PREPAREDNESS AND ATTITUDE OF STUDENTS TOWARDS CONDUCT OF SENIOR SCHOOL CERTIFICATE EXAMINATION IN ELECTRONIC MODE IN NIGER STATE, NIGERIA

AYODELE, AKINBOWALE DELE & FALODE, OLUWOLE CALEB (PH. D)
Department of Educational Technology,
Federal University of Technology, Minna, Niger State, Nigeria
Phone No: +234-8038608594, +234-8069626979
E-mail: waleayodele42@gmail.com, oluwole.falode@futminna.edu.ng

Abstract
The purpose of this study was to determine the preparedness and attitude of students towards conduct of Senior School Certificate Examination (SSCE) in electronic mode in Niger State, Nigeria. Descriptive survey research design was adopted and the sample for the study consisted of 600 final year students from 150 (75 public and 75 private) secondary schools in Niger State. A combination of purposive, proportionate stratified sampling and simple random sampling techniques were used to select respondents for this study. The instrument used for data collection was a questionnaire designed by the researchers and validated by two computer-based test (CBT) experts among others. The questionnaire was divided into section A, B and C and used to collect data on demographic profiles, attitude and preparedness respectively. Using Cronbach alpha formula, the reliability coefficients of the questionnaire for sections B and C were found to be 0.78 and 0.80 respectively. The data collected were analyzed using mean, standard deviation and independent sample t-test statistics. Two research questions were answered and two null hypotheses were tested at 0.05 alpha level of significance. The results revealed that students have positive attitude and are prepared for conduct of SSCE in electronic mode. However, a significant difference exists in favour of students in private schools. Based on the findings of this study, it was recommended among others that students should be encouraged and taught how to make judicious use of their smart phones for more of educative purpose rather than entertainment, as smart phones have been discovered to be a vital tool for edutainment. This will go a long way helping students maintain their preparedness for electronic examinations.

Keywords: Attitude, Electronic examination, Preparedness, Private and Public Secondary Schools, Senior School Certificate Examination

Introduction

In this era of Information and Communication Technology (ICT), people, offices and institutions have started exploiting the potentials of ICT facilities to go paperless. Many educational institutions are now reconsidering their traditional paper-based methods of assessing students and are now considering the viability of conducting electronic examinations (Alraja & Uddin, 2016). Electronic examination (e-exam) is a method of administering tests in which the responses are electronically recorded, assessed, or both. It involves the conduct of examination through the internet or the use of computers (Ayo *et al.*, 2007). Electronic examination is also referred to as Computer-Based Testing (CBT) or Computer-Base Examination. Electronic examinations have a number of important advantages compared to paper-based exams (PBE) such as efficiency, immediate scoring and feedback in the case of multiple-choice question exams (Bamidele, 2016).

The prominent role of ICT application and use in the modern world has been recognized by the Federal Government of Nigeria in the National Policy on Education and directed that ICT should be integrated into education in Nigeria (Federal Republic of Nigeria, 2004). For Nigerian government to fully actualize the goal of integrating ICTs into education in Nigeria,

stakeholders in education particularly the students must acquire a level of preparedness that would enable them utilize various ICT facilities, software packages and applications most efficiently (Bandele, 2015).

Preparedness is the state of being ready or prepared for a particular situation or for something to happen (Ord, 2010). The preparedness of students to take advantage of computer technology to assist in their study and course work is an important issue for those concerned with improving the effectiveness of teaching and learning process. Preparedness is not merely a state of readiness, but a theme that has permeated most aspects of educational assessment management as it has and continues to evolve in Nigeria and elsewhere (Ord, 2010). It is generally recognised that no organisation can function without a strong preparedness capability. This vital capability is built only through the efforts of training and exercising the right attitude (Ehondor & Omoruyi, 2013).

