Scheffe Post-hoc analysis was carried out. The result shows that there was a significant difference between undergraduates in 400 Level and those in other levels. This indicated that undergraduates in 400 level have better attitude towards the use of mobile technology for learning than their counterparts.

Discussions

Findings from this study indicated that undergraduates have access to mobile technologies and frequently used mobile learning devices. The findings of this study is in line with the outcome of the study of Ikediugwu (2011) which stated that mobile technology is having a revolutionary impact on educational globally, that is why students are today finding out that the traditional methods of managing and acquiring



knowledge and skills are inadequate to deal with the accelerating change. In order to achieve the highest quality standard in education, a new approach to learning such as the use of mobile technologies must be fostered to initiate change, intensify and diversify programs and build a foundation for continuity.

This study revealed that undergraduates have positive attitude towards the utilization of mobile technologies for learning. This study is supported by the findings of Deng and Tavares, (2013) who explained that this could be owed to the fact that mobile technology has continuously grown in Nigeria and at least virtually all students in tertiary education in Nigeria have at least one mobile device. Also, many universities are integrating mobile learning platforms into their educational curriculums as a means of not only enhancing the students learning experience, but also as a way of staying competitive. Thus, improving students' attitude towards mobile technology use for learning.

This study showed that significance difference exists among undergraduate attitude towards utilization of mobile technologies for learning. Researchers over the years have reported differing findings as regards difference in technology adoption, integration and use. Finding supports the position of Ogunmakin (2018) who reported that students attitude towards the use of technology varies from different orientation students have about the importance of technology for learning, and in particular on mobile technology. The researcher stressed that innovation, incorporation and implementation of emerging technologies for learning in tertiary institutions.

Conclusion

This study has established that undergraduate have access to mobile technology for learning and demonstrated positive attitude towards it. The study has also revealed that tis attitude towards mobile technology for learning vary among undergraduate with those in the most senior class demonstrating the best attitude the utilization of mobile technology for educational purpose.

Recommendations

Based on the findings of this study, the following recommendations are necessary:

1. The use of mobile technologies should be encouraged among students. This will provide avenue for collaborative and active learning as well as personalized, individualized, and self-paced learning, which will in turn translate to better academic performance
2. University proprietors and stakeholders should provide all necessary digital technologies and training that is required to use mobile technologies for the



students. This should be pursued towards making a hitch-free avenue for students to use the technologies.

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CHAPTER 54

INITIATING A PARADIGM SHIFT IN SECONDARY SCHOOL CURRICULUM IN NIGERIA FOR YOUTH EMPOWERMENT AND JOB CREATION IN THE 21ST CENTURY

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Abstract

In recent time, there has been increasing global concern over the continuously expanded rate of unemployment around the world, particularly in most developing countries, where the youths have been identified as the most affected groups. This is as a result of the government and its stakeholder's inability to give education the desired attention. Sound education equips youths to challenge the status quo and proffer better alternatives as the way out of the present economic quagmire. It is argued that a new paradigm shift is needed in the area of school curriculum to lead the way to reform present practices; it has to be analysed occasionally to create a scope that will encompass new disciplines and areas to make it appropriate to the prevailing situation. The task of producing skilled human resource development for youth empowerment, job creation in the society lies with the quality of our school curriculum. The effectiveness of the school curriculum depends on how lots the school is fulfilling the needs of the learners, the society and the educational objectives. This paper offers; concept paradigm shift, why paradigm shift in the secondary school curriculum, concept of youth empowerment and job creation, benefits of paradigm shift in secondary school curriculum, challenges to paradigm shift in secondary school curriculum, conclusion and recommendations proffered as part of initiating a paradigm shift in secondary school curriculum in Nigeria for youth empowerment and job creation in the 21st century.



Keywords: *Paradigm shift, Secondary school curriculum, Youth empowerment, Job creation*

Introduction

The most effective weapon developed by a human being is education. Through education, human beings conquer over other animal and commence to explore the universe. Education has been widely acknowledged as an instrument for achieving socio-economic growth and national development. This is true of the fact that it is through well planned and implemented educational systems that advanced nations of the world have achieved high level of socio-economic growth and national development. In the light of this, Okai Padung and Rukaiya (2016) affirm that education is the hub on which every nations development evolved, it is also of a remarkable benefit in terms of the institutionalization and promotion of cultural inclusive behavior. No wonder Okolo (2010) viewed education as the key to solid development of the individual for the acquisition of competencies necessary for self-development and national development. The system of education in the different countries varies according to the varied socio-cultural diversity and social needs. Its modifications happen very swiftly because of which the social desires additionally get modified on occasion. Lesufi (2017) posited that the current socio-economic demands and challenges posed by the fourth industrial revolution require an altogether new paradigm shift in our education systems. In corroboration, Goodwin in Sikhakhane, Govender and Maphalala (2020) propounded that shifts in pedagogical practices are necessary in alignment with pervasive digital technology in the interest of the changing times. With regard to these enlightenments, pedagogical strategies have to transform alongside digitization as technology proved to be equally influential and pervading all spheres of our lives the world over. Congruently, Sikhakhane, Govender and Maphalala (2020) posited that the aforementioned teaching strategic-shifts promulgates 21st century pedagogies that enable schools and surrounding areas to address issues of learners' engagement, challenges, achievement and disciplines so as to prosper in the 21st century world of work.

Ofegbulu and Okanwa (2018) acknowledged that the function of developing the future citizens is entrusted to the schools. Organizing efficient school curriculum for its children is one of the primary responsibilities of government and its stakeholders. The efficiency of the school system can be ensured not by providing a magnificent building to it, but by organizing an efficient curriculum on ideal lines in every way. To this end, for secondary schools to achieve its goals and objective effectively, a paradigm shift in school curriculum is needed to foster the building of learners and empowered them for job creation in the present global challenges facing Nigeria and the world at large.



Concept Paradigm Shift in Education

The word *paradigm* comes up a lot in the academic, scientific, and business worlds. A new paradigm in business could mean a new way of reaching customers and making money. In education, relying on lectures is a paradigm: if you suddenly shifted to all group work that would be a new paradigm. When you change paradigms, you're changing how you think about something (Wikipedia 2020).

A paradigm of education refers to a way of thinking about the purpose of education, the meaning of learning, and the roles of teachers and students. Paradigms of education influence how students are taught and assessed and what is valued and included in the curriculum.

Mackenzie and Knipe (2006) in educational research the term paradigm is used to describe a researcher's 'worldview'. This worldview is the perspective, or thinking, or school of thought, or set of shared beliefs, that informs the meaning or interpretation of research data. A framework containing the basic assumptions, ways of thinking, and methodology that are commonly accepted by members of a scientific community. Such a cognitive framework shared by members of any discipline or group. The Oxford English dictionary defines a *paradigm* as "a pattern or model, an exemplar; a typical instance of something, an example" The historian of science Thomas Kuhn gave the word its contemporary meaning when he adopted the word to refer to the set of concepts and practices that define a scientific discipline at any particular period of time. In his book, *The Scientific Structure of Science* (first published in 1962), Kuhn defines a scientific paradigm as: "universally recognized scientific achievements that, for a time, provide model problems and solutions to a community of practitioners."

Paradigm shifts tend to appear in response to the accumulation of critical anomalies as well as in the form of the proposal of a new theory with the power to encompass both older relevant data and explain relevant anomalies. New paradigms tend to be most dramatic in sciences that appear to be stable and mature, as in physics at the end of the 19th century. At that time, a statement generally attributed to physicist the lord Kelvin famously claimed, "There is nothing new to be discovered in physics now. All that remains is more and more precise measurement." Five years later, Albert Einstein published his paper on special relativity, which challenged the set of rules laid down by Newtonian mechanics, which had been used to describe force and motion for over two hundred years. In this case, the new paradigm reduces the old to a special case in the sense that Newtonian mechanics is still a good model for approximation for speeds that are slow compared to the speed of light. Many philosophers and historians of science, including Kuhn himself, ultimately accepted a modified version of Kuhn's model, which synthesizes his original view with the gradualist model that preceded it. Kuhn's original model is now generally seen as too limited.



Some examples of contemporary paradigm shifts include:

- i. In medicine, the transition from "clinical judgment" to evidence-base medicine
- ii. In social psychology, the transition from p-hacking to replication
- iii. In software engineering, the transition from the Rational Paradigm to the Empirical Paradigm
- iv. In artificial intelligence, the transition from classical AI to data-driven AI (Wikipedia 2020)

Why Paradigm Shift in the Secondary School Curriculum?

Secondary education; which is the second level of education is the pivot through which young minds are trained. Secondary education is aim at preparing the youths for useful living and in preparation for higher education (FRN, 2013). Therefore, the secondary school curriculum should be geared towards equipping youths for gainful living in the society; it should teach specific skills to equip individuals for work, (Onwuka, in Ladewo, Bonet and Padung, 2021). Due to the fact that education is dynamic, as the society changes, educational curriculum must also change to meet up with the changing demands of the society. It should be said that relevance of curriculum change is not only for the nation but mostly to the individual youths as a driving force to leverage them from object poverty and make them self-reliant, empowerment and job creation. The success of many nations in tackling major developmental problems such as poverty, unemployment, among others can be traced to their educational system. Based on the challenges faced by distressed economics, the need for creativity in education is needed like never before.

Over the past two decades the Nigerian government has made concerted effort to improve the quality of secondary education in the country. One of the main objectives of post-basic education is to provide entrepreneurial, technical and vocational job-specific skills for self-reliance, and for agricultural, industrial, commercial and economic development (FRN, 2013). The present curriculum structure touches all areas of human endeavour and centres on local and global needs. It provides for a wide choice of areas of concentration to cater for varied interests and abilities of individual learners as well as meet up with the global aspiration of making education relevant to the development of the individual and the society. The trades and entrepreneur subjects are to ensure the youths develop creative skills for survival with the assurance of job creation and the resultant poverty reduction. But has this objective been realized? The younger generation of the country is going through a massive unemployment issues and frustration. It is going on because of the whole mismatching among the market demand and the educational qualifications of the educated youth. The market demand calls for knowledgeable qualifying particular



vocation or professional skill person; however, our secondary school graduates have a few scopes for vocational courses. There is a mismatch between the current market demand and the academic qualifications. The young generation should be well equipped with vocational qualifications to suit the market demand and be self-sustainable. The school curriculum should be a frame in such a way to best suit the recommendation of National Education Policy 2013 for it to achieve its objectives. There is need for secondary school curriculum to support learners for careers, opportunities, progressive employment, and training for the job creation and empowerment in the world of work.

Hurt, Moses, *et al* in Nkoyo (2021) is of the view that the use of learner-centric teaching has not been explored. Teachers teach practical courses theoretically curtailing students' acquisition of expected practical skills. In line with this, Mbarika, Bagarukayo, Hingorani, Stokes, Kourouma, Sankar in Nkoyo (2021) observed that, teachers concentrate more on theoretical teaching than practical's leading to mismatch between what students expect and what educationist deliver. To be prepared for the complex and rapid changing work demands student to be endowed with analysis, critical thinking, decision-making and problem-solving skills to effort them the ability to learn in their learning preferences for enhanced skills acquisition and productivity.

Gire, Ivagher, Uwalaka (2021) disclosed that for the nation to attain effective functional basic education for sustainable national development, there should be a form of re-structured curriculum with a shift from subject centered learning to skill acquisition, personal development and orientation of every individual learner. There should be individual autonomy, communication, collaborative learning skills, application of knowledge and value development through new innovations. It is important that the Nigerian education system free herself from the shackles of theoretical form of education handed down from the colonial masters to a relevant, practical and comprehensive education while interest and ability should determine the individual's direction in education (Aluwong in Iheme and Iheme, 2021).

Nigeria should take a cue from other developing nations that are making concerted effort in tackling the issue of unemployment and job creation. For example, in India, the recent policy on education called National Education Policy (NEP) 2020 has given space to the rationalization of education. It has aimed to provide every child the exposure to at least one vocation, commencing from the middle stage of school education, right up to higher education. The policy has recommended that, by 2025, at least 50% of students, both in school and higher education, would be given exposure to vocational programs. For that, the possibilities of Open and Distance Learning (ODL) would also be explored and that the Ministry has constituted a National Committee for the Integration of Vocational Education (NCIVE). It has also recommended the revision of the National Skill Qualification Framework (NSQF) which would be required obviously for creating some more levels to accommodate the middle stages of school education and aligning different levels with the upcoming



trades, (Prakash in Tyrum, 2021). This will go a long way in addressing the problem associated with unemployment, job creation and empowerment in the country.

Concept of Youth Empowerment and Job creation

Stella, Nwosu, Mathew (2021) are of the view that job creation has to do with designing work to be done by individuals for which they are paid for accomplishing such task. The creation of job can be possible if the graduate has acquired entrepreneur and vocational skills needed to create or secure job either in industrial establishment or become self-reliant individual by setting up personal firm capable of employing others. Also, Anyadike, Emeh and Ukah in Stella, Nwosu and Mathew (2021) asserted that job creation has emerged as the single most critical economic challenges facing the world today. Creating job as an entrepreneur is a function that an individual has to learn on how to strategically scan the environment for the purposes of identifying immediate needs of the society and possibly provide the needed solutions. In the attempt to provide the needed solutions to societal problems, process are set in motion and it is the processes put in motion that open up the opportunities for engagement of human effort called job creation. Jobs are said to be created when firms are established by entrepreneurs and require people with requisite skills to apply for existing vacant positions. It can then be said that job creation is the act of providing jobs for the unemployed, either by helping them to create jobs for themselves or providing a paid jobs where they can get salaries or wages as the case may be. Ojiefu in Stella, Nwosu and Mathew (2021) reported that rising unemployment and the low entrepreneurial drive amongst school leavers in Nigeria led to the need to reposition secondary schools system as centers for building self-sustaining graduates that will be future captains of industries.

Empowerment is seen as the act of providing opportunities for individuals to develop their skills to become problem solvers and decision-makers without becoming a problem to the society (Cray, Nguyen, Pranka, Schild and Whitecomb in chuku-A kwu, Onuodu, Ehiodo, 2021). Empowerment – ‘power within’ and power with’- generates collective action for reducing societal inequalities, securing more equitable access to labour, land and financial markets and the development of more responsive and accountable state institutions (Eyben, Kabeer and Cornwall in in Ladewo, Bonet and Padung, 2021). Empowerment is a process that challenges our assumption about the way things are and can be. It challenges our basic assumptions about power, helping, achieving, and succeeding, (Czuba, in Ladewo, Bonet and Padung, 2021). Every society has the responsibility of preparing it youths for survival and continuity giving them opportunity to contribute to the development and sustenance of their generation.



Benefits of Paradigm Shift in Secondary School Curriculum

A paradigm shift in secondary school curriculum will help to:

- a. Develop a healthy attitude towards work and life;
- b. Curb out the unemployment problem;
- c. Reduce the market demand for skilled manpower;
- d. Prepare students for identified vocations spanning several areas of activity;
- e. Self-entrepreneurship and employment attitude, knowledge, and skills will develop among the students;
- f. Deprived section of society, women and rural students will also get the opportunity to fulfill their dream through skill acquisition, and
- g. Make the skilled student technicians, (Tayum, 2021).

Challenges to Paradigm Shift in Secondary School Curriculum in the 21st Century

The following are the challenges to paradigm shift in secondary school curriculum:

- a. ***Inadequate Qualified Teachers*** - Education brings about behavioural change and teachers are the change agents. Therefore, anything that affects teachers affects the entire education system. The new subjects that were introduced into the curriculum especially the trades and entrepreneur subjects as well as computer studies which are now compulsory need to be handled by teachers who are specialists in those areas. At the moment, there are no enough such specialized teachers. Studies show that most classroom teachers are not computer literate (Duguryil, Duguryil and Katnyon in Adegboye, 2020).
- b. ***Total Dependence on Examination as an Assessment Tool***- Assessment of learning outcomes should lay more emphasis on psychomotor and affective behaviours of students rather than on cognitive behaviours as has been the case. It is the acquisition of skills and the right attitude that are more important in transforming the nation into an industrialized self-reliant nation (Adegboye, 2020). The author further observed that much dependence on examination which most times concentrates on the assessment of cognitive learning has resulted in producing half-baked young graduates which can neither be self-employed nor fit into the labour market.



- c. **Poor Infrastructure and Material Resources-** For this program to succeed, emphasis must be placed on the acquisition of skills through learning and doing, which is hands-on-minds-on. Learning by doing or hands-on experience takes place in laboratories and workshops which are well equipped. These facilities are not functional in most schools of the federation. Most laboratories are empty rooms with little or no laboratory equipment (Osuafor and Okoli in Adegboye, 2020).
- d. **There is a serious deficit of trained professionals that meet modern business needs.** Our job market has changed significantly. Our old education system is based on the industrial revolution and the labor needs of that system. We can't raise our children that way anymore since the labor market needs people with different skills. Instead of knowing how to do one thing well, businesses need people who can innovate intelligently.
- Creativity, teamwork, conflict resolution, critical thinking, leadership ability, and innovative ideas are things that businesses are looking for in people's resumes. Consequently, it's important to study the right thing and be capable of doing a lot of things. That's the only way you'll be able to face the future.
- e. **Inadequate Textbooks** - Mandate was that before the commencement of the new programme, which is the implementation of the new curriculum in September 2011, year one book of SS education, would have been in the market. The textbooks are not readily available at stores and shops.
- f. **Incessant Strikes** - Nigerian education system is bedeviled by incessant strikes by classroom teachers at all levels. It has become the norm. Strikes most times are associated with the poor condition of service. Sule in Adegboye (2020) associated the incessant strikes and unrest among teachers to conflict and disagreements between teachers and the managers of educational institutions as well as government arising from unpaid or poor salaries and allowances, inadequate and uncondusive learning and teaching environment.

Conclusion

The Secondary education curriculum structure has all it takes to advance the country scientifically, technologically, industrially and socio-economically. It is assumed that there should be a paradigm shift in the school curriculum by exploring the various areas and remove the obsolete information's from the curriculum. Technical and vocational courses should be thought practically away from the traditional theoretical



method of teaching. The traditional subject should be explored and analyze properly to give space for a flexible and need-based curriculum. Distress times calls for choice and priorities setting. The Nigerian educational system should make a paradigm shift in its curriculum to a more practical oriented one that will empower its graduates to empower others and revive the distress economy to a developed economy. It, therefore calls for a concerted effort of all the stakeholders – the government, teachers, students, parents, philanthropists, book writers and publishers to tackle the challenges facing its implementation and create a conducive environment for its sustainable success for empowerment and job creation in the 21st century.

Recommendations

- a. Employment of Specialized Teachers - Young graduates who have specialized in any of these trade subjects should be given automatic employment after their National Youth Service Corps. Those of them that did not graduate from education should be encouraged to go for in-service training in education while at work to enable them to acquire the teaching methodology skills.
- b. Secondary schools should be adequately equip with the relevant tools to enable the learners acquire the needed skills through proper funding. Learning by doing or hands-on experience takes place in laboratories and workshops. These laboratories and workshops are not functional if available in most schools of the federation. Most laboratories are empty rooms with little or no laboratory equipment because of poor funding.
- c. Provision of ample opportunities for teachers to practically demonstrate their acquisition and mastery of desirable knowledge, skills and values through seminars, workshops and practical teaching and learning exercises.
- d. Remuneration of Teachers - Encouragement and special incentives should be given to teachers. Such encouragement can be in form of prompt and regular payment of salaries and promotion as and when due to avoid stagnation. Outstanding performance by a teacher should be properly recognized and rewarded. If these are done, the incessant strikes will be reduced, teaching will become more attractive and the issue of brain drain to areas of greener pasture will be a thing of the past.
- e. Provision of Textual Materials - Authors and interest groups should be encouraged to write books in the new ‘trades’ subjects. NERDC should also review the books and recommend the good ones to schools. School libraries need to be stocked with relevant textbooks and other literature while students are guided on how to make use of them.



- f. Monitoring and Evaluation - Evaluation and monitoring systems are critical for ensuring sustained interest and commitment in the development of science and technology programme and indeed, education in general. Education is a business enterprise and like any other business, needs proper monitoring by the authorities that be. No business can progress without adequate checks and balances and education is not an exception. There must be adequate monitoring of the newly restructured secondary curriculum at every stage of its implementation to ensure compliance by all concerned and that the available resources are properly managed.
- g. Professional Development of Teachers - The serving teachers need to be abreast with global educational changes and innovations. There should be continuous in-service training of teachers both within and outside the country. There is a need to sponsor teachers to International Conferences for them to interact with their colleagues in other countries and acquaint themselves with developments elsewhere that will be of interest to the Nigerian educational system.

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CHAPTER 55

EFFECTS OF HYBRID LEARNING ON ACADEMIC PERFORMANCE OF STUDENTS IN CHEMISTRY IN SECONDARY SCHOOLS IN ONDO STATE

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Abstract

The study investigated the effects of hybrid learning on the academic performance of senior secondary II students in Ondo state, Nigeria. The study employed a quasi-experimental non-randomization control group design. The population was one hundred and twelve (112) SS II intact classes, 52 and 60 were in experimental and control groups respectively. Two research questions were raised to guide the study and two hypotheses were formulated and tested at 0.05 level of significance. The study employed two researcher-designed instruments for data collection: “Chemistry Performance Test” (CPT) and “Chemistry Retention Test” (CRT) which were validated, with a reliability coefficient of .82 and .77 respectively determined using Cronbach’s Alpha. The test measured the students’ pre-test, post-test and retention. The data obtained were analysed using mean, standard deviation and Analysis of Covariance (ANCOVA) tested at 0.05 level of significance. The result from the study indicated that senior secondary school II students taught Chemistry using hybrid learning performed better than those taught using the expository method at post-test, the study also found that the students in the experimental group had better retention than those in the expository method. Further findings reveal there was a significant difference between their performance and retention scores. The study concluded that hybrid learning improves the performance and retention of students in Chemistry. The study recommends among others that teachers should make effective use of hybrid learning in the teaching of chemistry and also develop the competence needed to moderate the hybrid learning platform to ensure they are able to carry out necessary engagements pertaining to hybrid classes.



Keywords: Hybrid learning, Academic performance, Chemistry, Digital technologies

Introduction

The education sector has been actively implementing solutions to enhance teaching, learning, assessment, scientific research, and the application of information and communication technology (ICT) in the context of the rapidly developing scientific and technical revolution (Acosta, *et al.*, 2018; Baris, 2015; Bray and Tangney, 2017; Diabat and Aljallad, 2020). To ensure the progress and effectiveness of students' learning within this context, the education industry has promoted the combination of remote "face-to-face" teaching via television, online teaching via the Internet (Attard and Holmes, 2020; Ho, *et al.*, 2020; Hori and Fujii, 2021; Mukuka, *et al.*, 2021; Pham *et al.*, 2021; Stahl, 2021). This includes the use of commonly used applications, such as Microsoft Teams, Google Meet, zoom (Ho, *et al.*, 2020), Facebook (Barros, *et al.*, 2017), Edmodo, Canva, Blackboard (Omotunde, 2019) which allow for video discussions and screen sharing tools to enable teachers to interact and manage the learning progress of multiple students simultaneously (Sun, *et al.*, 2020). Teaching should involve a combination of intuition and abstract thinking, but students often struggle due to the absence of visual aids. The traditional teaching approach can limit problem-solving opportunities and knowledge acquisition. However, combining teaching with online resources and engagements, images, videos, and other online learning content can make lessons more effective for teachers and engaging for students. These can lead to better learning outcomes, improved teaching and learning, and easier application of concepts. This, therefore, brings to the need for hybrid learning where learners will have their required level of freedom to excel academically.

Hybrid learning is a student-centred form of education that combines elements of both traditional face-to-face classroom (synchronous learning activities) with online instruction (asynchronous learning activities). The idea behind hybrid instruction is that students have the opportunity it combines the advantages of face-to-face interaction with the convenience and flexibility of online collaboration and discussions (Lampton and Hill, 2012). Hybrid learning is a teaching strategy that bridges the gap between accessibility and inaccessibility by allowing learners who live in remote locations to participate in classroom activities which are commonly supported by technology such as video conferencing tools, online discussion forums, and digital learning materials and according to Owston and York (2018) and Lazar, *et al.*, (2020), the ratio between face-to-face and online learning in blended learning varies, but the online learning factor should be between 33% and 50%, and even as high as 80%. Hybrid learning can take many different procedures, depending on the needs and choices of the students and the institution. Digital learning tools as used in hybrid learning, include; High-tech digital learning tools: these include software to support student learning, such as interactive boards, scientific software, applications,



digital teaching software, digital textbooks, and mobile devices (smartphone or tablet); Traditional digital tools: these include digital video support, aerial video projectors, interactive materials, digital assemblies containing interactive resources, and reference content such as lecture notes and dictionaries (Lazar, *et al.*, 2020).

In recent years, hybrid learning has grown in popularity as more schools and colleges have embraced technology to improve students' learning experiences. It can give students more flexibility, tailored learning experiences, and the opportunity to connect with course materials in a variety of ways by combining the benefits of both in-person and online learning. The European University Association (2021) envisions a university without walls, which means it will be open and engaged in society while keeping its essential ideals. They will create an open, transformative place for the production of shared knowledge through research, education, innovation, and culture. It is stated that they will shape the future of a knowledge-driven society in collaboration with other societal stakeholders (European University Association 2021). This continues to emphasize the importance hybrid learning could have in education if fully or correctly applied. These transformative places would seek institutions that transcend traditional dichotomies (O'Byrne and Pytash, 2015). According to Feenberg (2019), digital will be interwoven and intrinsic in everyday actions and interactions in post-digital learning settings.

Science is a vast field of study that encompasses several related disciplines aimed at acquiring knowledge. Chemistry, Physics, Biology, and Mathematics are among the subjects covered. Chemistry is one of the science subjects that is taught at the Senior Secondary School level in Nigeria and it is during this period that Chemistry is initially offered as a separate subject. Chemistry is a relevant and practical science subject that requires a proactive teaching approach with effective student participation in hands-on and minds-on experiences in order to generate knowledge, develop scientific skills, attitudes, and social values that will allow them to contribute to national development (Udofia, 2016). In recent years, secondary school students are referred to as "digital natives" due to their adeptness in using technology to enhance their social interactions, online shopping, and access to educational resources (Prensky, 2001; Proserpio and Gioia, 2007). As a result, there is a need to integrate technology into teaching practices to enhance student engagement and improve learning outcomes.

One of the ways to integrate technology into teaching practices is through the use of hybrid learning which combines both online and face-to-face course delivery methods. By mixing delivery modes, hybrid learning aims to get the most efficient and productive educational experience possible (Garrison and Kanuka, 2004). In the context of Chemistry education, hybrid learning can be implemented by supplementing traditional laboratory experiments with virtual laboratories, simulations, and other online resources. Virtual laboratories have various advantages over traditional laboratory experiments such as increased flexibility, lower costs, and



improved safety (Kirschner, *et al.*, 2006). They also provide students with a more immersive and interactive learning experience which can help them improve their understanding of Chemistry concepts (Sarquis *et al.*, 2021). Simulations, on the other hand, enable students to investigate complex chemical phenomena that would be difficult or impossible to replicate in the laboratory (Kirschner *et al.*, 2006). They also allow students to manipulate variables to observe the impact on Chemical reactions, which can deepen students' understanding of Chemical principles (Yildirim and Sari, 2016).

In addition to virtual laboratories and simulations, online resources such as video lectures, discussion forums, and interactive quizzes can help to improve hybrid learning. These resources provide greater learning flexibility by allowing students to learn at their own pace and repeat difficult concepts as needed (Kirschner, *et al.*, 2006). Discussion forums also encourage collaboration and peer-to-peer learning, which can help students better understand chemistry concepts (Sarquis, *et al.*, 2021).

As noted in the WAEC Chief Examiner's report (2007), poor instruction has been acknowledged as a significant problem leading to poor academic achievement in Chemistry among students in external examinations. Ineffective instructional tactics used by teachers, as well as a lack of visual or audio-visual representations in teaching abstract chemistry concepts, have contributed to the difficulties encountered by many students. As a result, students fail to grasp the subject matter, resulting in negative attitudes toward chemistry and reduced enrollment in senior secondary schools when compared to other subjects. To address these challenges, chemistry teachers need to adopt effective teaching and learning strategies that improve students' understanding of abstract concepts, leading to improved academic performance. Studies have highlighted the effectiveness of using real objects in teaching, such as real specimens of plants or animals and real machines or tools that exist or are used in real-life situations. However, due to the abstract nature of chemistry, these tactics do not completely suit the learning needs of students.

In response to these challenges, researchers have explored various strategies to improve students' learning outcomes in chemistry. These strategies include student teams-achievement divisions (STAD) strategy, exploratory, discovery, and expository instructional strategies (Njoku, 2007; Adesoji and Ibraheem, 2009). However, despite the benefits of these strategies, they have not entirely addressed the challenges faced by students in learning chemistry. Therefore, there is a need for innovative teaching strategies that can effectively enhance students' understanding of abstract chemistry concepts. One such strategy is hybrid learning, which allows for the integration of multimedia resources, interactive activities, and real-life examples into classroom instruction, making the learning experience more engaging and interactive for students. It is on this premise that this study seeks to investigate the effect of hybrid learning on students' academic performance in chemistry in secondary schools in one state.



Literature Review

Several studies have focused on the use of blended learning and its impact on students' academic achievement. A study conducted by Ukpong and Akpan (2020) in Eket, Akwa Ibom State, investigated the effects of blended learning and expository instructional strategies on students' academic performance in Chemistry. The results showed that the blended learning approach significantly improved students' academic performance in Chemistry, particularly in the areas of understanding abstract concepts and problem-solving. Further, Aziz, Talib, Tajularipin, and Kamarudin (2021) investigated the effectiveness of blended learning towards students' performance in Electrochemistry topic among Malaysian secondary school students. The findings of this study revealed that blended learning and traditional learning had improved students' performance in Electrochemistry. However, there was a significant difference in the mean scores of the electrochemistry performance post-test between the blended learning group and the traditional learning method group. The findings in this study revealed that blended learning is more effective than traditional learning methods in improving students' performance in Electrochemistry.

Also, Aniefiok and Mfon (2020) examined the effects of blended learning and expository instructional strategies on senior secondary school students' performance based on the concept of atomic structure. The results obtained showed that blended learning is more effective in facilitating students' academic achievement and retention of the concept. The findings showed that students taught using the blended learning strategy retain the concepts taught significantly better than those taught using the expository strategy. This finding is an indication that hybrid learning technique is a suitable way to improve students' performance. Onyenma and Olele (2020) investigated the effect of blended learning on students' retention of physics in federal colleges of education in southeast, Nigeria. The study found that blended learning increased the retention of Physics by students who participated in the study. It was also found that the retention of the Physics contents by the students was not dependent upon their gender. This is to say that using modernized techniques in teaching science subjects may be a way to improve the retention of students when taught in a hybrid environment. Therefore, it is clear that blended learning has been adopted in various topics at different levels.

In conclusion, poor teaching and inadequate instructional strategies have contributed to poor academic performance in Chemistry among students. Innovative teaching and learning strategies such as hybrid learning can enhance students' understanding of abstract concepts in chemistry, leading to improved academic performance.



Statement of the Problem

Students' academic performance is a crucial factor in determining their progress from one level to another. Unfortunately, many chemistry students struggle with abstract concepts, resulting in poor performance and even a dislike for the subject. The persistent issue of poor performance in chemistry is a major concern for teachers, parents, and other education stakeholders. Over the years, researchers have attempted to address the problem of failure and poor performance among secondary school chemistry students. Several factors have been identified, however, one of the key factors is the ineffective teaching strategies used by teachers in the classroom. As a result, there is a need to investigate how hybrid learning can improve the academic performance of students in the chemistry subject.

Research Questions

The following research questions were raised to guide the study;

1. What is the difference in academic performance of students taught chemistry using hybrid learning and those taught using expository teaching method?
2. What is the difference in retention of students taught chemistry using hybrid learning and those taught using expository teaching method?

Hypotheses

The following null hypotheses were raised and tested at 0.05 level of significance.

- H₀₁** There is no significant difference in academic performance between students taught chemistry using hybrid learning and those taught using expository methods.
- H₀₂** There is no significant difference between retention scores of students taught chemistry using hybrid learning and those taught using the expository method.

Methodology

The study employed a quasi-experimental (non-equivalent) using a pretest-posttest control group design. The design is appropriate because it helps in establishing a cause-effect relationship between the variables (independent variable i.e., hybrid learning) and (dependent variables i.e., academic performance and retention). Two intact classes were used as experimental and control groups because it is not possible to disrupt existing classes. The study was conducted in two secondary schools in Ondo



state. The population comprised one hundred and twelve (112) SS II Chemistry students. Class A used for the experiment had 52 students, while Class B for the control group has 60 students. The instrument used for data collection was two researcher-designed instruments titled “Chemistry Performance Test” (CPT) and “Chemistry Retention Test” (CRT). The instrument had 20 multiple-choice item questions, and had option A-D, with only one correct answer and three wrong options. Each question had 5 marks attached to it, making a total of 100 marks. The reliability coefficient of the instruments was .82 and .77 respectively obtained using Cronbach’s Alpha reliability statistic. Mean and standard deviation was used to answer research questions, while Analysis of Covariance was used to test hypotheses at 0.05 level of significance.

Results

Research Question 1

What is the difference in academic performance between students taught chemistry using hybrid learning and those taught using expository teaching method?

Table 1: Mean and Standard Deviation of Pre and Post Test Scores of students taught Chemistry using hybrid learning and those taught using the expository method

Groups	N	Pretest \bar{x}	SD	Post-test \bar{x}	SD	Mean Gain	Mean Diff
Experimental Group	52	41.25	5.76	61.92	8.05	20.67	
Control Group	60	43.75	6.41	50.16	6.24	6.41	14.26
Total	112						

Table 1 reveals the difference in academic performance of students taught chemistry using hybrid learning and those taught using the expository method. The Table indicates mean scores of 41.25 and 61.92 for the experimental group in the pre-test and post-test. The Table further shows the pre-test means of 43.75 and post-test means of 50.16 for the control group with a mean difference of 14.26 between the two groups in favour of the experimental group (hybrid learning). This shows that there was an improvement in the post-test scores of the experimental and control groups but the experimental group had a higher mean gain score of 20.67 as against 6.41 for the control group. The finding is an indication that applying the use of hybrid learning in teaching chemistry enhances the academic performance of students in the subject.



Research Question 2

What is the difference in retention of students taught chemistry using hybrid learning and those taught using expository teaching method?

Table 2: Mean and Standard Deviation of Pre-test and Retention scores of Chemistry students taught using hybrid learning strategy and those taught using the expository teaching method

Groups	N	Pre-test \bar{x}	SD	Retention Test \bar{x}	SD	Mean Gain	Mean Diff
Experimental Group	52	41.25	5.76	63.36	7.18	22.11	
Control Group	60	43.75	6.41	52.33	6.79	8.58	13.53
Total	112						

Finding in Table 2 indicates the means of 41.25 and 63.36 for the experimental group for pre-test and retention scores. The table further shows the pre-test means of 43.75 and 52.33 for the retention scores of the control group with a mean difference of 13.53 between the experimental and control groups. This shows that there was an improvement in the retention test scores of the two groups but the experimental group (hybrid learning) has a higher mean gain score. The finding implies that the use of hybrid learning improves the retention abilities of students taught Chemistry more than those taught using the expository Teaching Method.

Hypothesis 1

There is no significant difference in academic performance between students taught chemistry using hybrid learning and those taught using expository methods.

Table 3: Summary of Analysis of Covariance (ANCOVA) of students' academic achievement taught using hybrid learning and those taught using the Expository Teaching Method

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	168.648 ^a	6	28.108	.318	.926
Intercept	97588.811	1	97588.811	1103.280	.000



Pretest	168.648	6	28.108	.318	.926
Error	9287.602	105	88.453		
Total	356000.000	112			
Corrected Total	9456.250	111			
a. R Squared = .018 (Adjusted R Squared = -.038)					

Table 3 reveals that there is no significant difference in academic performance between students taught chemistry using hybrid learning and those taught using expository methods { $F(1, 111) = 1103.280, p = 0.00 < 0.05$ }.

Hypothesis 2

There is no significant difference between the retention scores of students taught chemistry using hybrid learning and those taught using the expository method.

Table 4: Summary of Analysis of Covariance (ANCOVA) of students' retention when taught using hybrid learning and those taught using the Expository Teaching Method

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	721.096 ^a	5	144.219	3.464	.010
Intercept	129801.830	1	129801.830	3118.017	.000
Retention	721.096	5	144.219	3.464	.010
Error	1914.962	46	41.630		
Total	211425.000	52			
Corrected Total	2636.058	51			
a. R Squared = .274 (Adjusted R Squared = .195)					

Table 4 reveals that there is no significant difference in academic performance between students taught chemistry using hybrid learning and those taught using expository methods { $F(1, 51) = 3118.017, p = 0.00 < 0.05$ }. The finding is an indication that hybrid learning as a strategy for teaching chemistry enhances and improves students' retention in Chemistry.



Discussion of Findings

Results from research question one and hypothesis one revealed that senior secondary school II students taught Chemistry using hybrid learning performed better than those taught using the expository teaching method. The study also found a significant difference between the two groups. The finding from the study is in agreement with Aniefiok and Mfon (2020) who investigated the effects of blended learning and expository instructional strategies on senior secondary school students' performance based on the concept of atomic structure. The results obtained showed that blended learning is more effective in facilitating students' academic achievement and retention of the concept. The finding means that students taught Chemistry using hybrid learning have better chances of improved performance than those taught using the expository method of teaching. This finding is also in agreement with the findings of Aziz, Talib, Tajularipin, and Kamarudin (2021) that blended learning improved students' performance in Electrochemistry and there was a significant difference in the mean scores of the electrochemistry performance post-test between the blended learning group and the traditional learning method group.

The results from research question two and hypothesis two revealed that senior secondary school II students taught Chemistry using hybrid learning had a better retention score than those taught using the expository teaching strategy. The result also revealed a significant difference in students' retention of Chemistry when taught using hybrid learning. This means that the students in the experimental group significantly retained after the pretest. The finding from the study is also in agreement with Onyenma and Olele (2020) who found that blended learning increased the retention of Physics by students who participated in the study. This is to say that using modernized techniques in teaching science subjects may be a way to improve the retention of students when taught in a hybrid environment.

Conclusions

Based on the findings of the study, it is concluded that hybrid learning is more effective in facilitating students' academic performance in chemistry. Also, the teaching strategy improved the retention of students as compared to students in the expository strategy.

Recommendations

Based on the findings of this study, it is recommended that:

1. Chemistry teachers should make effective use of hybrid learning strategies in the teaching of chemistry.



2. Chemistry teachers should develop the competence needed to moderate the hybrid learning platform to ensure they are able to carry out necessary engagements pertaining to hybrid classes.
3. Curriculum planners should incorporate the hybrid method into teaching and learning chemistry, thereby concretizing learning and hence improving students' academic performance.
4. Government, in collaboration with other professional organizations such as STAN, should make every effort to organize and sponsor frequent workshops, seminars, and conferences to train Science teachers in the use of blended learning teaching strategies.
5. Pre-service and In-service teachers should be taught in the development and application of blended learning teaching strategies.
6. The government through its agencies should make available broadband for teachers and students to partake in hybrid classes for improved retention in Chemistry.