Attitude by definition is an inner psychic state influencing behaviour (Butler, 2013). Attitudes are formed in the process of experience and their change is possible due to the internal and external factors. It could be positive or negative, depending on an individual's experiences. Attitude towards electronic examination in this study is the ways of thinking and feelings of students towards taking computer-based test. Thus, it is important that students exhibit positive attitude towards electronic examinations if its implementation for Senior School Certificate Examination would be successful in Nigeria.

Senior School Certificate Examination (SSCE) is the final examination for secondary school students which is being conducted at the end of the secondary school studies (Tirozzi, 2002). In other words, SSCE is an examination intended for students in the 3rd year of their senior secondary education in Federal Unity College, Federal Secondary Schools, State Secondary Schools and all accredited private secondary schools in Nigeria. Examination bodies such as West African Examination Council (WAEC) and National Examinations Council (NECO) conduct the SSCE. The SSCE is in two categories, namely SSCE internal and SSCE external. While SSCE internal is for students/candidates in the final year of their senor secondary education, SSCE external is majorly for private candidates/student, that is, students/candidates not in the school system. The two major school types (public and private secondary schools) in the federation usually present students/candidates for the SSCE internal.

School types in this study mean the two major types of school in Nigerian educational system which are public and private schools. Public schools are owned and run by the government, while private schools are owned and run by individuals for profit. The educational structures for both private and public secondary schools are the same. And there is no distinction in terms of social-cultural context (climate, religious and tradition) between private and public schools (Nguyen & Raju, 2014). However, researches have shown that while public schools hardly cover their scheme of work, private schools do. According to Lubienski *et al.* (2008), the reason why the private schools cover their scheme of work and their students perform better in their SSCE was because of organization of extra-lessons, extension of classes, organization of holiday lessons and availability of ICT facilities. Could this also be the case if the SSCE were now to be conducted in electronic mode? Thus, it is important that a comparative study/survey be made to ascertain the level of preparedness and attitude of students in public and private secondary schools towards conduct of SSCE in electronic mode.

Statement of the Research Problem

The paper-and-pencil mode of examination that is being used for the conduct of SSCE in Nigeria has been characterized by numerous problems and fraudulent practices such as impersonation, cheating in examination halls, cases of missing scripts, printing and distributing

millions of question papers, moving of examination materials across the country by road thereby putting at risk the life of many examination officers, shortage of examination materials, improper scoring of examinees' responses, delay in computing and processing of results, among others.

However, studies have shown that electronic examination would tackle or drastically reduced these numerous problems and fraudulent practices associated with paper-and-pencil based examination. Hence, public examination bodies such as WAEC and NECO would want to implement electronic mode for conduct of SSCE. Now the questions, if electronic examinations are to commence in Nigerian secondary schools today, are students prepared for it in Niger State? Also, what will be the students' attitude towards it? It is on this note that this study sought to determine the preparedness and attitude of secondary school students towards conduct of SSCE in electronic mode in Niger State.

Aim and Objectives of the Study

The aim of the study was to determine the preparedness and attitude of students towards conduct of SSCE in electronic mode in Niger State, Nigeria. Specifically, the study was carried out to:

(i) determine the preparedness of secondary school students for conduct of SSCE in electronic mode in Niger State.
(ii) ascertain the difference in the preparedness of secondary school students for conduct of SSCE in electronic mode based on school type in Niger State.
(iii) find out the attitude of secondary school students towards conduct of SSCE in electronic mode in Niger State.
(iv) ascertain the difference in attitude of secondary school students towards conduct of SSCE in electronic mode based on school type in Niger State.

Research Questions

The following research questions were answered in this study:

(i) Are secondary school students prepared for conduct of SSCE in electronic mode in Niger State?
(ii) What is the attitude of secondary school students towards conduct of SSCE in electronic mode in Niger State?

Research Hypotheses

The following null hypotheses were tested in the study:

Ho_1: There is no significant difference in the preparedness of students in public and private secondary schools for conduct of SSCE in electronic mode in Niger State.
Ho_2: There is no significant difference in the attitude of students in public and private secondary schools towards conduct of SSCE in electronic mode in Niger State.

Methodology

The research designed used in conducting the study was descriptive survey. The population for this study comprised the entire students in both public and private accredited secondary schools in Niger State, Nigeria. However, for reason of feasibility, the target population for this study was 31,682 final year students from 239 secondary schools (public and private) in 10 Local Government Areas (LGAs) selected across the whole seven educational zones in Niger State. The selected LGAs are: Bida, Borgu, Bosso, Chanchaga, Kontagora, Lapai, Mokwa, Paikoro, Rijau and Suleja.

The sample for this study consisted of 600 final year students from 150 (75 public and 75 private) secondary school which was determined by using Krejcie and Morgan (1970) sample

size determination table. A multi-stage sampling technique was employed in selecting respondents for the study. First, 10 local government areas (more than one-third of the entire local government areas in Niger state) were purposively selected across the seven (7) educational zones in Niger State. They were purposively selected to ensure that each of the sampled local government area has both public and private accredited secondary school(s). Thereafter, proportionate stratified sampling technique was used to select 150 (75 public and 75 private) secondary schools from the 10 local government areas. Then, simple random sampling technique was used to select four (4) students from each secondary school, making a total of 600 students (300 public school students and 150 private school students).

The research instrument used for data collection was a structured questionnaire constructed by the researchers and validated by two computer-based test (CBT) experts, two e-learning experts, one educational technology expert and one language education expert, all from the Federal University of Technology, Minna, Niger State. The questionnaire comprised section A, B and C. Section A was used to collect demographic data such as name of school, school type and gender. Section B consisted of ten (10) items that sought to assess students' attitude towards conduct of SSCE in electronic mode, while section C consisted of fifteen (15) items that sought to assess the preparedness of students for conduct of SSCE in electronic mode. For section B and C of the questionnaire, a four-point rating scale of Strongly Agree (SA) awarded 4 points, Agree (A) awarded 3 points, Disagree (D) awarded 2 points and Strongly Disagree (SD) awarded 1 point was used. Using Cronbach alpha formula, the reliability coefficients of the questionnaire for sections B and C were found to be 0.78 and 0.80 respectively.

The data collected from the sampled students were analysed using descriptive and inferential statistics. The two (2) research questions were answered using descriptive statistics of mean and standard deviation. In section B of the questionnaire, the mean response below 2.50 was adjudged as having negative attitude towards conduct of SSCE in electronic mode, while mean response of 2.50 and above was adjudged as having positive attitude towards conduct of SSCE in electronic mode. Similarly, in section C of the questionnaire, the mean response below 2.50 was adjudged as not being prepared for conduct of SSCE in electronic mode, while mean response of 2.50 and above was adjudged as being prepared for conduct of SSCE in electronic mode. Independent sample t-test statistics was used to test the two (2) research hypotheses for this study. This is because independent sample t-test is normally used to test a difference between the means of two independent groups. The significant difference was ascertained at 0.05 alpha level.

Results

Research Question 1: Are secondary school students prepared for conduct of SSCE in electronic mode in Niger State?

Table 1: Mean and Standard Deviation of Students' Response on Preparedness for Conduct of SSCE in Electronic Mode in Niger State

S/N	Item	N	Mean	SD	Decision
1	I have a personal computer.	600	2.31	0.958	Disagree
2	I have access to computers at home/school.	600	2.80	0.999	Agree
3	I use to attend computer practical class at least once in a week	600	2.70	0.985	Agree
4	I use to participate actively in class activities during teaching-learning of ICT/computer studies in my school.	600	3.21	0.870	Agree