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CHAPTER 56

EFFECT OF PSYCHOTHERAPEUTIC TECHNIQUES ON PSYCHOLOGICAL DISTRESS AMONG IN-SCHOOL ADOLESCENTS WITH HEARING IMPAIRMENT IN OYO STATE, NIGERIA

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Abstract

This study examined the incidence of psychological distress, its predicting factors and therapies for managing the condition among in-school adolescents with hearing impairment in Oyo State, Nigeria. Consequences of hearing impairment (H.I), which include anxiety, isolation, low academic performance, withdrawal from peer relationships, and some times, suicidal ideation have been reported to be some of the factors responsible for the condition. The objective of the study was investigating the effect of Cognitive Behavioural Therapy (CBT) and self-management therapy (S-MT) on psychological distress among adolescent learners with hearing impairment in Oyo state, Nigeria. The moderating effect of onset of hearing impairment, as well as self-esteem were also examined. Beck's cognitive Behavioural and Rehm's self-control group quasi – experimental design with a 3 x 2 x 2 factorial matrix was adopted. Three secondary schools having unit for the hearing impaired were selected. Through the Kessler Psychological Distress Scale, Sixty-nine students with hearing impairment, having the score of 19 and above were selected to be included in the study. The schools were randomly assigned to CBT (31), S-MT (16) and Control (22) groups. Instrument used were Kessler Psychological Distress Scale ($r = 0.3$), Clinical Outcomes in Routine Evaluation ($r = 0.1$) and Rosenberg Self-esteem Rating ($r = 0.78$) scales instructional guides. The treatment lasted 10 weeks. Data were analysed by using Analysis of Covariance and Scheffe post-hoc test at 0.05 level of significance. Participants' age was 18.54 ± 2.36 years. 54.0% were male, 56.0% had acquired hearing impairment while those with congenital impairment were 44.0%. Their self-esteem was observed to be low (36.4%).



The treatment had a significant main effect on the management of psychological distress ($FC 2.57 = 107.38$; $\text{partial } \eta^2 = 0.79$). The participants in CBT had the most reduced psychological distress (6.35), followed by those in S-MT (7.02) and Control (16.35) groups. No significant main effects of onset of hearing impairment and self-esteem on the management. The study recommended that the stakeholders will look beyond the conventional classroom assessment patterns, when dealing with adolescents with hearing impairment by engaging CBT and S-MT, as psychological distress could be a major barrier to achieving the goals of teaching and learning.

Keywords: *Psychological distress, Self-esteem, Hearing impairment, Cognitive behavioural and self-management therapies*

Introduction

Psychological distress has been described as a mental health challenge, whereby an individual's feelings or emotions, usually as a reaction, impacts negatively on his status of operation. When issues of life deviate from the norm, it could place a pressure or (a new /recurring) demand on an individual either psychologically, physiologically or in behaviours, and in some cases, it could involve all the terms. This stressful condition could either become eustress or a distress. Eustress is seen as a positive response to a new demand or stress by engaging adaptive techniques. This adaptive measure elicits positive emotion to propel action and continuation. It is regarded as constructive stress. On the direct opposite is the distress, a condition whereby a negative response to stress elicits an emotion of dissatisfaction and so causes disengagement. Therefore distress is described as a destructive response (Pluut, Curseu and Fodor, 2022).

Psychological distress, in a broad term, is regarded as a disruption of one's mood state, comprising of identifiable traits of depression and anxiety consequent on an unachievable goal, due to a (new) demand. The individual could begin to manifest some maladaptive behaviours and invariably affecting his day-to-day functioning. An impaired frame of mind or psychological status will not be productive.

The World Health Organisation (2021) presented that an individual is healthy when he is physically, socially and mentally well. This definition of healthy condition focuses on the absence of diseases or impairment as well as the mental wellbeing and adequate social relationship. Further on this concept, Sartorius (2006) emphasised the essence of mental wellbeing whereby an individual, even with the presence of a disease or an impairment will be described healthy based on his state of balance within himself, between himself and his immediate social and physical environment. Hubber and Kipman (2011) however observed that this state of health is unattainable without an individual's 'ability to adapt and self-manage' the situation which they found



themselves. Though this portrays health to be subjective, yet it could be referred to as the key to complete health.

An adolescent with hearing impairment is confronted with at least two major demands of life because there could be some other hidden or less significant challenges. Hearing impairment has been described as a serious challenging health condition in that it could go on for a long time without being noticed, attended to or treated. Consequently, the individual is denied information, and therefore may not conform, or be productive. When detected, if the appropriate measures are not put in place, an individual could be lost in the crowd, lonely, isolated, withdrawn to self and becoming susceptible to various deficiencies of life. Reduction in activities and less mobility could result to psychological distress such as depression and anxiety (Olufemi-Adeniyi, 2021; Adeniyi and Oluokun, 2022). Language development deficiency in form of receptive and expressive skills is prominent among the individuals with hearing impairment especially when the condition is congenitally or pre-lingually impaired. Apparently, the individual will be affected emotionally, socially, cognitively and academically as language is involved in learning and reasoning (Brice and Strauss, 2016). This could be a stressful situation and when not properly managed, can become a distress.

Adolescence is a phase of life in which an individual is neither a child nor an adult. It is a transmission stage of life when growth is recorded, manifesting as physiological, emotional, sexual behavioural and psychological changes. At this stage of life an adolescent tries to carve out his own identity through the challenges and opportunities that come his way. All stakeholders such as the parents, teachers, policy makers/government are expected to assist the adolescents to correctly navigate successfully through the stage as majority are discovered not being able to scale through the “storm and stress” of the stage. Inability of the adolescent to negotiate the demands of this stage leads to social and personal problems and ends up being maladjusted (Ayannuga, 2020). Hearing impairment is quite challenging on its own. Combining it with the stress of adolescence could be disastrous. An adolescent with hearing impairment who is restricted in the use of language, in the midst of his hearing peer, can be described as all alone or being in the dark. At adolescence, one is eager to make more friends by going beyond the old fold, show off himself, gain the attention of the peers and be recognised. These can be achieved through oration in most cases. Limitation is therefore placed on the adolescent with hearing impairment (Olufemi-Adeniyi, 2021). Adolescents with hearing impairment are often psychologically distressed, just like any other members of the society. They are affected by factor such as (early) loss/impairment, inability to relate with peers, feelings of inadequacy, low self-esteem, anxiety anger or liveness (Ayannuga, 2020). The scholar highlighted symptoms of psychological distress to include sadness, dejection, cognitive distortion, lack of concentration, sleep disturbance, anxiety and many more.



Risk factors for presenting psychological distress are better imagined than experienced. Some of the effects are lack of established friendships and the much needed social interactions, difficulties in educational engagements, being vulnerable to abuses, health problems, drug and alcohol abuses, poor scholastic performances, unemployment or being under productive, increase in crime and suicidal ideation. Having listed the risk factors for presenting psychological distress especially by the adolescents with hearing impairment in school setting since education is believed to be a leverage for all, it is very expedient to engage techniques that could enable adolescents with hearing impairment exhibit more efficient relationships, cognitive and emotional behaviours which will yield improved functioning outcomes (Olufemi-Adeniyi, 2021; Ayannuga, 2020). Quite a number of psychotherapies could be employed to manage psychological distress. Some of them include cognitive behavioural therapy, self-management therapy, social skills training and self-efficacy building strategy (Raheem, 2016; Falaye and Afolayan, 2015; Ibudeh, 1991 and Okeke, 2009). This study engaged cognitive behavioural and self-management therapies as it is observed that they have been gaining credence in managing psychological distress (Kehinde, 2012; Raheem, 2016). The moderating effects onset of hearing impairment and self-esteem were also investigated. Cognitive behavioural therapy is centred on the suppositions: that cognitive activities affect behaviour, cognitive movement can be censored for modifications and the modification in turn will bring about the anticipated behavioural reforms (Dobson and Dozorts, 2009). The treatment process involves the therapist guiding the client to identify and modify the latter's dysfunctional beliefs. The therapy targets the cognition, and so much responsibilities are assigned to the cognition in form of assignment. Through collective experimentation, both the therapist and the client design series of probation which are meant to inquire into the client's belief, regarded as an assumption or hypothetical views. The aim is to enable the client to contest the authenticity or otherwise of their dysfunctional belief. Once proven to be incorrect, the client is guided to exchange these with the correct and more appropriate ones. It turns out to affect their behaviour (Beck, 1967; Beck, Rush, Shaw and Emery, 1979).

Self-management is another behaviour therapy for the management of psychological distress. It aims at the following outcomes: assisting the client to obtain highly operational relational system, intellectual and expressive behaviour; modification of the participant's views, assessing disposition to challenging affairs; it aims at helping the client to either move out of the hostile environment which induces stress or better still, adjust by coping with the environment by admitting that such situations are inevitable. Tasks and assignment are given prominent role in self-management therapy. The therapy comprises didactic exhibitions of instructional drills meant to impart skills for adaptation and eventually desired behaviours (Rehm, 1977; Fuchs and Rehm, 1977; Kanfer and Goldstein, 1991).



Purpose of the Study

The purpose of the study is to find out the efficacy of cognitive behaviour and self-management therapies on psychological distress among in-school adolescents with hearing impairment in Oyo state, Nigeria.

Hypotheses

The following hypotheses were formulated and tested at 0.05 of significance:

- 1) There is no significant main effect of onset of hearing impairment on participants' management of psychological distress.
- 2) There is no significant main effect of self-esteem on participants' management of psychological distress.
- 3) There is no significant interaction effect of treatment, onset of hearing impairment and self-esteem on participants' management of psychological distress.

Methodology

The study adopted the pretest-posttest control group, quasi-experimental design with $3 \times 2 \times 2$ factorial matrix. The population of the study comprised in-school adolescents with hearing impairment in Oyo State. Three secondary schools were purposively selected from two senatorial districts of the state. A total number of 190 in-school adolescents with hearing impairment were purposively selected. The Kessler Psychological Distress Scale with index score of 19 and above was administered as the screening tool in identifying 69 in-school adolescents with hearing impairment having psychological distress. There were 37 males (53.6%) and 32 females (46.4%). The participants were of ages 12 to 21. They were randomly allocated to Cognitive Behaviour Therapy (CBT, 31), Self-Management Therapy (S-MT, 16) and Control (22) groups.

Rosenberg Self-Esteem Rating Scale was adopted to rate the self-esteem of the participants while the information for the onset of hearing impairment for each of the participants was obtained from the school management. Clinical Outcomes in Routine Evaluation (CORE-10) was administered on each group member for pretest, after which the each of the groups underwent a 10-week treatment procedure, followed by a posttest. The treatment group 1 was treated with the CBT. While the cognitive procedures involved balanced response, decatastrophising, refashioning beliefs, to mention a few, the behaviour procedures involved initiating and maintaining peer interaction, among others. The treatment group 2 was treated with S-MT, with techniques such as acquiring basic skills needed, obtaining reinforcement



and self-monitoring. Control group consisted of merely distress education which included meaning, sources and indications of distress. No operational method for handling distress was involved.

Results and Discussion

Hypothesis 1: There is no significant main effect of onset of hearing impairment on participants' management of psychological distress.

Table 1: Summary of Analysis of Covariance (ANCOVA) of Post-psychological Distress by Treatment, Onset of Loss and Self-esteem

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1348.026	12	112.336	25.875	0.000	0.845
Intercept	256.480	1	256.480	59.480	0.000	0.509
Pre-Psychological Distress	0.135	1	0.135	0.031	0.861	0.001
Treatment	932.373	2	466.187	107.382	0.000*	0.790
Onset of hearing loss	0.340	1	0.340	0.078	0.781	0.001
Self-esteem	2.275	1	2.275	0.524	0.472	0.009
Two-way interaction effects: Treatment x Onset of hearing loss	11.841	2	5.921	1.364	0.264	0.046
Treatment x Self-esteem	0.828	2	0.414	0.095	0.909	0.003
Onset of hearing loss x Self-esteem	3.236	1	3.236	0.745	0.392	0.013
Three-way interaction effects: Treatment x Onset of hearing loss x Self-esteem	1.330	2	0.665	0.153	0.858	0.005
Error	247.459	57	4.341			
Total	7894.000	70				
Corrected Total	1595.486	69				



Result from Table 1 reveals no significant main effect of onset of hearing on participants' psychological distress ($F_{(1:57)}=0.08$; $P>0.05$, partial $\eta^2=0.00$). The hypothesis was accepted, which implies that the onset of hearing impairment had no effect on the management of the participants' psychological distress.

Hypothesis 2: There is no significant main effect of self-esteem on participants' management of psychological distress.

Table 1 indicates there was no significant main effect of self-esteem on participants' management of psychological distress ($F_{(1:57)}=0.52$; $P>0.05$, partial $\eta^2=0.01$). This hypothesis is accepted, indicating that the status of their self-esteem did not hinder the management of psychological distress.

Hypothesis 3: There is no significant interaction effect of treatment, onset of hearing impairment and self-esteem on participants' management of psychological distress.

Table 1 reveals that there was no significant interaction effect of treatment, onset of hearing impairment and self-esteem on participants' management of psychological distress ($F_{(2:57)}=0.51$; $P>0.05$, partial $\eta^2=0.01$). The hypothesis was accepted. The indication is that these variables do not interact in managing psychological distress among in-school adolescents with hearing impairment.

Table 2: Estimated Marginal Means for Post-psychological Distress by Treatment and Control Group

Treatment	Mean	Std. Error
Cognitive Behavioural Therapy (CBT)	6.35	0.39
Self-Management Therapy (SMT)	7.02	0.54
Conventional Counselling (CVC)	16.35	0.58

Table 2 reveals that the in-school adolescents with hearing impairment exposed to Cognitive Behaviour Therapy (Treatment Group 1) possessed the lowest modified post-psychological distress mean score (6.35) followed by those exposed to Self-Management Therapy -Treatment Group 2- (7.02). The Control group recorded the highest modified post-psychological distress mean score (16.35). Thus this can be coded as $CBT>SMT>CVC$. In order to identify which of the groups caused the



significant main effect, the Scheffe post-hoc analysis was conducted across the treatment groups, with the result presented in the following table:

Table 3: Scheffe Post-hoc Analysis of Post-psychological Distress by Treatment and Control Group

Treatment	Mean	CGT	SMT	CVT
Cognitive Behavioural Therapy (CBT)	6.35			*
Self-Management Therapy (SMT)	7.02			*
Conventional Counselling (CVC)	16.35	*	*	

Table 3 shows that the difference presented by the ANCOVA resulted from the difference between the treatment groups (Cognitive Behaviour therapy and Self-Management Therapy) and then the control group (Conventional Counselling), but not between the two treatment groups.

Discussion

Psychotherapeutics techniques, particularly CBT and S-MT were found to be significant in the management of psychological distress among in-school adolescents with hearing impairment. Moderating variables (onset of hearing impairment and self-esteem) did not have significant effect on the treatment of participants with either pre-lingual or post-lingual impairment, and not minding their status of self-esteem, benefitted from the treatment. These findings are in tune with the growing body of studies which have used psychotherapeutic techniques such as cognitive and behavioural therapies for the management of psychological distress among individuals with hearing impairment (Suarez, 2000; Anderson and Hagnebo, 2003; Jambor and Elliot, 2005; Clark and Bejerot, 2011; Rostami, Movallahi, Younesi and Abbasi, 2014; Williams, Falkum and Matisen, 2015; Pirami, Afshar and Hatami, 2017; Gharashi and Moheb, 2018).

Conclusion

Like any other people, in-school adolescents with hearing impairment do have psychological distress. Previous studies have dwell much on definition, causes and effects of psychological distress among in-school adolescents with hearing impairment. There is paucity of study on the remedy or management of this condition especially in the Sub-Sahara Africa, part of which Nigeria is. Going by the risk factors



attached to experiencing psychological distress by the in-school adolescents with hearing impairment, it is therefore essential to provide remedy or management of the condition this study found out that both CBT and S-MT have significant effect on psychological distress among in-school adolescents with hearing impairment in order to improve the health of these participant, as psychological distress is an integral part of mental health. This will enable the individual to have a refashioned belief and exhibiting more improved behaviours. The effect will reflect on total way of life such as emotional, social, academic and interpersonal relationships.

Recommendations

Based on the findings that hearing impairment, coupled with the stage of adolescence known for “stress and storm”, could be a bad stressor for the in-school adolescent, the study recommended that all stakeholders- parents, teachers, students themselves and the policy makers- should come together to help an in-school adolescent with hearing impairment having psychological distress. Each of the party could learn how the procedures for treating the condition and cooperate with one another to form a team, as their improvement could bring about a turn around their thinking- cognition – and improve the socio-economy of the nation.

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CHAPTER 57

THE INFLUENCE OF PERSONALITY TRAIT AND SELF EFFICACY ON THE PSYCHOLOGICAL ADJUSTMENT OF EMPLOYEE IN IBADAN METROPOLIS

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Abstract

In the recent times, especially in a world where certificates are considered ahead of competence, the factors, such as adjustment, which determine the success or failure of an employee have to be investigated. A good number of organisations have recorded wastage in recruitment and training budget due to their inability or refusal to investigate factors that had been causing brilliant job seekers to fail after professional engagement. This challenge has thus motivated the need to understand the influence of personality trait and self-efficacy on the psychological adjustment of employee in Ibadan Metropolis. The study adopted a correlation design. A total of 353 employee in Ibadan Metropolis using multi stage random sampling technique. Questionnaires consisting of socio-demographic characteristics section, and standardized scales were used to collect data. Pearson Product Moment Correlation and Multiple Regression Analysis were used. The findings showed that level of psychological wellbeing is high ($\bar{x}=3.2 > 3.0$), personality trait ($r = .519$ $P < 0.05$) and self- efficacy ($r = .244$ $P < 0.05$) had significant relationship to psychological adjustment among employees in Ibadan metropolis. The independent variables; personality and self-efficacy made positive joint contribution 38.7% and relative contribution to psychological adjustment among employee in Ibadan Metropolis. Based on the findings, it is recommended that employees should be encourage in the organization on how to developed and maintain good psychological adjustment. One-on-one counseling should be done for



employees who suffer or have low psychological adjustment on how to increase and manage it.

Keywords: *Personality trait, Self-efficacy, Psychological adjustment, employee*

Introduction

Over the years it has been explained that adjustment process is a way in which the individual attempts to deal with stress, tensions, conflicts and meet his or her needs. In this process, the individual also makes efforts to maintain harmonious relationships with the environment. In adjustment, the two crucial factors are the individual and the environment. In the study of the individual, the considerations are the heredity and biological factors, the psychological factors, and the quality of socialization given to him or her. Whereas, the environment includes all the social factors. Every individual from the time he or she steps out of the family and goes to school makes to a long series of adjustments between the whole unique personality trait and the environment (Bhakta, 2016).

Adjustment generally refers to modifications that are used to compensate and to meet special conditions. In the dictionary, the term adjustment means to fit make suitable, adapt, arrange, modify, harmonize or make correspondence. Psychological adjustment is an important area of interest for researchers that how people adopt to different cultural changes and circumstances that take place in their surroundings (Jauregizar, Bernaras, Ibabe and Sarasa, 2012). An individual who is well adjusted is good fit with his environment and have a balance in his abilities, feelings and behaviour. Individuals are continuously developing their potentials in healthy manner to change their environment.