5	I can read information on the computer screen.	600	3.57	0.659	Agree
6	I can make use of a computer mouse very well.	600	3.41	0.762	Agree
7	I use to type and produce document with computers.	600	2.94	0.879	Agree
8	I have a good knowledge of the fundamentals and basic use of computer	600	3.19	0.738	Agree
9	I use computer to send and receive mails	600	2.78	0.939	Agree
10	I can save and retrieve information in a computer.	600	3.08	0.843	Agree
11	I can boot and shut down a computer.	600	3.11	0.801	Agree
12	I have knowledge of internet application.	600	3.10	0.730	Agree
13	I use internet to source information.	600	3.00	0.884	Agree
14	I have sat for electronic examination before	600	2.23	0.994	Disagree
15	I am fully prepared for electronic examination/CBT	600	3.07	0.864	Agree
Average Mean and Standard Deviation			**2.97**	**0.860**	**Agree**

Decision mean = 2.5

Table 1 shows that a total number of 600 students responded to 15 items. Respondents agreed to 13 out 15 items and the average mean score of response to all the 15 items is 2.97 (with average standard deviation of 0.860) which is greater than the decision mean score of 2.50. This implies that secondary school students are prepared for conduct of SSCE in electronic mode in Niger State. Also, the 15 items had their standard deviation ranged from 0.659 to 0.999 which revealed that the respondents were not far from the mean and from one another in their opinions.

Research Question 2: What is the attitude of secondary school students towards conduct of SSCE in electronic mode in Niger State?

Table 2: Mean and Standard Deviation of Students' Responses on Attitude towards Conduct of SSCE in Electronic Mode in Niger State

S/N	Item	N	Mean	SD	Decision
1	I prefer electronic exam/CBT to the pencil and paper-based exam.	600	3.33	0.681	Agree
2	I want WAEC and NECO to conduct SSCE in electronic mode	600	3.21	0.810	Agree
3	I wish to learn more about electronic exam/CBT.	600	3.64	0.566	Agree
4	Participating in electronic examination would not only test my knowledge, but also expand it.	600	3.57	0.604	Agree
5	Conducting SSCE in electronic mode would ensure prompt or timely release of examination results.	600	3.37	0.738	Agree
6	Using electronic mode for conduct of SSCE would improve my academic performance.	600	3.32	0.731	Agree
7	The devices that are used for electronic exam/CBT are reliable.	600	2.93	0.790	Agree

8	Electronic examination/CBT would help improve my computer skill.	600	3.62	0.596	Agree
9	Conducting SSCE in electronic mode would reflect the true academic performance of every student.	600	3.16	0.810	Agree
10	Electronic examination/CBT would reduce examination malpractices.	600	3.58	0.667	Agree
Average Mean and Standard Deviation			**3.37**	**0.699**	**Agree**

Decision mean = 2.50

Table 2 shows that a total number of 600 students responded to the 10 items. Respondents agreed to all the 10 items and the average mean score of response to all the 10 items is 3.37 (with average standard deviation of 0.699) which is greater than the decision mean score of 2.50. This implies that students have positive attitude towards conduct of SSCE in electronic mode in Niger State. Also, the 10 items had their standard deviation ranged from 0.566 to 0.810 which revealed that the respondents were not far from the mean and from one another in their opinions.

Testing of Hypotheses

Hypothesis 1: There is no significant difference in the preparedness of students in public and private secondary schools for conduct of SSCE in electronic mode in Niger State.

To test this hypothesis, independent sample t-test was applied on the response mean scores of students in public and private secondary schools regarding their preparedness for conduct of SSCE in electronic mode in Niger State as presented in Table 3.

Table 3: Independent Sample t-test Analysis on the Mean Scores of Administrators' Responses on their Preparedness for conduct of SSCE in Electronic Mode

School Type	N	Mean	S.D	Df	t-value	p-value	Decision
Public	300	71.90	11.305	598	6.426 *	0.000	Reject (Ho_1)
Private	300	78.08	11.062				

* = Significant at 0.05 level

The result presented in the table 3 shows that students in public school had a mean score of 71.90 with standard deviation of 11.305, while students in private schools had a mean score of 78.08 with standard deviation of 11.062. This is further illustrated in the figure 1.