On the part of the new employee, adjustment has been seen as the ability to quickly fit in to the socio-cultural, political, and economic demands of the new work environment without hampering or slowing down the goals of the organisation in the process. It is therefore clear that an employee has a number of variables to contend with within the professional space to ensure a hitch-free and smooth settling down (Alkali, 2016). In succinct terms, these variables or factors could be broadly described as internal and external factors. An employee that would be successful will have to understand and keep tabs on all internal and external factors that could help or hinder his/her adjustment within the new organisation.

Psychological adjustment problem of employees may develop as a result of new challenges faced as they encounter physiological, emotional, and social changes. Some may be worried about the societal acceptance of their physical appearances, their cognitive abilities, peer acceptance, progress in their careers, and even parental demands. When these are not actually handled, psychological adjustment problems



may ensue (Alkali, 2016). Employees' psychological maladjustment may be as a result of poor belief system such as low self-efficacy, since self-efficacy has to do with one's conviction of his ability to handle specific tasks

Concise Dictionary (2012), explain psychological adjustment as mental response of a person to a dread life situation such as death, war and AIDS. When the state of mind in the individual is calm, the person is said to have achieved psychological adjustment. To Colman, (2012), psychological adjustment refers to a phrase used to denote a positive mental health. Therefore, one wonders if this phenomenon would not have effects on adjustment of employees regardless of their individual background. The researcher is thus inquisitive to explore employee's psychological adjustment and whether employee's personality traits would influence their adjustment in communal conflict areas.

Furthermore, personality traits here refer to characteristics that set an individual unique from others. According to Corr, Philip, Matthews and Gerald (2009), the term Personality traits is mentioned, it denotes the Big five factors which are Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. It is believed that these various traits which describe a person are likely to influence students' adjustment either negatively or positively. The concept of Personality Traits has been defined by Gerbino, Alesandri, Vecchione and Caprara (2010) as sum total psychological characteristics of a person that are common as well as unique. He furthers that the term personality traits connote the Big Five personality factors which include Openness to experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. He therefore, characterizes "The Big Five", with an acronym (OCEAN). By adjustment here it refers to the behavioural process of balancing conflicting needs, or needs against obstacles in the environment in terms of varied activity, or exploratory behaviour accompanied by problem solving. To Chauhan, (2010), adjustment suggests how efficient an individual can perform duties in different circumstance which leads to psychological adjustment.

Another potential determinant of psychological adjustment is self-efficacy. Self-efficacy refers to "belief in one's capabilities to organize and execute the course of action required to manage the prospective situation" (Bandura, 2005). People's motives, emotional states, and behaviours are the product of their beliefs, not an objective evaluation of the context (Bandura, 2006). According to social learning theory, self-efficacy is explicitly associated with individuals' competency and their capacity to deal with environmental demands. It is also related to personal agency in the sense that people's beliefs about their determination and enthusiasm directly impact the outcome of their actions. In addition, self-efficacy has been found to be related to expatriate adjustment, a recent research examined the antecedents and consequences of expatriate adjustment, alongside with interpersonal skills (Alkali, 2016).



Self-efficacy has been also conceptualized globally as an individual's consistent capability to effectively function in a wide range of stressful contexts as well as their psychological adjustment. Therefore, from these definitions, it can be inferred that self-efficacy can perform the same function in the context of sociocultural adjustment of students. When students believe that they possess the capabilities to better fit into the host community, they can achieve better sociocultural adaptation. Several scholars have also claimed that highly self-efficacious individuals appear to be goal-oriented, conscientious, indomitable, and adaptable (Bandura, 2006).

In the recent times, especially in a world where certificates are considered ahead of competence, the factors, such as adjustment, which determine the success or failure of an employee have to be investigated. A good number of organisations have recorded wastage in recruitment and training budget due to their inability or refusal to investigate factors that had been causing brilliant job seekers to fail after professional engagement (Alkali, 2016). This is likely to continue unabated except something is done or little more keen attention is paid to the influence and impact of selfconcept, self-efficacy, locus of control and personality trait on self-adjustment of employee in organisations. This challenge has thus motivated the need to understand the influence of personality trait and self-efficacy on self-adjustment and how these constructs affect each other. It then becomes essential for employees to be equipped with knowledge about their personality traits, the reflection of others towards them, their belief about their capabilities to produce designated level of performance, whether or not they ascribe the control of events to themselves or to others so that they can be well adjustment employees in their organisation of work. The level of maladjustment experienced by employees in Nigeria and beyond has been a source of concern to researchers for a while now. Several employees lose their jobs year in year out because of their inability to learn new social skill that will allow him or her to deal with the environment and also because of their personal characteristics which would create a psychological climate in which they can function. Also, when employee do not understand properly understand themselves, how to react to situations beyond their control and even in their control, and their phrenological disposition, these will affect their adjustment level in organisations where they work. Therefore, the concern of this researcher investigates the influence of personality and self-efficacy on the psychological adjustment of employee in Ibadan Metropolis.

Methodology

In this paper, correlational research design was adopted to examine the influence of personality, and self-efficacy on the psychological adjustment of employee in Ibadan Metropolis because the researcher considered it most appropriate since the variables of interest already exist and the researcher to measure the relationship among the



variables. The subjects (target population) for this research include all employees in the 11 local governments that made up Ibadan metropolis, Oyo state. Furthermore, a total of two hundred (200) employee in Ibadan metropolis, Oyo State were considered for this study through multiple sampling techniques. The samples were randomly sorted in these orders of magnitude which consist of three stages; the first stage involved purposive selection of two local governments (Ido and Ibadan North local government) out of the 11 local governments that made up Ibadan metropolis, Oyo state. In the second stage, organizations both private and public sectors will be selected while at the third stage employees were selected using simple random sampling technique procedure. Standardized instruments; psychological adjustment, personality trait and self-efficacy were are used for data collection.

Data was collected among employees and respondents were made to understand the importance of participating in the study and essence of the research. Inferential statistics of Multiple Regression and Pearson product Moment Correlation statistical analysis was considered as statistical tool. Multiple regression analysis was employed to find the joint contribution and relative contribution of the independents variables (personality and self-efficacy) on the dependent variable (psychological adjustment).

Results

Research Question 1: What is the level of psychological adjustment among employees in Ibadan metropolis?

Table 1: Frequency distribution showing the level psychological adjustment

Always=5, Frequently=4, Occasionally=3, Rarely=2, Does not apply=1

Items	1	2	3	4	5	Mean \bar{x}	SD
Considerate of other people's feelings	1(0.3%)	2(0.6%)	21(5.9%)	97(27.5%)	232(65.7%)	4.58	0.657
Restless, overactive, cannot stay still for long	33(9.3%)	41(11.6%)	40(11.3%)	133(37.7%)	106(30.0%)	3.67	1.272



Often complains of headaches, stomach-aches or sickness	33(9.3%)	54(15.3%)	62(17.6%)	94(26.6%)	110(31.2%)	3.55	1.32
Shares readily with other children (treats, toys, pencils etc.	7(2.0%)	33(9.3%)	58(16.4%)	140(39.7%)	115(32.6%)	3.92	1.019
Often has temper tantrums or hot tempers	40(11.3%)	57(16.1%)	66(18.7%)	103(29.2%)	87(24.6%)	3.4	1.319
Rather solitary, tends to play alone	30(8.5%)	34(9.6%)	64(18.1%)	141(39.9%)	84(23.8%)	3.61	1.192
Generally obedient, usually does what adults request	15(4.2%)	28(7.9%)	71(20.1%)	140(39.7%)	99(28.0%)	3.79	1.069
Many worries, often seems worried	13(3.7%)	49(13.9%)	83(23.5%)	130(36.8%)	78(22.1%)	3.6	1.088
Helpful if someone is hurt, upset or feeling ill	7(2.0%)	21(5.9%)	71(20.1%)	143(40.5%)	111(31.4%)	3.93	0.965
Constantly fidgeting or squirming	40(11.3%)	47(13.3%)	66(18.7%)	128(36.3%)	72(20.4%)	3.41	1.265
Has at least one good friend	18(5.1%)	31(8.8%)	72(20.4%)	122(34.6%)	110(31.2%)	3.78	1.132
Often fights with other children or bullies them	70(19.8%)	46(13.0%)	86(24.4%)	90(25.5%)	61(17.3%)	3.07	1.367



Often unhappy, down-hearted or tearful	54(15.3%)	57(16.1%)	83(23.5%)	92(26.1%)	67(19.0%)	3.17	1.33
Generally liked by other children	25(7.1%)	35(9.9%)	84(23.8%)	132(37.4%)	77(21.8%)	3.57	1.144
Easily distracted, concentration wanders	41(11.6%)	73(20.7%)	83(23.5%)	85(24.1%)	71(20.1%)	3.2	1.296
Nervous or clingy in new situations, easily loses confidence	36(10.2%)	72(20.4%)	89(25.2%)	82(23.2%)	74(21.0%)	3.24	1.276
Kind to younger children	18(5.1%)	51(14.4%)	60(17.0%)	109(30.9%)	115(32.6%)	3.21	1.265
Often argumentative with adults	32(9.1%)	86(24.4%)	80(22.7%)	85(24.1%)	70(19.8%)	2.97	1.411
Picked on or bullied by other children	70(19.8%)	76(21.5%)	69(19.5%)	69(19.5%)	69(19.5%)	3.52	1.275
Often volunteers to help others (parents, teachers, other children)	36(10.2%)	41(11.6%)	71(20.1%)	112(31.7%)	93(26.3%)	3.49	1.284
Can stop and thinks things over before acting	38(10.8%)	41(11.6%)	76(21.5%)	107(30.3%)	91(25.8%)	3.04	1.374
Can be spiteful to others	70(19.8%)	55(15.6%)	78(22.1%)	90(25.5%)	60(17.0%)	3.24	1.342
Gets on better with adults than with other children	48(13.6%)	61(17.3%)	83(23.5%)	81(22.9%)	80(22.7%)	3	1.411
Many fears, easily scared	79(22.4%)	53(15.0%)	69(19.5%)	92(26.1%)	60(17.0%)	3.39	1.402



Sees tasks through to the end, good attention span	59(16.7%)	33(9.3%)	65(18.4%)	102(28.9%)	94(26.6%)	3.73	1.52
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Weighted Mean: 3.2

Table 1 above indicates the frequency distribution on the level of psychological adjustment of employees in Ibadan metropolis. “Considerate of other people’s feelings” was ranked highest among employees in Ibadan metropolis with the mean score (\bar{x} =4.58). Followed in succession with mean score of (\bar{x} =3.93) of employees in Ibadan metropolis who can easily identify someone that is hurt, upset or feeling ill, employees in Ibadan metropolis that indicated Shares things readily with other children (treats, toys, pencils, etc.) were ranked 3rd with the mean score of (\bar{x} =3.92), employees in Ibadan metropolis that involve in “Generally obedient, usually does what adults request” were ranked 4th with the mean score of (\bar{x} =3.79), employees in Ibadan metropolis that “Has at least one good friend” were ranked 5th with mean score of (\bar{x} =3.78), employees in Ibadan metropolis that “Sees tasks through to the end, good attention span” were ranked 6th with the mean score (\bar{x} = 3.73), employees in Ibadan metropolis that indicated “Restless, overactive, cannot stay still for long” were ranked 7th (\bar{x} = 3.67), those respondents that were “Rather solitary, tends to play alone were ranked 8th on the list with mean score of score of score (\bar{x} =3.61), respondents with “Many worries, often seems worried” were next ranked with mean score of (\bar{x} = 3.6), followed by “Generally liked by other children” with the mean score of (\bar{x} = 3.57), followed by “Often complains of headaches, stomach-aches or sickness” with mean score of (\bar{x} =3.55), next with “Picked on or bullied by other children” with the mean score of (\bar{x} =3.52), followed by “Often volunteers to help others (parents, teachers, other children)” with the mean score of (\bar{x} =3.49), next was “Constantly fidgeting or squirming” with mean score of (\bar{x} =3.41), next was “Often has temper tantrums or hot tempers” with mean score of (\bar{x} = 3.4), followed by “Many fears, easily scared” with mean score of score (\bar{x} = 3.39), only (\bar{x} =3.24) mean score of employees in Ibadan metropolis were “Nervous or clingy in new situations, easily loses confidence”, next in rank was “Can be spiteful to others” with mean score of (\bar{x} =3.24), followed by “Kind to younger children” mean score of (\bar{x} = 3.2), “Easily distracted, concentration wanders” were ranked next with the mean score of (\bar{x} = 3.2), followed by “Often unhappy, down-hearted or tearful” with mean score of (\bar{x} = 3.17), followed by “Gets on better with adults than with other children” with mean score of (\bar{x} = 3.0), “Often fights with other children or bullies them” were ranked 22nd with the mean of (\bar{x} = 3.07), “Can stop and thinks things over before acting were ranked 2nd to the last with the mean score of (\bar{x} =3.04) and “Often argumentative with adults were ranked last” with the mean score of (\bar{x} =2.97). The table above shows weighted mean of 3.2 which is greater than the standard mean of 3.0. This



implies that employees in Ibadan metropolis have a high level of psychological adjustment.

Research Question 2: What is the significant relationship between personality and psychological adjustment of employee in Ibadan Metropolis?

Table 2: PPMC showing the relationship between personality trait and psychological adjustment

Variable	N	Mean	Std.	Df	R	Sig
Psychological adjustment	353	87.09	16.52	351	.519	.000
Personality trait		99.86	15.54			

** . Correlation is significant at the 0.05 level (2-tailed).

Table above, shows that there significant relationship between personality trait and psychological adjustment and personality trait among employees in Ibadan metropolis. The study revealed that there is positive but moderate significant relationship between personality trait and psychological adjustment among employees in Ibadan metropolis; $r(351) = .519$ $P < 0.05$. Thus, the personality trait influence psychological adjustment of employees.

Research Question 3: What is the significant relationship between self-efficacy and psychological adjustment of employee in Ibadan Metropolis?

Table 3: PPMC showing the relationship between self-efficacy and psychological adjustment

Variable	N	Mean	SD	Df	r	Sig
Psychological Adjustment	353	87.09	16.52	351	0.244	.000
Self-Efficacy		31.55	4.82			



Table 2 shows that there significant relationship between self- efficacy and psychological adjustment among employees in Ibadan metropolis. The study revealed that there is positive and weak significant relationship between self- efficacy and psychological adjustment among employees in Ibadan metropolis; $r(351)= .244$ $P <0.05$. Thus, self- efficacy influence psychological adjustment.

Research Question 4: What is the joint contribution of personality and self-efficacy to psychological adjustment of employee in Ibadan Metropolis?

Table 4: Multiple Regression Analysis on Psychological Adjustment

R	R Square	Adjusted R Square	Std. Error of the Estimate		
0.622	0.387	0.380	54.850		
SUMMARY REGRESSION ANOVA					
Model		Df	Mean Square	F	Sig.
Regression	37151.463	2	9287.866	54.850	.000 ^b
Residual	58927.637	350	169.322		
Total	96079.099	352			

Table 4 shows there was a joint contribution of the independent variables (Personality trait, and self-efficacy) to the dependent variable (psychological adjustment) among employees in Ibadan metropolis. The table show coefficient of multiple correlations (R) of 0.622 a multiple R square of 0.387. This means that 38.7% (Adj. $R^2=0.380$) of the variance in the psychological adjustment employees in Ibadan metropolis in Ibadan is accounted for by the independent variables, when taken together. The table also showed that the analysis of variance for the regression yielded of F (54.850, $p < 0.05$). The above present is significant at 0.05 level. It implies that there is joint contribution of the independent variables (personality trait and self-efficacy) to the dependent variable (psychological adjustment) among employees in Ibadan metropolis.



Discussion of Findings

The findings of the study shows that the weighted mean which is greater than the standard mean. This implies that employees in Ibadan metropolis have a high level of psychological adjustment. Also, the study revealed that there is positive but moderate significant relationship between personality trait and psychological adjustment among employees in Ibadan metropolis. Thus, the personality trait influence psychological adjustment of employees. Furthermore, the study revealed that there is positive and weak significant relationship between self- efficacy and psychological adjustment among employees in Ibadan metropolis. Thus, self-efficacy influence psychological adjustment. There was a joint contribution of the independent variables (personality trait and self-efficacy) to the dependent variable (psychological adjustment) among employees in Ibadan metropolis. Another valuable extension of this study may be to include a sample of workers who were more experienced dues to changing from one working environment and another. This type of research may also be useful in counseling in the sense that it enable counsellor to understand themselves and their relationship with clients, government will achieve a state of balance among the states, teachers and parents will able to understand personal mastery and feelings of purposes in life of their employees and stakeholders and educational research will enables to understand more both challenging and rewarding and life event. In addition to the theoretical implications, this study also carries some practical implications. However, it is important to note that the intention of this study was not to provide guidelines on how to make or develop good psychological adjustment, rather it was to illuminate some of the significant factors that lead to increases or decreases of psychological adjustment. This is against the study of Zelenski, John, Santoro, Maya, Whelan and Deanna, (2012) result showed a negative relationship between introversion Personality traits and social adjustment. In another study conducted by Kline (1966), revealed a negative correlation between Extraversion and Academic Adjustment while Neuroticism insignificantly and negatively relates to adjustment. Keskin, (2014), Carver and Smith (2010) studied revealed that Extraversion, conscientiousness and openness related to adjustment coping skills. Green, Miller and Gerand (1975) who used survey to find out the influence of personality Traits and social adjustment, the findings showed that personality traits positively relate Social adjustment. In accordance to self-efficacy, Alkali (2016) studied reveals that positive relationship exists between social adjustment and academic adjustment. Studies by Karen (2005), discussed the relationship between social self-efficacy and psychological adjustment variables in employees. The study indicated that there was moderate relationship between self-efficacy, depression and loneliness. Juliana, Debora and Aglio (2012) examined the relationship between self-efficacy, social support, and sociocultural adjustment. The study revealed that self-efficacy positively and significantly predicted a high level of cultural empathy during sociocultural adjustment.



Conclusion

Based on the findings of this study, the findings of the study shows that the weighted mean which is greater than the standard mean. Also, the study revealed that there is positive but moderate significant relationship between personality trait and psychological adjustment among employees in Ibadan metropolis. Self- efficacy positively correlates with psychological adjustment among employees in Ibadan metropolis. All the independent factors (personality trait and self-efficacy) has joint contribution to psychological adjustment of employees in Ibadan metropolis. Overall, the results of this study demonstrate that the psychological adjustment problems have become increasingly common among employees nowadays, especially employees who are prone to psychological problems. Researchers have shown that the poor psychological adjustment appears to be a very crucial and critical issue among employees who are changing working environments from a structured environment (course-taking) to a more unstructured environment. This will help not only in producing more generalizable results but also in addressing.

Recommendations

The following are recommendation are suggested that;

1. Employees should be encourage in the organization on how to developed and maintain good psychological adjustment.
2. One-on-one counseling should be done for employees who suffer or have low psychological adjustment on how to increase and manage it.
3. Seminars should be holds in organizations for the enlightenment on psychological adjustment in order to help to improve their working performance.
4. Organizations and government would understand the fact that providing good motivating factors and social factors for employees will lead to good psychological adjustment.