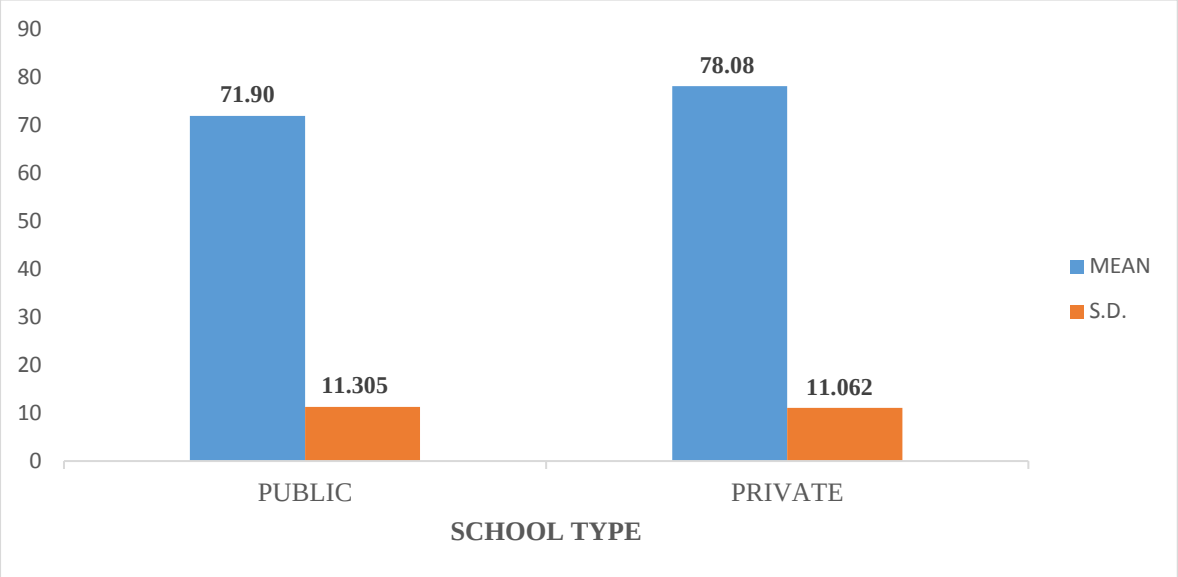

Figure 1: Difference in preparedness of students for conduct of SSCE in electronic mode

The results presented in Table 3 reveal a significant difference in the mean score of the two groups (t=6.426, df = 598, p < 0.05). Hence, the null hypothesis one (Ho_1) was rejected. This implies that there was a significant difference in the preparedness of students in public and private schools for conduct of SSCE in electronic mode in Niger State in favour of students in private schools.

Hypothesis 2: There is no significant difference in the attitude of students in public and private secondary schools towards conduct of SSCE in electronic mode.

To test this hypothesis, independent sample t-test was applied on the response mean scores of students in public and private secondary schools regarding their attitude towards conduct of SSCE in electronic mode in Niger State as presented in Table 4

Table 4: Independent Sample t-test Analysis on the Mean Scores of Administrators' Responses on their Attitude towards Conduct of SSCE in Electronic Mode

School Type	N	Mean	S.D	Df	t-value	p-value	Decision
Public	300	81.20	11.170	598	6.047*	0.002	Reject (Ho_2)
Private	300	86.69	9.884				

* = Significant at 0.05 level

The result presented in the table 4 shows that students in public school had a mean score of 81.20 with standard deviation of 11.170, while students in private schools had a mean score of 86.69 with standard deviation of 9.884. This is further illustrated in the figure 2.

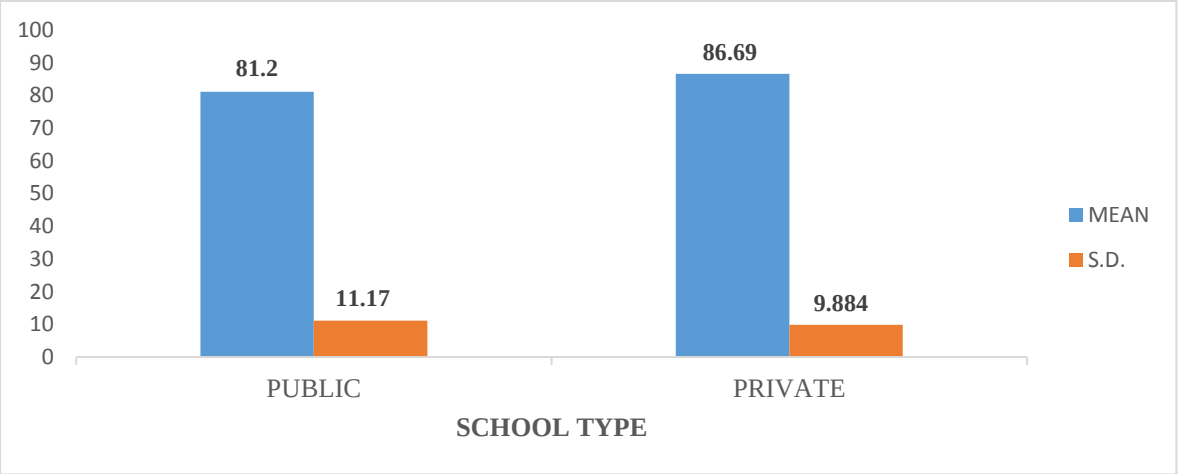

Figure 2: Difference in attitude of students towards conduct of SSCE in electronic mode

The results presented in Table 4 reveals a significant difference in the mean score of the two groups (t=6.047, df = 598, p < 0.05). Hence, the null hypothesis two (Ho_2) was rejected. This implies that there was a significant difference in the attitude of students in public and private schools towards the conduct of SSCE in electronic mode in Niger State in favour of students in private schools.

Comparison of students' mean scores responses on preparedness and attitude towards conduct of SSCE in electronic mode in Niger State is illustrated in the figure 3.