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CHAPTER 58

INFLUENCE OF INCLUSION ON THE PSYCHO-SOCIAL ADJUSTMENT OF STUDENTS WITH SPECIAL NEEDS IN LAGOS STATE

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Abstract

Inclusion is an educational approach that combines regular students and students with special needs in the same classroom while providing them with equal access to educational and social opportunities within the classroom and school environment. The aim of inclusion is the elimination of discrimination, stigmatization, and the promotion of social cohesion among all students regardless of their abilities or limitations. Although inclusion is gradually being accepted and adopted in Nigerian schools, there is still the need to examine the influence of inclusion on the well-being of special needs students (SNS), thus this study seeks to examine the influence of inclusive education on the cognitive adjustment, emotional adjustment, social adjustment, and peer relationship of SNS in Lagos state. Descriptive survey research was adopted, and four research hypotheses were formulated to guide this study. A randomly selected sample of Two hundred (200) public senior secondary schools 1 and 2 students from Yaba LCDA of Lagos State were used. A self-structured questionnaire was administered, and an independent t-test statistical tool was used for data analysis at a 0.05 level of significance. The findings of the study show that there is a significant influence of inclusion on the cognitive adjustment, emotional adjustment, social adjustment, and peer relationships of special needs students in Lagos State. However, the study also revealed that there are significant challenges to implementing inclusion in Nigeria, including lack of infrastructure, inadequate funding, and negative attitudes towards students with special needs. The paper concludes that inclusion is a promising approach to support the psycho-social adjustment and academic performance of special needs students in Lagos State.

Keywords: Cognitive adjustment, Emotional adjustment, Social adjustment, Inclusion, Special Needs Students



Introduction

Inclusion is a concept that has gained significant attention in the education sector in recent years as stakeholders in Nigeria and other parts of the world have been agitating for the rights of persons with disabilities and special needs. These rights have been focused on access to proper education, employment opportunities, participation in politics, and assignments to administrative positions (Obi and Ashi, 2016). Persons with special needs are those that experience significant limitations/difficulties in their physical, psychological, and social growth, development, adaptation, skill acquisition, and functionalities which are due to certain physical or neurological deficits. In layman's terms, they are persons with disabilities. This condition includes physical disabilities (such as visual impairment, hearing impairment, speech impairments, and physical handicap), learning disabilities (such as dyslexia, dysgraphia, dyscalculia, auditory processing disorders, and visual processing disorders), behavioural disorders, mental or intellectual retardation, and giftedness. Inclusion involves educating persons with special needs alongside their peers without special needs in the same learning environment and ensuring that all learners are exposed to learning resources suited to meet their specific learning needs. Obi, Mensah and Avoke (2007) describe inclusion as a deviation from the traditional approach to education that segregates children with special needs from their peers rather it involves adapting regular school practices to suit the needs of persons with disabilities. The objective of inclusion is to provide all students with an equal opportunity to receive quality education and to promote their social and emotional well-being. Inclusion is grounded in the belief that students with special needs should be treated with dignity and respect and should be given the opportunity to participate fully in society.

In Nigeria, there are an estimated 25 million people living with disabilities which is quite a significant number, however, the system of education in Nigeria has been exclusionary and discriminatory towards them. Nigeria's ratification of the United Nations convention on the rights of persons with disabilities which focused on the provision of equitable and equal education for all persons with disabilities and the advocacy of social justice and equity in education as a basic human right by the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2017) kick-started the drive for inclusion in Nigeria. The enactment of the National Policy on Education (NPE) in Nigeria in 2004 served as the foundation for inclusion in Nigeria. The NPE highlighted the need to provide equal access and free educational opportunities to learners in Nigeria and further states that 'persons with special needs should be provided with inclusive education services in regular schools.

There has been a recent shift towards promoting inclusion in Nigeria by through governmental recognition of the importance of provision of quality education to all students regardless of their exceptionality, researchers, and experts in the field of special needs, the implementation of inclusive education has been faced with



several challenges which has restricted its speedy growth as compared to some other countries. Despite its adoption in Nigeria, its implementation/practice of inclusion has been very slow. Studies have been carried out on the impact of inclusion on the academic performance/adjustment of students with special needs but there is still the need to investigate the influence of inclusion on the overall well-being of students with special needs, this includes their cognitive adjustment, emotional adjustment, social adjustment, and peer relationships. Physical adjustment refers to the ability of students with special needs to participate in physical activities, such as sports and games, in the school environment, mental/psychological adjustment refers to the emotional and cognitive aspects of students' adjustment in the school environment this includes their self-esteem and social skills, emotional adjustment refers to the ability of students with special needs to regulate their emotions and cope with stress in the school environment and peer relationships refer to the ability of students with special needs to form positive relationships and participate in social activities with their peers in the school environment.

Methodology

Descriptive survey research was used to conduct the study. Two hundred (200) respondents were randomly selected as sample for this study from public senior secondary schools 1 and 2 in Yaba Local Council Development Area of Lagos State. Four research hypotheses were formulated, and A self-structured questionnaire was administered, and an independent t-test statistical tool was used for data analyst analyse is at a 0.05 level of significance. The construct and content validity of the instruments for this study were determined using split alpha for the internal consistency of the items and a Test-retest method was used to measure the reliability of the instrument within a three-week interval.

Participants: The participants in this study are special needs students who are currently enrolled in secondary schools in Lagos State, Nigeria. Students eligible for participation were those diagnosed special needs by the teachers in regular schools.

Procedure

Written informed consent was obtained from parents or guardians of the participants before data collection. The data were collected using a self-administered questionnaire that contained five sections: exposure to inclusive education, cognitive adjustment, emotional adjustment, social adjustment, and peer relationships. The questionnaire was administered to the participants during school hours, and the participants were given ample time to complete the questionnaire.



Data Analysis: The data were analysed using independent t-tests. The independent t-tests were used to compare the mean scores between exposure to inclusive education of special students with special needs and their cognitive adjustment, emotional adjustment, social adjustment, and peer relationships.

Results

Hypothesis One: There is no significant influence on inclusive education on the cognitive adjustment of students with special needs in Lagos State.

Table 1: T-test analysis showing the influence of inclusion on the cognitive adjustment of students with special needs

Source of variation	Mean (\bar{x})	S.D	N	df	t-cal	t-crit	Decision (0.05)
Inclusive education	31.25	4.52	200	198	3.71	3.34	Reject H_0
Cognitive adjustment	27.92	4.21					

Level of significance 0.05

Table 1 shows the result of the test of significant influence of inclusive education on the cognitive adjustment of students with students with special needs in Lagos State. The calculated t-value is 3.71 while the critical t-value is 3.34 at 0.05 level of significance given 198 degrees of freedom. Decision rule states that the alternative hypothesis is accepted if the calculated value is greater than the critical value vice versa. The stated null hypothesis is rejected because the critical t-value (3.34) is lesser than the calculated t-value (3.71). Therefore, the alternative hypothesis of “there is a significant influence of inclusive education on the cognitive adjustment of students with special needs in Lagos State” was adopted.

Hypothesis Two: There is no significant influence on inclusive education on the emotional adjustment of students with special needs in Lagos State.



Table 2: T-test analysis showing influence of inclusion on the emotional adjustment of students with special needs

Source of variation	Mean (\bar{x})	S.D	N	df	t-cal	t-crit	Decision (0.05)
Inclusive education	31.25	4.52	200	198	3.59	3.34	Reject H_0
Emotional adjustment	36.04	6.64					

Level of significance 0.05

Table 2 shows the result of the test of significant influence on inclusive education on the emotional adjustment of students with special needs in Lagos State. The calculated t-value is 3.59 while the critical t-value is 3.34 at 0.05 level of significance given 198 degrees of freedom. Decision rule states that the alternative hypothesis is accepted if the calculated value is greater than the critical value vice versa. The stated null hypothesis is rejected because the critical t-value (3.34) is lesser than the calculated t-value (3.59). Therefore, the alternative hypothesis of “there is a significant influence on inclusive education on the emotional adjustment of students with special needs in Lagos State” was adopted.

Hypothesis Three: There is no significant influence of inclusion on the social adjustment of students with special needs in Lagos State.

Table 3: T-test analysis showing the influence of inclusion on the social adjustment of students with special needs

Source of variation	Mean (\bar{x})	S.D	N	df	t-cal	t-crit	Decision (0.05)
Inclusion	27.92	4.21	200	198	3.66	3.34	Reject H_0
Social adjustment	36.04	6.64					

Level of significance 0.05

Table 3 shows the result of the test of significant influence of inclusion on social adjustment of students with special needs in Lagos State. The calculated t-value is 3.66 while the critical t-value is 3.34 at 0.05 level of significance given 198 degrees



of freedom. Decision rule states that the alternative hypothesis is accepted if the calculated value is greater than the critical value vice versa. The stated null hypothesis is rejected because the critical t-value (3.34) is lesser than the calculated t-value (3.66). Therefore, the alternative hypothesis of “there is a significant influence of inclusion on social adjustment of students with special needs in Lagos State” was adopted.

Hypothesis Four: There is no significant influence of inclusion on the academic performance of special needs students in Lagos State.

Table 4: T-test analysis showing the influence of inclusion on peer-relationship of students with special needs

Source of variation	Mean (\bar{x})	S.D	N	df	t-cal	t-crit	Decision (0.05)
Inclusion	19.27	5.21	200	198	4.08	3.34	Reject
Peer-relationship	18.07	5.19					H ₀

Level of significance 0.05

Table 4 shows the result of the test of significant influence of inclusion on the academic performance of special needs students in Lagos State. The calculated t-value is 4.08 while the critical t-value is 3.34 at 0.05 level of significance given 198 degrees of freedom. Decision rule states that the alternative hypothesis is accepted if the calculated value is greater than the critical value vice versa. The stated null hypothesis is rejected because the critical t-value (3.34) is lesser than the calculated t-value (4.08). Therefore, the alternative hypothesis of “There is a significant influence of inclusion on the academic performance of special needs students in Lagos State” was adopted.

Summary of the Findings

The findings of this study established that inclusion has a significant influence on the cognitive adjustment, emotional adjustment, social adjustment, peer relationships of students with special needs in Lagos state.

Discussion of Findings

The findings of this study are in line with studies that some studies that have previously been carried out on these areas. Chado (2022) opined that inclusion



provides students with special needs the opportunity to share educational experiences with their peers whilst being provided with learning opportunities and materials suited to meet their needs, this helps to enhance their cognitive abilities, gives them a sense of belonging and active membership in the educational system, improves the communication and social skills of these students and enhances positive peer relationships by reducing negative attitudes of peers towards them. Olusegun (2007) on the other hand states that inclusion helps in reducing the effects of inferiority complex on the part of the exceptional persons. Thereby leading a healthy completion with the normal persons, resulting in high academic achievement. Studies have also revealed that inclusion helps to foster motivation that affords SNS the opportunity to develop their communication and motor skills and overall, their educational achievements (Edozie and Jacob, 2012).

Conclusion

This finding alongside other studies by researchers are a pointer to the fact that properly implemented inclusion practice is of tremendous psycho-social benefits to SNS as they are afforded the opportunity to equally and equitably to interact with their non-disabled peers in order to learn academically and behaviourally. This in turn yields multiple positive results for the overall wellbeing and adjustment of SNS. The results of this study should also inform policy and practice in Lagos State and other regions of Nigeria considering the established importance of implementing inclusive education practices and promoting the social and emotional well-being of special needs students.

Recommendations

In order to maximize the participation of all learners in the classrooms of their choice, it is imperative for the Nigerian government and educational stakeholders to:

- Rethink and restructure policies and curricula before establishing inclusive classrooms.
- Ensure that teachers are adequately capacitated to successfully handle inclusive classes.
- View the differences between learners as a source of richness and diversity which should be supported through a wide and flexible range of accommodations.
- Put in place effective and continuous teacher training programmes on special needs education and management.
- Modify the school curriculum to accommodate learners with special needs and make provisions suited to meet their unique needs.



- Provide employment for trained personnel to assist regular teachers in the inclusive classroom.

Adelodun (2012) also suggested that:

- Government should provide adequate funding for inclusive education.
- Educational resources should be distributed equally.
- Society should prioritize the needs of SNS and adopt a positive attitude towards them.
- There should be provision of adequate personnel for the management of SNS.
- The curriculum should be restructured to merge special needs education and regular education.
- The gifted children should be engaged with additional tasks, intellectual creative learning and competition.

Suggestions for Further Research

Further research should be made on the influence of inclusion on the school adjustment and psychosocial adjustment of gifted and talented students and students with learning disabilities specifically due to the fact that there are very few professionals in these areas, and this could have a significant influence on the learners.

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CHAPTER 59

REREREAD STRATEGY FOR THE INCLUSION OF CHILDREN WITH MILD INTELLECTUAL DISORDER IN QUALITATIVE EDUCATION IN NIGERIA

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Abstract

The children with intellectual disorder presents a deficit in intellectual functioning and adaptive behaviour which is due to a low level of intelligence quotient. Ensuring qualitative education for this category of children is still a herculean task in Nigeria. Such children suffer from poor memory and have difficulties with abstract thinking and problem solving. The conventional educational system is built on skills such as comprehension, memory, abstract thinking and problem solving. Therefore, children with intellectual disorder are at a disadvantage of being excluded in an inclusive education system. In special education, teaching children with intellectual disorder have over time evolved towards the adoption of methods such as the use of teaching and learning strategies which the school libraries have strived to provide. This paper focuses on the effects of reread strategy on the IQ of children with mild intellectual disorder.

The paper is based on empirical findings by a quasi-experimental approach using the reread strategy as the treatment strategy with the conventional mode of teaching for the control group and review of literature sources like journal articles, books and other information materials were used to support the empirical findings.

Keywords: *Reread strategy, Qualitative education, Intellectual disorder, School libraries, Inclusive education*



Introduction

Inclusive and quality education is one of the fundamental rights of every child all over the world. Meanwhile, the quest for quality education is still faced with a lot of challenges for certain category of children (Osoba, Aramide and Oyesiku, 2023). All over the world, children with intellectual disorder (ID) face constraints to effective learning. Linn, Chuaquui, Wilson and Arrendodo (2019) explained that children with intellectual disorder suffer from pronounced and unpronounced exclusion in the classroom because they are slower than their regular cohorts in terms of yardsticks such as comprehension, abstract thinking and problem solving. Moreover, empirical facts have revealed that the prevalence of intellectual disorder globally (1%- 3% for USA and Europe and 4%- 6% for the developing countries) portend a situation in which as much as 90 million children worldwide could go without quality education if non-conventional strategies are neglected (UNESCO, 2018). This situation could have deleterious consequences on the quality of life and long-term life outcomes of these children and make them a burden on the society (UN, 2017; Latteck and Bruland, 2020).

According to Algahtani (2017) intellectual disorder is a condition stemming from abnormalities in psychological functioning and adaptive characteristics. This view is supported by Giust and Valle- Riestra (2017) who further expressed that the intellectual disorder is not peculiar to any group or culture but is derived from the interplay of genetic and environmental factors (internal & external factors). These views based on empirical evidence have over the years played a large role in discrediting the cultural and ethnic connotations associated with intellectual disorders. However, Linn et al (2019) explained that intellectual disorder is derived from various psychological abnormalities which may be genetic or non- genetic in nature but which generally limits the capacity of affected individuals to learn at the expected pace and function in daily living. Essentially, it hampers the learning process by interfering with the performance of such basic functions like reading, writing, abstract thinking, problem solving and in the extreme, social functioning. Akpan and Beard (2016) maintained that intellectual disability among children ranges from mild to severe. For children with cases of severe disability, there is the tendency to have acute communication problems, withdrawal and limited participation.

Linn, *et al.* (2019) also noted that children with intellectual disorder generally have a poor memory which in turn limits their ability to think in abstract terms, have difficulty speaking and learning to talk, comprehend slowly and are deficient in understanding social rules. However, with the aid of some specific and adequately implemented educational supports, children with mild intellectual disorder are educable, if efforts are made to improve their IQ (Botsas 2017; Mehdizadeh and Khosravi, 2019). There is therefore a cogent need to ensure the widespread dissemination of the educational supports which in turn relies on a demonstration of



their impact on intelligence because children with mild intellectual disorder who are educable have a chance of being integrated into the society, provided they have access to effective educational strategies that could lead to improvement of their IQ.

In past times, several charters, declaration and developmental goals have aimed at ensuring inclusive, equitable and qualitative education for all children irrespective of their condition, status, cognitive abilities and geographical locations. According to United Nations Universal Declaration of Human Right which was first documented in 1945 and the Child Rights Convection (1985), both emphasised education as one of the basic rights of every child among others. This implies that no matter the condition of every child, and irrespective of their disabilities, there must be a way to educate them. For the regular child, education is relatively easy both formally and informally because on the average, their brain can process the data it acquires, and make meanings out of them. However, the case is different for children with intellectual disorder, in whose case, special therapy needs to be applied to educate them especially in a formal setting.

The children with intellectual disorder possess a very short attention span which cause them to lose concentration while they were assumed to be reading. They also flip through pages and probably blab as they read along without proper assimilation of what is being read. Reading to them without adopting proper and adequate reading strategies would have been a fruitless effort. Helping children learn to read is a dream in reality for parents and teachers who take pride as their children acquire effective reading skills and reading strategies

Statement of the Problem

Qualitative and inclusive education remains one of the cardinal pillars upon which individual and communal development is based and remains a key focus of the global development goals (Rozalski, *et al*, 2010; UNESCO, 2018). While the inclusiveness of global education goals applies also to children with intellectual disorder, there are challenges inherent in the process of ensuring that these children actually get educated. Dunlosky, *et al*. (2013) noted that at the root of this is the ineffectiveness of conventional methods in imparting requisite knowledge and skills to children with intellectual disorder. The prevalence of intellectual disorder globally portends a situation in which as much as 90 million children could go without qualitative education if non- conventional strategies are neglected. Investigations also revealed that children with intellectual disorder are still struggling with learning within the school environment which could be traced to the methods of instructional delivery which is at variance with their level of intelligence quotient. Employing methods to improve the IQ of the children with intellectual disorder may be a plus in educating this category of children.



Children with intellectual disorder who are educable have a priceless chance of being integrated into the society provided they have access to effective special education. Giust and Valle- Riestra (2017) have previously explained that children with intellectual disorder have poor coping mechanisms and are generally deficient in the understanding of social rules upon which interactions are based. This transforms them into awkward communicators and thus makes learning difficult. The children with intellectual disorder possess a very short attention span which cause them to lose concentration while they were assumed to be reading. They also flip through pages and probably blab as they read along without proper assimilation of what is being read. Reading to them without adopting proper and adequate reading strategies would have been a fruitless effort. Helping children learn to read is a dream in reality for parents and teachers who take pride as their children acquire effective reading skills and reading strategies.

This study will investigate the effect of reread strategy on the intelligence quotient (IQ) of children with mild intellectual disorder in public special-need schools, Ogun State, Nigeria. The recommended comprehension textbook for English language “Macmillan New Primary English Book 1, UBE Edition” would be adopted as reread strategy package. Reread elements that would be investigated include vocabulary, understanding and comprehension.

Literature Review

The importance attached to the need to improve the intelligence of children with intellectual disorder using strategies has informed a number of studies over the years. Guthrie (2017) explored the effectiveness of repeated reading and error correction strategies on the reading fluency skills of students with autism spectrum disorder. The study was also based on the use of pretest and posttest and adopted a single subject multiple baseline design to investigate effectiveness. The study concluded that a combination of reread and error correction strategies improved comprehension abilities and reduce errors in word identification thus promoting fluency. This aligns with earlier findings by Therrien and Kubina (2007) and Kostewicz and Kubina (2012). The findings from these studies however suggested that higher levels of improvements in intelligence are recorded when repeated reading is used in combination with other intervention(s).

Reading strategies are designed to reinforce and improve the reading skills and reading comprehension of learners. A fun, high-interest fiction and non-fiction selections will spark the interest of even the most reluctant readers like children with intellectual disorder when the appropriate strategy is adopted. Today, like many teachers and researchers, we use the term reading strategies, both formally and informally, to describe features of children’s reading development as well as features of teachers’ reading instruction (Paris, Wasik, and Turner, 1991; Pressley and



Afflerbach, 1995). The term strategies became popular in the 1970s to signify the cognitive aspects of information processing. Assessment and evaluation of student understanding and ability in the course of adopting reading strategies should be an ongoing process. And the assessment and evaluation should be in a fair and comprehensive manner, keeping in mind that the assessment should take into consideration the opportunities the student need to learn.