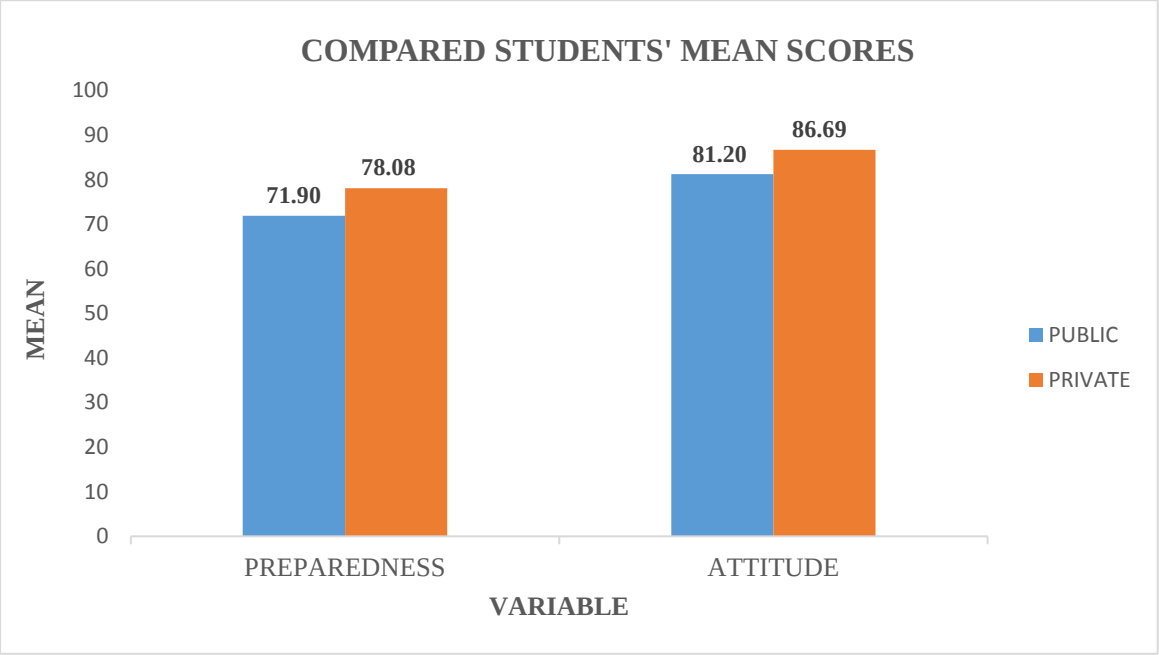

Figure 3: Compared mean scores of students' responses on preparedness and attitude

Discussion

Finding of this study on the preparedness and attitude of students towards conduct of SSCE in electronic mode in Niger State, Nigeria indicated that students are prepared for conduct of

SSCE in electronic mode in Niger State having rated themselves as possessing the basic computer knowledge and operations to see them through in electronic examinations. This finding is in line with the earlier findings of Joshua *et al*. (2014) and Ubulom and Wokocha (2017) who found that students are fully prepared and ready for electronic examination. This finding is contrary to popular opinions among the public and the press in Nigeria that students lack the necessary skills to face electronic mode of examination. The reasons why students are fully prepared for the conduct of SSCE in electronic mode in Niger State may be due to the fact that they are sufficiently exposed; perhaps through their use of sophisticated cell phones, to the fundamentals of practical computer appreciation and internet utility which are the basic skills required for writing electronic form of examination.

Hypothesis one (Ho_1) revealed that there is a significant difference in the preparedness of students in public and private schools for conduct of SSCE in electronic mode in Niger State in favour of students in private schools. This was perhaps due to the fact that, students in private schools have access to and are being taught with more and better ICT facilities such as computers, e-testing software/applications among others than their counterparts in public schools in Niger State.

Another finding of this study revealed that students have positive attitude towards conduct of SSCE in electronic mode in Niger State. This finding concurred with findings from previous researchers Bandele, *et al*. (2015) and Dammas (2016) who found that students exhibit positive attitudes towards electronic examination. The positive attitudes of students towards conduct of SSCE in electronic mode in Niger State were perhaps due to numerous advantages that electronic mode of examination has over the traditional paper and pencil mode of examination, which include: the immediate release of students' results, ease of use, mode of questions among others.

Hypothesis two (Ho_2) revealed that there is a significant difference in the attitude of students in public and private schools towards conduct of SSCE in electronic mode in Niger State a significant in favour of students in private schools.

Conclusion

In this study, effort has been made to ascertain the preparedness and attitude of secondary school students towards conduct of SSCE in electronic mode in Niger State, Nigeria. Based on the findings of the study, it was concluded that students have positive attitude and are prepared for conduct of SSCE in electronic mode in Niger State. However, a significant difference exists in favour of students in private schools. This is because students in private schools have access and are being taught with more and better ICT facilities than their counterparts in the public schools.

Recommendations

The following recommendations are proffered based on the findings of this study:

(i) Students should be encouraged and taught on how to make judicious use of their smart phones for more educative purpose rather than entertainment, as smart phones have been discovered to be a vital tool for edutainment. This will go a long way helping students maintain their preparedness for the conduct of SSCE in electronic mode in Nigeria.

(ii) Appropriate governments and non-governmental agencies should place more priority on making provision for adequate basic facilities in terms of human and materials needed for effective and efficient e-exams system in the public schools so that the level of preparedness and attitude in both school types are equally okay.

(iii) Advocacy should be mounted by Ministry of Education and other stakeholders in education to improve on the use of computers for teaching, learning as well as for examinations by those schools that can afford it.

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