In another study, Therrien and Hughes (2007) subjected 32 students with learning disabilities and reading difficulties to reread intervention. The study discovered that students subjected to the intervention fared better than the control group and that higher levels of improvements are obtained when students read a passage seven times than when such passage was read twice or once. Weinstein, McDermott and Roediger (2010) made a comparative evaluation of study strategies for passages used by students with learning difficulties with a focus on reread, answering questions and generating questions. The study made use of three experimental groups and findings revealed that students who made use of reread strategy fared better than those whose interventions related to the generation and answering of questions.

Botsas (2017) investigated the differences in strategy use in the reading comprehension of narrative and science texts among students with or without learning disabilities. The study was conducted using a sample of 122 students (61 of which have learning disabilities). The researchers sought to raise the intelligence (in terms of cognitive and metacognitive capabilities) of those with learning disabilities using reading strategy and think- aloud procedures. From the findings of the study, there was a significant improvement (34%) in the intelligence scores of students with disabilities. Almutairi (2018) also examined the effectiveness of reading strategies for increasing the reading comprehension level of third grade students with learning disabilities. Utilising a qualitative approach and collecting data using interview schedules and semi- structured questionnaires, the study showed that students with learning disabilities who have been subjected to reread interventions in the past three months demonstrate improved levels of reading comprehension and fluency. Other interesting findings include the observation that reread leads to significant improvements among students who have issues with background knowledge, issues with vocabulary, fluency and difficulties with making inferences and handling informational texts. This confirms empirical findings by George and Adkins (2014) and Therrien, Gormley and Kubina (2006).

Children with intellectual disorder who are considered educable are usually those with mild disability and possess the tendencies to learn and function normally in the regular classroom and in the society if aided with appropriate strategy/strategies. The reread strategy will be adopted to treat educable children with intellectual disorder in the bid to raise their intelligence levels.



Research Methodology

The population of the study comprised of 27 pupils in the two selected schools for children with special needs in two local government areas in Ogun State which are Ijebu-Ode Local Government Area and Sagamu local government area. Although, some of them were disqualified because their ages do not fit into the age bracket considered for children in this study (6-16years). Furthermore, only the educable pupils (with mild intellectual disorder) participated in the study. The reason for the choice of this category is because compared to the other categories (severe and profound intellectual disorder), the children with mild intellectual disorder can listen, communicate, learn new ideas, obey simple commands, they are teachable when aided with strategies.

The study adopted the pretest, posttest, control group, quasi-experimental design. The experimental group was first subjected to pretest, then to treatment (reread strategy) and later posttest measures, while the control group were subjected to a non-therapeutic (placebo) treatment but participated in pretest and posttest measures.

Reread Strategy Treatment

The experimental group were exposed to RRS for 90 minutes twice weekly for three weeks; this was expedient considering the memory level of the children with intellectual disorder. An attempt to lengthen the treatment may defeat its original purpose. The decision to make the treatment a bi-weekly type is birthed from the fact that the children with intellectual disorder possess a short memory level, and there is tendency for them to forget what is being taught if the space of time is too long.

It is important to note that the pupils with intellectual disorder in public special-need schools in Ogun State are not really engaged with burdensome syllabus. Rather, they are basically kept in school to while away time doing easy tasks or just playing away. This made it more convenient for the researcher to spend time with them, while engaging them meaningfully in the course of the three bi-weekly treatment sessions. The first and the last session was used for introduction/pretest and evaluation/posttest respectively. The reading strategy that was adopted for this research work is the reread strategy.

The reread entails reading over and over in order to establish understanding. The treatment was aimed at improving the attention span, memory and comprehension level of the children with intellectual disorder. Some modules/lessons in the recommended English textbook for the participants (Macmillan New Primary English Book 1, UBE Edition) was discussed during the course of the RRS treatment.



Population of the Study

The population of the present study comprised of 27 pupils in the two selected schools for children with special needs in two local government areas in Ogun State which are Ijebu-Ode Local Government Area, and Sagamu local government area (See Table 1 below).

Table 1: Population of the study

Schools for children with special needs	Total number of pupils	Male	Female
Ijebu-Ode	12	07	05
Sagamu	15	09	06
Total	27	16	11

Sampling Technique and Sample size

Purposive sampling technique was adopted to select two public special-need schools that cater for children with intellectual disorder from two Local Government Areas in Ogun State for the study. The school for children with special needs in Ijebu-Ode Local Government Area for the experimental group, and Sagamu Local Government Area for the control group.

Table 2: Sample size for the study

Schools for children with special needs	Total number of pupils	Number of pupils selected for the study	Male	Female
Ijebu-Ode	12	11	07	04
Sagamu	15	11	06	05
Total	27	22	13	09

Criteria for Participation

The participants satisfied the following criteria:

1. They must be children, not below 6, and not above 16 years of age
2. They must be children with intellectual disorder



3. The participants must be in the educable category
4. They must be in the schools for children with special needs in Ogun State
5. The children with intellectual disorder must be willing to participate in the study

Treatment package (Reread Strategy)

It involved rereading of their officially recommended textbook on English Comprehension (Macmillan New Primary English Book 1, UBE Edition). The package was administered by repeatedly reading short sentences in the book until each lesson was completed. It was administered with the aim of improving the comprehension and assimilation ability of the participants.

Control group (Conventional Reading package)

This package involved the regular or usual method of reading that is usually adopted as the participants' classroom reading style; this type of reading is non-therapeutic, and was adopted for the control group. The recommended English comprehension textbook (Macmillan New Primary English Book 1, UBE Edition), was also utilised for this package. It was necessary to engage the conventional group in order to keep them occupied, and not left behind to cause distraction.

Table 3: Summary of Analysis of Covariance (ANCOVA) showing the main effect of Reread strategy on the intelligence quotient (IQ) of children with mild intellectual disorder in public special-need schools

Source	Sum of Squares	DF	Mean Square	F	Sig.	Eta. Sq
Corrected Model	570.268	3	190.089	13.789	.000	.542
Intercept	1699.226	1	1699.226	123.259	.000	.779
Pretest IQ	91.284	1	91.284	6.622	.014	.159
Treatment	563.078	2	281.539	20.422	.000	.539
Error	482.502	35	13.786			
Corrected Total	1052.769	38				

R Squared = .542 (*Adjusted R Squared* = .502)

Table 3 showed that there is a significant main effect of treatment (Reread strategy) on the intelligence quotient (IQ) of children with mild intellectual disorder in public



special-need schools ($F = 20.422$, $p < .05$, $\eta^2 = .539$). This implies that the treatment was effective in the management and improvement of intelligence quotient (IQ) of children with mild intellectual disorder in public special-need schools in the study. The table also shows the contributing effect size of 53.9%.

Conclusion

This paper examined the effect of reread strategy on the IQ of children with mild intellectual disorder. It points out another role that the school libraries could play in including the excluded (Children with intellectual disorder) by adopting reread strategy to improve their intelligence quotient (IQ) Starting from the premise that qualitative education is a fundamental right of all children regardless of their disability, this paper have traced the various constraints faced in educating the children with intellectual disorder especially in the developing countries where such children suffer from various forms of exclusion (Akpan and Beard, 2016; Linn et al, 2019). Also, children with intellectual disorder- even the ones who are educable, process information at a much slower rate than their regular cohorts and have difficulty with abstract thinking and problem solving. The implication of this is that such children have trouble coping in the conventional classroom.

Reread strategy has emerged as a method which could be adopted by the school libraries to aid the improvement in the IQ of the children with mild intellectual disorder in the school library setting. However, evidence points out that their utilisation is more optimised if based on a combination with other methods (Foley-Nipcon, *et al*, 2012; Nursalam, *et al*, 2018). Furthermore, gaining maximum benefits from its use is easier within a school library setting which ensures that school librarians are effectively trained and competent and a curriculum which is needs-based and designed from the perspective of ensuring qualitative and inclusive education for the intellectual disorder. Bringing these elements together will go a long way in ensuring that the educable children among the intellectual disorder are nurtured into becoming independent and fully integrated members of the society.

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CHAPTER 60

READING PREFERENCE OF PRIVATE PRIMARY SCHOOL PUPILS IN IBADAN, NIGERIA

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Abstract

The study investigated the reading preference of private primary school pupils in Ibadan, Nigeria. The study was carried out as a result of the concern over the lack of enthusiasm for reading observed among pupils in Nigeria. The mixed methods of convergent parallel design was adopted for the study. The Population of the study comprised primary four pupils of private primary schools in Ibadan while the sample population consist one thousand and ninety-one primary four pupils selected through a multi-stage sampling procedure. The instruments employed were a structured questionnaire and focus group discussion while the data collected were analysed using descriptive statistics of frequency counts and percentages and Atlas ti 8. The result revealed fiction materials as the preferred genre, and electronic media as the preferred platform for reading while the purposes for reading include passing examinations, learning new things and knowing more about other places. The home was found as the preferred venue for reading while there was no indication of a specific preferred time for reading. The reading preferences of pupils should be noted by parents, teachers, school proprietors, and the government for improved reading among the pupils.

Keywords: *Reading preference, Literature genre, Reading platform, Time preference*

Introduction

An understanding of the reading preference of pupils could be a strategy for the promotion and accomplishment of good reading culture among pupils. It could bring about educational, economic, and technological advancement as well as a reduction



in the rate of unemployment and crime in a country. Having a defined reading preference could drive a child's desire for reading regularly, and this could result in knowledge acquisition. Moreover, skills and knowledge acquired through reading could result in self-reliance and the development of entrepreneurship. The skills, self-worth, and confidence of the pupils who read could also improve. Furthermore, such pupils may be able to compete with other pupils from anywhere in the world. Despite several studies that have been carried out on reading preference, no one has given a straight-to-the-answer definition of the term; however, researchers have provided several explanations of the term.

This study adopted the definition and explanation of reading preference as explicitly stated by Clark and Foster (2005) by examining the concept in the light of genre, the platform for reading, purpose for reading, the place for reading, and the time for reading. Variation exists in pupils' reading preference based on genre, the reason for reading, the place preferred for reading, and the most preferred time for reading. Studies by Baharuddin, Hasnol, Ramsi, and Kadir (2015), Pabion and Clark (2016) have all revealed the impact of genre on the reading preference of pupils. Also, studies such as Zaidi, Usman, Fayad, and Shariff (2018), Gallo and Ness (2013), Tveit (2012) have shown time, purpose, and place preference in reading among pupils. Each of the factors when examined was found to have impacts on pupils' decision to read or not to read. In this study, all these factors were examined to find the impact on pupils' reading preferences.

Statement of the Problem

Literature shows that having a defined reading preference indicates a favourable attitude towards reading. This in turn results in skill acquisition and improved academic achievement (Whitten, Labby, and Sullivan, 2016). The development of the culture of reading which could result from having a defined reading preference could be a remedy for learning disabilities which are associated with difficulty in reading. This is because the more a child reads the more vocabulary he develops and the better he gets at reading. Constant reading could consequently improve the child's reading ability and invariably eliminate reading difficulties. Regrettably, many primary school pupils in Nigeria seem not to have defined reading preferences. As a result, the pupils oftentimes read as a necessity rather than read for the pleasure that is derivable from doing so. Consequently, the pupils could not derive benefits such as knowledge acquisition, improved literacy ability, social, financial, economic and political enlightenment and the like from reading. Importantly, the pupils may lag in academic achievement which could impact their future attainment in life.



Objectives

The main objective of the study was to examine the reading preference of private primary school pupils. The specific objectives were to find:

- i. the genre preference of private primary school pupils,
- ii. the media platform preference for reading of private primary school pupils,
- iii. the purpose for reading of private primary school pupils,
- iv. the location preference for reading of private primary school pupils, and
- v. the time preference for reading of private primary school pupils.

Research Questions

1. What is the genre preference of private primary school pupils?
2. What is the media platform preference for reading of private primary school pupils?
3. What is the purpose for reading of private primary school pupils?
4. What is the location preference for reading of private primary school pupils?
5. What is the time preference for reading of private primary school pupils?

Literature Review

Studies have reported similarities and variations in the genre that meet the reading needs of pupils based on their interests. Sims (2012) in a longitudinal study investigated library circulation records of 44 pupils of a school in an urban district of the United States over three years. The researcher found that pupils read graphic novels, animal stories, biographies, World Records, and Almanac. The researcher also reported that preference in terms of genre vary between boys and girls. According to the researcher, boys revealed a preference for sports non-fiction and series books while girls, on the other hand, indicated a preference for animals and pets' non-fiction and fiction picture books. The revelation that boys prefer series books was affirmed Farris et al. cited in Mead (2012) who found that boys chose books written by a favourite author and books in a series. Although preferences attached to both boys and girls are more stereotypical than real, no consensus has been found on the types of books boys and girls prefer (Sims, 2012). Further, Stewart, Walker and Revelle (2018) drew attention to cultural diversity in the reading preference of children in a survey of English Learners in Texas. They found that the children indicated a preference for culturally oriented books; their reason for the choice is that they can affirm their own



identity, express themselves, and learn about other people. Meanwhile, children's reading preference is limited by the available reading materials (Manuel and Carter, 2015).

Studies have shown that pupils in Nigeria have a poor disposition towards reading; therefore, they read as a matter of compulsion to pass the examination; thus, they read more textbooks recommended in school than any other materials (Aina, Okusaga, Taiwo and Ogundipe, 2011). In a study of primary 4-6 pupils in Awka, Anambra State, Anyaegbu, Umejiaku, and Nwafor (2016) found that as a consequence of the non-availability of reading resources, the pupils did not engage in reading. However, because they had to pass their examination, their parents bought textbooks recommended in school, so they read textbooks since it is the only resource they have access to. Similarly, a study conducted in Ilesa, Osun State revealed a similar finding to previous studies. In the study, Oribabor (2014) averred that pupils in Nigeria read when it is crucial, which invariably was to pass an examination. Thus, the only material they read is their recommended textbooks. Evidence that pupils in Nigeria have a low preference for reading because they do not have access to a variety of reading materials to choose from was shown by Ezeokoli and Ezenandu (2013). In the study of 120 pupils in Ogun State, the researchers found that pupils indicated reading textbooks to pass an examination. The study also revealed an improved reading preference when the pupils were provided with a variety of reading materials from where they could choose.

Another factor considered important in understanding the reading preference of pupils is the media platform on which the pupils prefer to read. Studies conducted on the reading preference of pupils in terms of platform for reading resulted in various findings. For instance, Seok and DaCosta (2016) conducted a study among high school students in South Korea and reported that though the students' preference was determined by the purpose for reading, yet a higher number of the students showed a preference for reading printed text over digital text especially when reading for academic purpose; but when the purpose of reading is entertainment and pleasure, they showed a preference for reading on the digital media platform.

However, Žumárová (2015) revealed that despite the usage of computers by 63.81 children in a study on leisure time activities of children, only 8% of the pupils indicated reading in their leisure time. Alamri (2019) also reported a similar finding in a study on the reading preference of non-native English speaker students, the findings revealed that 38% of the students signified a preference for reading printed text while 15% indicated a preference for reading on electronic devices. The researcher also added that students read for a longer time when they read the printed book than when reading on electronic devices. Alisaari, Turunen, Kajamies, Korpela and Hurme (2018) reported that pupils achieve comprehension reading on an electronic device as reading the printed text in as much as the concerned pupils have the required skills for decoding the written text. Reporting an earlier study, Millar and



Schrier (2015) noted that electronic books even offer more flexibility and accessibility to pupils and in many instances, they are more up-to-date. However, pupils are more at home with reading the printed text although learning outcomes for reading on the electronic device and printed text do not have much difference (Foasberg, 2014). Thus, pupils' preference for printed text is not about the outcome of the reading, it is more about the purpose for reading wherein pupils favour digital media platforms for reading for recreation and printed media platform for reading for academic purposes (Seok and DaCosta, 2016). Although Alisaari, Turunen, Kajamies, Korpela, and Hurme (2018) found that pupils achieve comprehension irrespective of whether they read print or digital text.

Seok and DaCosta (2016) however found that pupils prefer reading printed text when they want to achieve learning and comprehension and when adequate attention is required. Jabr in Ross (2017) cautioned that there could be decreased concentration caused by eye fatigue when reading on electronic devices because the device's screen can strain the eye and cause headaches. So also did Engbrecht (2018) expressed concern that more than one-third of middle school children carry loads on their back over 30% of their weight when not more than 10 % is recommended because they had to carry their printed textbooks for reading, and this has resulted in back pain for many of them. This implies that none of the two reading media platforms is without health hazards (Ross, 2017), so it is up to the individual pupil to weigh the pro and cons and choose which platform suits his purpose. The genre of literature pupils read is oftentimes determined by the purpose for which the pupils choose to read. The various purposes for reading among pupils have been examined and reported in different studies. For instance, the survey of 36 member countries of the Organisation for Economic Cooperation and Development (OECD) (2011) revealed that the pupils in member countries of the organisation showed a high preference for reading for recreation which in turn resulted in high school performance among the pupils who read for pleasure. The survey indicated a performance gap ranging from 30% to 60% between pupils who read for enjoyment and those who do not. The findings indicated that reading for enjoyment contributes greatly to reading ability and school success.

Igudia and Ogunsina (2015) found that pupils read textbooks; which indicated that pupils' purpose for reading was to do well academically. Ukoha (2015) also observed that pupils in Nigeria engage in reading mainly to accomplish a school assignment or pass an examination. An interesting finding on the reading preference of pupils in Nigeria was revealed by Aramide (2015). Contrary to most available findings, the researcher in a study of 595 pupils in Ogun state revealed that the pupils' purpose for reading was not limited to passing examination alone but also include: to obtain information, for personal development and the acquisition of knowledge.

Place and time are other factors that have been considered to be crucial in understanding the reading preference of an individual, especially young children



because these two factors could also determine what will be the pupils' expressed attitude to reading. Moreover, the reading preference of a pupil in terms of time would also determine the preference in terms of place. For a pupil who prefers to read in the morning, any location in the school would likely be the preferred choice of reading place. Also, a pupil whose time preference is evening or night is likely to have a place in the house as the reading preference. One of the studies that examined students reading preference in terms of place was conducted by Pabion and Clark (2016). The study which was an evaluation of young readers programme carried out in the United Kingdom, found an increase over the previous survey in the number of children who read outside the school.

In an earlier survey on young people's reading habits and attitudes towards the library in Middlesbrough, England, Clark (2013) found that 62.3% of the respondents indicated reading in the school library and 41.4% read in local/public or library. The respondents found the library most suitable for reading because they have access to a variety of reading materials there. Contrary to what was obtained in England as presented by Clark, the home was established as the most preferred reading place among secondary school students in Mysore, India. The students reportedly indicated that they found it more convenient to read at home (Nagaraja and Manalan, 2016). Moreover, in a survey on reading enjoyment, behaviour, attitude, and attainment of young people in the United Kingdom, Clark and Douglas (2011) established that the majority of young people read every day. Although, they found that the frequency at which children read declines with age, they affirmed that girls frequently read outside of school.

Theoretical Framework

Revealed Preference Theory

Revealed preference theory was adopted to provide the theoretical framework for the study. The theory was propounded by Paul Samuelson in 1938 to explain what informed an individual in choosing a particular item rather than the other. Certain assumptions termed 'axioms' are made to explain choices made by an individual (Smuelders, Crama and Spieksma, 2018). Revealed preference posits that an item must be chosen consistently by an individual among other items for such items to be considered as the revealed preference of such an individual. Besides, the usefulness of the item in satisfying the individual's desire must be the reason for choosing the item (Cosaert, 2015). According to Thoma (2020), the theory posits that choices made by individuals are influenced by constraints such as limited options, thus, an individual makes choices out of a finite set of alternatives. Aydin and Ayranci (2018) have provided evidence in support of the theory that oftentimes, students' reading preference is to satisfy some desires including the desire for self-development, the desire for enjoyment, and the desire to meet societal expectations.



Results

Table 1: Genre Preference of Pupils

Genre	Frequency	Percentages (%)
Textbooks recommended in School	468	44.7%
Fantasy Stories	249	23.8%
Dictionary	214	20.4%
Cartoon Books or Magazines	210	20.1%
Animal-related Magazines	198	18.9%
Adventure Stories	178	17.0%
Cook Books	155	14.8%
Science Fiction Books	154	14.7%
Poetry Books	134	12.8%
Comic Books or Magazines	129	12.3%
Newspapers	121	11.6%
Sport Magazines	113	10.8%
Social Media Stories	92	8.8%
Social Media Posts	66	6.3%
Others	12	1.1%

Research question one attempted to find out the reading preferences of private primary school pupils in Ibadan, Nigeria as regards the genre. The overall result showed that 50.2% of the respondents read fiction reading materials, and this is higher than (27.4%) respondents who read textbooks and dictionaries which are academic-related reading materials.

Table 2: Media Platform for Reading Preference of Pupils

Media Platform	Frequency	Percentages (%)
Printed text	439	41.9%
Phone	278	26.6%
Laptop	273	26.1%
iPad	132	12.6%
Tablet	126	12.0%



A holistic consideration of the result indicated that 809 representing 64.8% respondents read on different electronic media platforms which included phones 278 representing 26.6% respondents, laptops 273 representing 26.1% respondents, tablets 126 representing 12.0% respondents and, iPad 132 representing 12.6% respondents. What the result connoted is that the majority of the respondents read on electronic platforms.

Table 3: Purpose for Reading of Pupils

The Purpose for Reading	Frequency	Percentages (%)
I read to score good grades in school	523	49.9%
I read to learn new things	346	33.0%
I read because I enjoy reading	267	25.5%
I read to know more about other places	243	23.2%
I read because my parents tell me to do so	189	18.1%
I read because my teacher tells me to do so	172	16.4%

The overall assessment of the result showed that 856 representing 81.7% of the respondents read for different satisfaction derived from reading which included reading to learn new things, reading for enjoyment and reading to learn more about other places. The result, however, indicated that 34.5% of the respondents read because they were compelled.

Table 4: Location Preference for Reading of Pupils

Location for Reading	Frequency	Percentages (%)
Library	365	34.9%
Classrooms	282	26.9%
Bedroom	273	26.1%
Anywhere in the House	187	17.9%
Living Room	152	14.5%
Anywhere in the School	148	14.1%
Garden	93	8.9%
Dining Room	83	7.9%
Playground	68	6.5%
Balcony	63	6.0%



The overall evaluation of the result showed that places around the home are the most preferred location for reading among the pupils surveyed as 53.6% of them read in locations within the home such as the bedroom, anywhere in the house, living room, garden, dining room, playground and balcony.

Table 5: Time Preference for Reading of Pupils

Time for Reading	Frequency	Percentages
I read anytime	601	57.4%
I read in the afternoon	213	20.3%
I read in the evening	144	13.8%
I read in the morning	89	8.5%

The result showed that the majority of the pupils would read any time as long as they have access to reading materials that meet their reading needs. It could also be deduced from the result that the pupils would read if they are less burdened with other activities that could take their time.

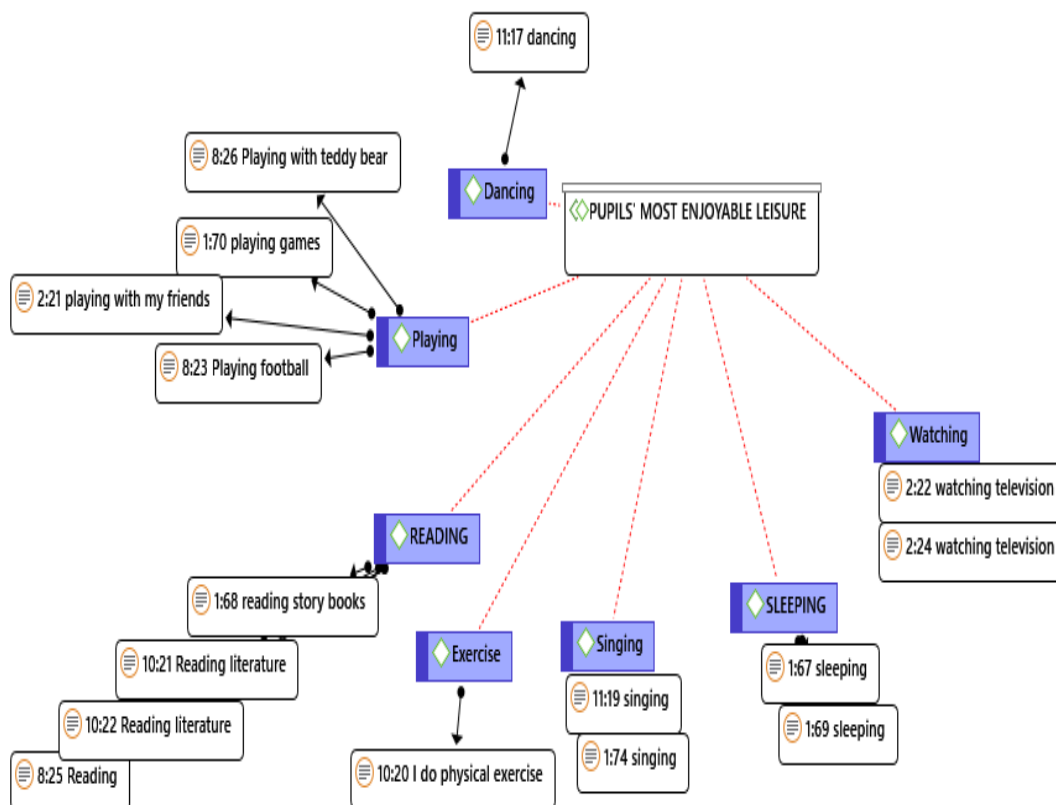


Figure 1: Pupils' Most Enjoyable Leisure Activity



The focus group discussion (FGD) was aimed at finding out the pupils' preferred leisure activity to ascertain if the pupils have a preference for reading over other activities, this also provided information on their reading preference. What is depicted in Figure 1 revealed that the majority of the private primary school pupils in Ibadan, Oyo State, Nigeria have a preference for reading over any other activity.

Discussion of the Findings

The findings of this study revealed fiction materials as the highest-ranked reading preference in terms of genre among private primary school pupils in Ibadan, Oyo State, Nigeria. This finding refuted the result of Aina, *et al.* (2011) study which established that pupils in Nigeria read as a matter of compulsion to pass examinations; thus, they read more of textbooks recommended in school than any other materials. The findings of the present study further refuted the findings of a study carried out among pupils in Osun State by Oribabor (2014). In the study, the researcher established that the majority of pupils in Nigeria read mainly to pass an examination and for this reason, they read textbooks recommended in school. Meanwhile, the findings of the study could have been influenced by its respondents who were secondary school students in public schools, unlike this present study which was carried out among private primary school pupils. It could be that secondary school students concentrate more on obtaining good grades, and for that reason read majorly textbooks. The disparity between the study and this present study could also be the geographical scope of the study because this present study was carried out in a more civilised environment than the previous study. Furthermore, the findings of this present study also refuted the report of a study by Oyewo (2012) which incidentally was also carried out in Ibadan, Oyo State, Nigeria. The study which was an investigation of the reading materials pupils read in the library asserted that the most read book genre in the library by pupils are textbooks recommended in school. One common feature of the studies which affirmed pupils' reading preference for textbooks recommended in school is the submission that the reading preference of the pupils was oftentimes limited by the unavailability of varieties of reading materials.

This present study substantiated similar studies which affirmed that pupils' reading preference favour other genres of literature. For instance, this present study affirmed the result of a study conducted in the Bahawalpur District of Pakistan by Hussain and Munshi (2011) which established pupils' preference for mostly fiction materials such as literary and storybooks, novels, romantic literature, poetry, and drama. The similarity in the result of the study and this present study could be because both studies were carried out in civilised locations. Furthermore, the result of this present study also established the findings of a survey conducted by Mead (2012) which affirmed pupils' preference for realistic fiction and fantasy storybooks. Pupils' access to different reading materials in the places where these studies were carried out



could be responsible for the results. Because, as the Revealed Preference Theory stated, pupils' preference is constrained to the available options from which they could choose. The difference in the findings of the present study and others earlier carried out in Nigeria which established that pupils have a preference for reading textbooks mostly could be that the pupils surveyed in this study had access to fiction materials. As Anyaegbu, *et al.* (2016) reported, pupils in Nigeria could express a preference for other genres of literature especially fiction materials if varieties of books are made available to them. The findings which showed pupils' revealed preference for textbooks recommended in school may have been influenced by constraints of limited available literature from where the pupils could choose. This present study has established that the majority of pupils' reading preference is fiction materials; therefore, if pupils have access to more fiction materials, their reading preference for fiction materials would increase.

Another indicator of reading preference considered in this study is the media platform on which the pupils prefer to read most. It would be assumed that the majority of the pupils would indicate printed text as their reading preference as established by many previous studies in Nigeria. On the contrary, the majority of the pupils revealed various electronic media as their reading preference in terms of platform, thus, the findings refuted the result of some previous studies on the same topic. For instance, this present study refuted the result of the study conducted among high school pupils in South Korea by DaCosta (2016) in which it was established that a higher number of pupils affirmed a preference for reading printed text over digital text especially when reading for academic purposes. Meanwhile, there is an aspect of the study that this present study also established which is that when the purpose of reading by students is entertainment and pleasure, they affirmed a preference for reading on the digital media platform. It could be established from the study that students' purpose for reading determines the media platform on which they read, and this would imply that pupils reading preference in terms of the platform is not static but flexible.

The findings of the present study also refuted the findings by Alamri (2019) who conducted a study on the reading preference of non-native English speaker pupils and asserted that 38.0% of pupils substantiated their preference for reading the printed text while 15.0% affirmed a preference for reading on electronic devices. The findings of this present study further refuted the result of another study conducted by Kazanci (2015) which established that 77.9 % of the pupils surveyed affirmed their preference for reading printed books while only 22.1% showed a preference for reading on electronic devices. The result of the study could have been that the majority of the pupils surveyed had access to printed text more than electronic reading materials because pupils would only make use of what they found available.

However, the findings of the present study affirmed the result of the study by Munohsamy (2015) which established that 70.6% of the pupils surveyed in a study



read regularly on both print and electronic devices. Another study that the findings in this present study affirmed was established by West and Chew (2014) in a survey carried out in seven developing countries which included Nigeria. It was established in the study that there was an increase in the reading activities of pupils as a result of the availability of e-devices. It could be inferred from the findings that pupils read more on electronic devices than on printed texts. Furthermore, Oriogu, *et al.* (2018), and Adeyinka *et al.* (2018) all reported an increase in use of electronic books, especially for academic-related assignments among pupils in Nigeria. This could be interpreted to mean that pupils read more on electronic platforms than on printed texts which is also established in this present study. In addition, Ukoha (2015) in a survey conducted among pupils in Nigeria established that the majority of pupils who read on electronic devices especially when it is connected to the internet, read mainly social media posts.

The investigation of pupils' reading preference in terms of purpose in this study resulted in findings which refuted the result of some previous studies carried out in Nigeria. This is because, unlike many previous studies which established that pupils read for academic purposes only, this present study established that pupils read for other purposes such as reading to learn new things, reading for enjoyment and reading to know more about other places. This present study refuted the study by Ukoha (2015) which established that pupils in Nigeria engage in reading mainly to accomplish school assignments or pass examinations. In the same vein, this present study also refuted the result of the study by Anyaegbu, *et al.* (2016) which established that pupils read mainly to pass an examination. Meanwhile, in the same study, the pupils' lack of interest in reading for other purposes than passing examinations was blamed on the non-availability of libraries in schools in Nigeria.

However, this present study affirmed the result of a study by Aramide (2015) which established that pupils' purposes for reading surpass reading to pass an examination. Similarly, this present study also found that in addition to reading to obtain good grades in school, pupils also read to learn new things, for enjoyment and to know more about other places. This finding is an indication that pupils would transit from reading as a matter of necessity or compulsion to obtain academic excellence to reading for obtaining information and for the pleasure derived from reading. Thus, stakeholders must ascertain the factors that would encourage reading for other purposes and ensure that the factors are addressed to encourage more pupils to engage in reading for purposes other than academic achievement. Creating a friendly environment for pupils to read would impact their reading preference to go beyond reading only to pass examinations. This was affirmed in the result of the studies reported in other climes where library facilities are put in place for pupils' use. For instance, a survey of 36 member countries of the Organisation for Economic Cooperation and Development (OECD) (2011) established that pupils in the member countries of the organisation showed a high preference for reading for recreation.



This study also sought to find out pupils' reading preference in terms of location and time and the study established home as the pupils' reading preference in terms of location. The implication is that pupils found it more convenient to read at home because they have access to more comfortable facilities for reading. The findings in this present study affirmed the result of the study conducted in India by Nagaraja and Manalan (2016) which established the home as the reading preference of pupils in terms of location. Similarly, this present study established the result of the study also carried out in India by Lone (2011) which also established the home as the reading preference of the pupils. The pupils reportedly chose the home because they found the home a more convenient location for reading. It could be deduced from this present study that pupils choose home as their reading preference because of the convenience of reading at home.

Furthermore, the overall assessment of pupils' reading preference in terms of location established the library as the least preferred location. This finding refuted the result of an earlier study conducted among pupils in England by Clark (2013) which established that pupils affirmed public libraries as the preferred location for reading. The reason for the pupils' preference as stated in the study is their access to varieties of reading materials, a situation which is different from what is obtained in Nigeria. The result of this present study also refuted the result of another study conducted in India by Nagashetti and Kenchakkanavar (2015) which established pupils' preference for reading in the library. The availability of library where the study was investigated and the correspondents of the study who were secondary school students could be responsible for the results obtained. It could then be deduced from this finding that pupils do not read in the library because there are no libraries in their schools or the libraries are not convenient for the pupils to read.

This study found that the majority of the pupils affirmed that they read anytime. This finding implies that pupils would read whenever they have the opportunity to do so. The findings in this present study refuted the result of a study by Lone (2011) which established that pupils affirmed morning as their most preferred time for reading. Similarly, the result of this present study also refuted the result of a study investigated in India by Nagaraja, and Manalan (2016) which established that pupils affirmed morning time as the most preferred time for reading. This is very different from the findings of the present study because the pupils who affirmed their preference for reading in the morning are the least of the students surveyed. The geographical and correspondents' scope of this present study and the previous ones are different and this could account for the variation in the result of the studies.

The situation in the location of this present study would not favour reading in the morning as many of the pupils go to school in the morning and would be occupied with class activities that they would not have time for reading.



Conclusion

The study concluded that primary school pupils' reading preference in terms of genre is fiction materials while their reading preference in terms of platform is electronic media. It further concluded that the pupils have the home as the preferred venue for reading while the purpose for reading goes beyond passing an examination to include learning new things, knowing more about other places and the enjoyment derived from reading. The study also concluded that the pupils have no specified time preference for reading as they read any time of the day.

Recommendations

Based on the findings of this study, it is recommended that private school owners should make adequate provisions for fiction books in school libraries for pupils to encourage them to read in school. It is also recommended that parents should not relent in their efforts at providing fiction books and other reading materials for pupils to sustain habitual reading at home. Parents, teachers and school librarians should not restrict pupils' reading to a particular time of the day not to discourage them from reading. Government should also make provision for libraries that are well stocked with fiction and current reading resources in every community to encourage reading in pupils whose parents could find it difficult to buy books in their homes. Restricted access to various reading platforms could discourage pupils from reading if the media platforms available do not meet their reading preferences, therefore, stakeholders should also put forces together to make sure primary school pupils are provided access to various reading platforms to avoid limiting the options from where the pupils could read. The curriculum developers should also review the primary school curriculum to make room for regular library hours in the curriculum to create opportunities for the pupils to read regularly for improved reading engagement.

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CHAPTER 61

SOFT SKILLS AND EFFECTIVE LIBRARY SERVICE DELIVERY BY LIBRARY PERSONNEL IN SPECIAL LIBRARIES IN GWAGWALADA AND KWALI AREA COUNCILS OF FEDERAL CAPITAL TERRITORY, ABUJA, NIGERIA

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Abstract

The paper assessed soft skills for effective library service delivery among library personnel in special libraries of Gwagwalada and Kwali Area Councils of FCT. The population of the study comprised library personnel and staff in special libraries of the two Area Councils. Purposive and simple random sampling technique were adopted in selecting the samples for the study while data was gathered by the researchers with questionnaire developed by the researchers for library personnel and staff. The research instruments were validated by two experts from the fields of librarianship and measurement and evaluation and trial tested in one special library of Abuja municipal Area council (AMAC) that was not part of the original study. Data collected from the study was analyzed using descriptive statistics of frequency count, mean scores and Pearson's product moment correlation coefficient (r). Based on the findings of the study, the following recommendations were made, inclusion of soft skills in LIS curriculum, provision of adequate library resources, Introduction of 21st century library services among others.

Keywords: *Soft skills, Effective library service, Library personnel, Special libraries*



Introduction

Special libraries have been established for the specialised needs of the parent institution in order to meet the vision and mission statement of the parent organization. Special libraries belong to particular establishments such as government ministries, research institutes, banks and professional bodies. According to Bilawar and Khardekar (2013) special libraries plays a pivotal role in research activities for national development and its advancement. Services rendered by special libraries include reference, translation, abstracting and indexing, scanning, extracting, photocopying, E-resources, current awareness services (CAS), selective dissemination of information, (SDI), web 2.0 services such as wikis, blogs etc. For special libraries to render effective library services the personnel should have more varied background than those working in other libraries. Ideally, such personnel should have both library and subject expertise.

Library service refers to all professional assistance that are given in order to satisfy the information needs of library users making use of adequate and current resources. To satisfy the information needs of users, library service should be effective. Oghenekaro (2018) suggested the need for libraries to strive to be effective in their services to users in order to remain relevant in the information age. Effective user service in special libraries is imperative in the 21st century library as it will make library users feel important, improve learning, increase patronage, promote library parent organization image. User service is the act of taking care of the user's needs by providing and delivering professional, helpful, high-quality service and assistance before, during and after users' requirements are met (Oghenekaro 2018). According to Chukwueke (2018) library services involve the totality of assistance provided by the library for its users. These services to a large extent determine the wellbeing of the library users, educationally, emotionally and otherwise. He classified library services into technical and readers services while affirming that these services play significant and indispensable roles in inculcating reading habits in students at the secondary education level which invariably promotes their academic performance. Okonkwo, Abubakar and Nwafor (2022) defined library services as those outlined in the library in order to solve the information needs of the library users at a particular given time. It entails the entirety of support provided by the library for its users. It can also be seen as the effort made by library personnel to endeavour with the available and accessible resources to provide answers to user's request. Effective library services can- not be achieved without considering indices such as infrastructural facilities, current materials, competent library personnel and sound budgetary allocation among others.

For effective library service to users in special libraries, their personnel need some personal attributes that will endear them to users. Some of the skills which librarians need to possess in this 21st century information age include, interpersonal



skills, leadership, management, information literacy skills and information technology etc. These skills are meant to complement the hard skills or professional competency.

In the 21st century librarianship, educational qualification and work experience may not guarantee success and career progression in the work place. Soft skills of the employees defined as personal and learned skills are needed to complement the hard skills. According to Sachin (2019) special library personnel must have the skills to attract the users to the library. Personal and learned skills such as Leadership, listening, good communication, interpersonal skills, presentation, writing and marketing skills are needed by library personnel for effective service delivery. Oghenekaro (2018) opined that to achieve users' satisfaction, library personnel should be empathetic, caring and attentive, providing high quality service in a timely manner, performing all duties in a courteous manner, having extensive knowledge of library services among others, and that the proper and polite way expected of the 21st century library personnel when delivering users service can be expressed through appearance, approachability, positive attitude, coping ability and communication.

In addition to expertise in library and information science (LIS) skills, library personnel need to have certain other managerial skills such as communication, time management, organizational awareness, problem solving and leadership skills (Arun and Devi, 2020). They defined soft skills as desirable qualities for certain form of employment that does not depend on acquired knowledge, and include common sense, ability to deal with people and a positive flexible attitude. The LIS personnel must encounter rapidly changing environments that require divers skills, new thinking and broader perspective and must be prepared to develop innovative ideas for the capture, process and sharing of knowledge and demonstrate good management practices if they want to remain relevant in the emerging knowledge age.

Notwithstanding the appreciable high number of published works on effective library services delivery, no effort was made to unravel soft skills for effective library service delivery among special libraries personnel in Gwagwalada and Kweli Area Councils of FCT. In view of the above, it becomes imperative to unravel soft skills for effective library service delivery among special libraries personnel.

Statement of the Problem

Effective library service is at the heart of librarianship since the profession is service oriented. School library personnel have a responsibility and mandate of delivering effective library service to satisfy users information needs in special libraries. However, this important service seems inadequate in special libraries of FCT. Several efforts have been made to improve library services in FCT such as provision of library materials, training of library personnel, and creation of conducive reading



environment for users. Despite all efforts, the problem has persisted without any identifiable solution. Based on the persistence, special library personnel have failed to deliver effective library services appropriately and at the right time. The researchers are of the view that lack of requisite skills such as soft skills may be responsible for the poor service delivery by the special library personnel. It is in the light of the foregoing that this research investigated the influence of soft skills on effective library service delivery among special libraries personnel in Gwagwalada and Kwali Area Councils of FCT, Abuja.

Objectives of the Study

The specific objectives of the study are as stated below:

1. determine the types and level of soft skills possessed by library personnel in special libraries of Gwagwalada and Kwali Area Councils of FCT, Abuja
2. identify the different types of special library services provided to Users in Gwagwalada and Kwali Area Councils of FCT, Abuja.
3. find out the level of effectiveness of library services delivered by special library personnel in Gwagwalada and Kwali Area councils of FCT, Abuja.
4. establish the relationship between soft skills and effective library service delivery in Gwagwalada and kwali Area Councils of FCT, Abuja.

Research Questions

The study is guided by the following research questions:

1. What is the level of soft skills possessed by special library personnel in Gwagwalada and Kwali Area Councils of FCT, Abuja
2. What are the different types of library services offered in special libraries of Gwagwalada and kwali Area Council, FCT, Abuja.
3. What is the level of effective library service delivery in special libraries of Gwagwalada and Kwali Area Councils of FCT, Abuja

Hypothesis

1. There is no significant relationship between soft skills of library personnel and effective library services in special libraries of Gwagwalada and Kwali Area Councils of FCT, Abuja



The study would be beneficial to special library personnel, parent organisation and library users. Library personnel will be able to identify the required personal and other attributes and ensure their acquisition while organisations will be more effective in the services they render to clientele thereby increasing patronage. Finally, users will be able to satisfy their information needs when courteous and humane library personnel attend to their request and queries.

Literature Review

Special library is a library which collects updated and comprehensive information in the subject concerning the parent organization and disseminating this information promptly to the people associated with the organization in anticipation of demand. American library Association (ALA) 2013 defined special libraries as those established, supported and administered by a business firm, private cooperation, association, government agency or other interest groups of agency to meet the information needs of its members or staff in pursuing the goals of the organization. According to Onwubiko (2021) public institutions need to equip themselves with relevant information in tandem with their objectives and to achieve this, the special library has a prominent role to play given the certainty of information to all forms of human development. This type of library is specially designed and structured to provide specialised information services for specialised needs. Onwubiko opined further that special libraries as the name denotes are special in every context of it ranging from collections to users. Its objective is to satisfy the information needs of these special users with a view to realizing the broad goal and objectives of the parent institution who are also the sole financiers. Special library collections are restricted to the specialised subject area of their parent institutions with subject area specialist as librarians.

Eke (2013) assessed special library facilities in Nigeria using a survey research design. 25 questionnaire were administered on 25 heads of special libraries. The result shows that out of 176 staff of the 14 special libraries only 50 (28.4%) were professionals whereas 14 were para-professionals and support staff. Also, Onwubiko (2021) investigated future and challenges of special libraries as transformation agent in public institutions in Nigeria. Findings from the study revealed that special libraries were performing far below by every standard in their functions as transformation agents. Special libraries have special subject, special clientele and they render specialised information services to users.

Effective library services that can be evaluated is required in special libraries to satisfy the information needs of users, thereby meeting the mission and vision statements of the organization. The mission statement of any special library is to render excellent services to its users' which implies that a library is successful only when it can meet the information needs of its users. Oghenkaro (2018) opined that



the librarian must have knowledge and evaluation skill of library services. This evaluation methods helps in understanding the problems also for solutions in the services and also helpful for updating services. Library services may be classified into technical and readers services and could be direct or indirect (Chukwueke, 2018). These services to a large extent, define the well being of the special library clientele, educationally and otherwise. Fashola (2015) in Chukwueke (2018) asserts that library services besides aiding the studies of children and assisting teachers in their teaching and periodical researches is mainly concerned to procreate an urge for reading amongst the children. According to Adegun, Oyewumi, Oladapo and Sobalaje (2015) the primary purpose of any library is provision of information needs of the users. Likewise research libraries have a right to expect library services that are commensurate with their needs, provided by competent library personnel and founded on adequate collections which are easily available and accessible. Provision of effective library service is an essential part of special libraries which should not be neglected for the organizations survival. The philosophy of librarianship according to Adeoye and Poopola (2011) is based on the concept of effective library services and provision of relevant resources to users. The effectiveness of library services and resources is important and vital to special libraries. In the opinion of Onuoha, Omokoje and Bamidele (2013) the effectiveness of the library as a whole can be inferred from its service position. Because of the advent of ICT, special libraries can only distinguish themselves through effective service provision and availability of adequate, qualitative and updated resources.

Chukwueke (2018) surveyed the effects of library services on the educational development of secondary school students in Abia state using descriptive survey method. His findings revealed that libraries are the drivers of educational development through its numerous services. Also Okonkwo, Abubakar and Nwafor (2022) x-rayed the challenges of rendering effective library services to users in selected University library in South-South, Nigeria. Their findings revealed the benefits of rendering effective library services such as academic advancement, research, reading and promotion. The study also identified recruitment process as one of the challenges for rendering effective service to users. Adigun, Oyewumi, Oladapo and Sobalaje (2015) in their findings on effectiveness of library services and resources in an African University revealed that effective library service was rendered in the University surveyed. Surveying staff quality and information service delivery in libraries, Hundo (2020) revealed that the main services available in libraries surveyed are CAS, Reference, Bibliographic, A-V and shelf labelling. Since librarianship is service oriented, library personnel who render the services should possess personal and learned skills known as soft skills to be able to compete in this 21st century information world.

The area of soft skills in librarianship is an emerging field which a library worker needs to function affectively in today's information age. A certificate can get



a good job for library personnel but may not keep him in the job if the necessary human qualities referred to as soft skills are not imbibed. As the need for employees with technology skills and other expertise increase with the library environment, so too has the need for employees with soft skills. Soft skills according to Gabhanne (2014) are a collection of methods and techniques by which you can influence the behaviour of others in a way that enhance your enlightened self interest. He listed components of soft skills to include, interpersonal, communication, motivation, listening, leadership, decision making, presentation, negotiation, reading, writing and stress management. The definition was collaborated by Decker (2020) who referred to soft skills as personal learnable attributes such as emotional intelligence, communication aptitude, persuasion facility, story- telling ability, collegiality and even wooing ability. Soft skills includes' intelligence, communication management, negotiating skills etc. They can also be termed as life skills. In the 21st century competitive world, soft skills play critical and important role in effective library service delivery to users in special libraries. These skills are catching up and getting more importance for employees, researchers and other professionals. Importantly, soft skills have an added value to the library personnel in that it improves their personality, attitude and interpersonal relation while manifesting their real potentials. Soft skills no doubt plays a significant role rendering effective library service delivery in that users will be attracted in libraries where library personnel exhibit these personality traits. It is critical that special library personnel such as circulation, reference librarians, IT staff etc have the ability to effectively interact with library users in the proper use of library resources and attending to user queries.

Gabhanne (2014) surveyed soft skills for library professionals and his findings revealed the application of soft for the betterment of the library services which are useful for the popularisation of the services in the library. Also Decker (2020) X-rayed factors in academic libraries: The demand for soft skills in library employees. His findings revealed that employers of labour tend to choose candidates that have better personalities despite lower hard skills competencies due to the fact that skills training is easier than character formation.

Kang and Ritzahaupt (2015) studied educational technologist job advertisements extensively across the past seven years and discovered that in recent job postings, the most frequently listed skills required are soft skills such as oral and written communication, collaboration, customer service, interpersonal communication etc. Analysing library professionals' communication skills: Status and effectiveness on workplace productivity, Aamier and Muhammad (2021) argued that librarians have a high level of communication skills and there is no significant difference in communication skills level concerning their demographic characteristics. Hundo (2020) surveyed staff quality and information service delivery in libraries in French based institutions using descriptive survey design of the correlation type and a total of 540 respondents. His findings revealed that quality of



library staff manifest in their communication, information resources skills and knowledge from trainings and education.

The study is based on the theory of Emotional quotient (EQ) which deals with the ability to maintain peace with others, keep to time, be responsible, be honest, respect boundaries, be humble, genuine and considerate. People with higher EQ tend to go further in life than those with high Intelligence quotient (IQ) but low EQ. EQ represents character, while Social quotient represents the persons' charisma.

Methodology

Descriptive survey research design was adopted for the study. The population of the study consist of all library personnel and users in special libraries of Gwagwalada and Kwali Area Councils of FCT, Abuja while the accessible population comprise 4 special institutional libraries located in the two Area Councils. The sample size for this study consists 10 special library personnel that were purposely selected from the 4 special libraries surveyed and 60 library users that were randomly selected based on the provided users' statistics. The instruments used for data collection for this study were two structured sets of questionnaires for library personnel and Users. The questionnaires consist two sections A and B. Section A, solicit for personal data on the respondents such as age, educational qualifications etc while section B consist of items soliciting for information on the opinions of the respondents. The questionnaires were developed by the researchers and validated by two experts in librarianship from University of Abuja and one measurement/ evaluation expert from Nigerian Educational Research and Development Council (NERDC) Sheda Abuja. For reliability, the instrument was trial tested in one special library that was not part of the original study. For the collection of the required data for the study, the researchers visited the selected libraries and administered the questionnaires with the assistance of the librarians in the libraries surveyed. Data collected was analyzed using descriptive statistics of frequency counts and mean scores. In drawing conclusion, decision rule was applied in line with the grand average mean obtained. Thus, an item is accepted if above grand mean average and rejected if below. The hypothesis was tested using Pearsons product moment coefficient correlation (r) PPMC.



Answers to Research Questions

Research question 1: What is the level of soft skills possessed by special library personnel in Gwagwalada and Kwali Area Councils of FCT?

VARIABLES	VU	U	L	VL	N scores	mean	Decision
Leadership	3	-	2	5	10	2.9	Accepted
Communication	4	-	3	3	10	2.5	Rejected
Listening	4	-	2	4	10	2.6	Rejected
Good appearance	3	1	3	3	10	2.6	Rejected
Approachability	3	1	1	5	10	2.8	Accepted
Time management	3	-	4	3	10	2.8	Accepted
Team work	3	-	2	5	10	2.9	Accepted
Persuasion	3	-	4	3	10	2.7	Accepted
Total	26	2	21	31	80		
Grand mean						2.73	

Key: VU-very unlikely, U-Unlikely, L-likely and VL-very likely

Table 1 above represents responses on the types and level of soft skills possessed by library personnel. The result showed that leadership (2.9), approachability (2.8), time management (2.8), team work (2.9) and persuasion (2.7) skills were all accepted as soft skills possessed by library personnel. Communication (2.5), listening (2.6) and good appearance (2.6) skills were rejected. Thus, leadership, approachability, time management, team work and persuasion skill were affirmed as soft skills possessed by library personnel in special libraries in Gwagwalada and Kwali LGAs, FCT, Abuja. Overall, a high level of soft skills possession was established among the library personnel in the selected libraries which may be due to the culture of the organisation that emphasised acquisition and possession of skills as key components of their culture. This is established by using the grand mean of 2.73 which is above the criterion mean of 2.50 set as benchmark. The finding revealed that library personnel in the two Area Councils surveyed possessed enough soft skills that will enable them carry out effective library services in their libraries. However, an improvement is needed in the areas of communication, listening and appearance. The finding is supported by Decker (2020) whose findings revealed that employers of labour tend to choose candidates that have better personalities despite lower hard skills competencies due to the fact that skills training is easier than character formation. This was collaborated by Kang and Ritzahaugt (2015) who discovered that in recent job postings, the most frequently listed skills required are soft skills such as oral and written communication, collaboration and time management. Also, Oghenekaro (2018) findings revealed that in achieving users' satisfaction, library personnel should be empathetic, caring and attentive, providing high quality service in timely manner



and performing all duties in a courteous manner. The findings are in contrast with that of Sachin (2019) whose study revealed that special library personnel did not possess skills such as leadership, listening, communication, interpersonal, presentation and writing skills to attract users to the library. The proper and polite way expected of the 21st century library personnel when delivering users services can be expressed through appearance, approachability, positive attitude, coping ability and communication. This finding may be different from what is obtainable in other categories of libraries including public libraries. There is need to conduct studies on the other categories of libraries to ascertain this.

Research question 2: What are the different types of library services offered in special libraries of Gwagwalada and Kwali Area Council?

VARIABLES	SD	D	A	SA	N	Mean(x)	Decision	
Internet/database	6	3	1	-	10	1.6	Rejected	
Electronic delivery of document	9	1	-	-	10	1.1	Rejected	
Inter-library loan	4	4	2		10	1.8	Rejected	
SDI	3	2	5	-	10	2.2	Accepted	
CAS	4	2	3	1	10	2.1	Accepted	
IAS	5	3	1	1	10	1.8	Rejected	
Reference	4		5	1	10	2.3	Accepted	
Lending	3	1	3	3	10	2.6	Accepted	
Total	38	16	20	6	80			
Grand mean average							1.94	

Key: SD-Strongly disagree, D-Disagree, A-Agree, SA-Strongly agree

Table 2 above indicated library personnel response rates on the library services offered to their users. Traditional library services such as SDI (2.2), CAS (2.1), reference (2.3) and lending (2.6) were accepted as services rendered while 21st century library services such as internet/data base (1.6), electronic delivery of documents(1.1), IAS(1.8) were rejected. Inter-library loan is also rejected. Findings revealed that only traditional library services which are not in tune with the 21st century library service were delivered in the special libraries surveyed. The finding is in agreement with that of Hundo (2020) whose study revealed that the main services available in libraries surveyed are CAS, Reference, bibliographic, Audio-visual (AV) and shelf labelling. Chukwueke (2018) in his survey of library services revealed that libraries are the drivers of educational development through its numerous services. None availability of 21st century library services will definitely affect the job relevance of library personnel as revealed by Adegun, Oyewumi, Oladapo and Sbalaje (2015) who opined



that the primary purpose of any library is to provide the information needs of its users. Furthermore, research libraries have a right to expect library services that are commensurate with their needs, provided by competent library personnel and founded on adequate collection which are easily available and accessible.

Research question 3: What is the level of effective library service delivery in special libraries of Gwagwalada and Kwali Area Councils?

VARIABLES	VL	L	H	VH	N	Mean (x)	Decision
Availability of professionals	18	20	10	12	60	2.3	Accepted
IT equipment	23	23	10	4	60	1.92	Rejected
Accessibility of material	28	16	15	1	60	1.8	Rejected
Satisfaction of information needs	22	21	16	1	60	1.9	Rejected
Proactive staff	26	12	16	6	60	2.0	Accepted
Prompt response to queries	14	28	12	6	60	2.2	Accepted
Staff competency	28	10	6	16	60	2.2	Accepted
Individual care	22	18	10	10	60	2.1	Accepted
Total	181	148	95	56	480		
Grand mean						2.05	

Key: VL-very low, L-Low, H-High, VH-Very High

Table 3 provides data in respect of research question 3 in which case, it represents respondents mean scores of service effectiveness in special libraries of Gwagwalada and Kwali Area Councils. The result showed that availability of professionals, proactive staff, promptness to response to queries, staff competency and individual care have a mean score above the benchmark of 2.05 (grand mean) and were accepted while IT, accessibility of library materials and satisfaction of information needs of users were rejected. The finding revealed that the users cannot easily access library materials resulting in the non-satisfaction of their information needs. In addition, professional and competent library personnel that possess the required soft skills are available but possibly could not satisfy users information needs due to non-availability of resources and lack of subject area specialization. The finding is in contrast with that of Adegun, Oyewumi, Oladapo and Sobalaje (2015) who revealed that effective library services were delivered in African Universities. For special libraries to render effective services, the personnel should have more varied background such as subject expertise. Oghenekaro (2018) suggested the need for libraries to strive to be effective in their services to users in order to remain relevant in the information age. This will make users feel important, improve learning, increase patronage and promote parent



organization image. This was corroborated by Onuoha, Omokoje and Bamidele (2013) who opined that the effectiveness of the library as a whole can be inferred from the service position and special libraries can only distinguish themselves through effective service provision and availability of adequate, quantitative and updated resources.

Hypothesis

There is no significant relationship between soft skills and effective library service delivery

Table 4

Variables	Mean scores	N	r	Sig.(p)	Remark
Soft skills	21.8	10	1.00		Very significant
Effective service delivery	16.42	60			

Table 4 above presented a very significant relationship between soft skills and effective library service delivery. Findings from the study revealed that for library personnel to deliver effective services in special libraries, there is need to develop soft skills that would enable them satisfy the information needs of their numerous users. Gabhanne (2014) surveyed soft skills for library professionals and his findings revealed the application of soft skills for the betterment of the library services which are useful for the popularisation of the services in the library. Soft skills play critical and important role in effective library service delivery to users in special libraries.

Conclusion

Special libraries in Gwagwalada and Kwali Area Councils of FCT have library personnel that possess soft skills for satisfying the information needs of users. However, they could not achieve this due to non-accessibility of the materials by their various clienteles leading to ineffective library services delivery at the two Area Councils surveyed. This is evidenced in their inability to satisfy the information needs of their users towards the attainment of the mission and vision statements of their parent organization.



Recommendations

The following recommendations were proffered based on the findings of the study:

1. Inclusion of soft skills in library and information science curriculum
2. Provision of current and adequate resources for the use of library personnel in meeting the information needs of the users.
3. Introduction of 21st century library services such as internet/database, electronic delivery of document, web 2.0 etc
4. Library materials should be documented and made easily accessible to their numerous users towards satisfaction of their information needs
5. Training and re-training of library personnel through workshops, seminars etc on the importance of soft skill acquisition.

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