



FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA  
SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION  
P.M.B 65, MINNA, NIGER STATE, NIGERIA

# 7<sup>th</sup> International Conference

Conference Proceedings

THEME  
CURRICULUM ISSUES  
IN  
**SCIENCE**  
AND TECHNOLOGY  
**EDUCATION**  
IN THE 21ST CENTURY



DATE:  
**1ST - 5TH**  
OCTOBER, 2019

VENUE:  
CPES COMPLEX, BOSSO CAMPUS,  
MINNA, NIGER STATE

*7th International Conference of School of Science and Technology Education (SSTE)*

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**ISBN: 979-978-52341-0-7**

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## **ACKNOWLEDGEMENTS**

Local Organizing Committee of the 7th International Conference of School of Science and Technology Education (SSTE), Federal University of Technology, Minna, appreciates the Management of the University for the Unalloyed Support given to the team which led to the success of this Conference. We also wish to express our profound gratitude for the assistance rendered by the University Management especially in disseminating information relating to this Conference using the University website, Campus News, and FUT Search FM.

Thank the Dean, School of Science and Technology Education (SSTE) for hosting this Conference despite the economic situation in the country. His encouragement, advice, and moral support gave the Local Organizing Committee the strength to complete this task and make sure the Conference is successful.

Sincerely thank the academic staff of the School and University Community for their essential roles played towards the success of the Conference. We thank the non-teaching staff for their roles which contributed to the success of this Conference.

Efforts of the Editorial Board are commendable for making sure that the Book of Proceedings was ready before the arrival of the participants. We appreciate the efforts of the Keynote presenter, Lead Paper presenter, and Workshop facilitator for attending this Conference despite their tight schedule.

We also commend the undergraduate and postgraduate students of the School for sparing their time for participating in all the events. We thank God Almighty for the strength given to the LOC members to discharge their enormous tasks.

## PREFACE

The 21st-century education is about giving students the skills they need to succeed in this new world and helping them develop the confidence to practice those skills. With so much information readily available to them, the 21st-century skills focus more on making sense of that information, sharing and using it in smart ways. There are several reasons for questioning how well the current school curriculum is equipping students for life and work in the 21st Century.

The 21st-century curriculum also suggests "abandonment of textbook-driven knowledge, teacher-centered mode of instruction, paper and pencil schooling". It means a new way of understanding the concept of "knowledge" and a new definition of the "educated person". Consequently, a new way of designing and delivering the curriculum is required. The twenty-first-century curriculum is: "interdisciplinary, project-based, and research-driven. It is connected to the community – local, state, national and global.

Hence, the theme of this conference is apt and provides opportunities where experts brainstorm so that international communities can benefit from one another and also respond to curriculum issues in science and technology education in the 21st century. Curriculum issues are capable of enhancing quality teaching and learning process. It is worthy to note that, the implementation of the 21st-century curriculum would have a greater influence on the quality of manpower injected into the labour market which may determine the economic growth of any nation.

The theme and sub-themes of this conference, "Curriculum Issues in Science and Technology Education in the 21st Century" are based on the prevailing situation of poor quality education in developing nations. I am sure this conference has provided an avenue for researchers and educators to share their ideas on the 21st-century curriculum issues that can enhance quality education and self-reliance in underdeveloped and developing nations across the world. I hope the theme and sub-themes meet the needs of the stakeholders in education.

The sub-themes are:

- Curriculum Issues and Security Challenges
- Curriculum Issues and Labour Market Demands
- Curriculum Issues and Advancement in Science Education
- Curriculum Issues and Innovations in Technology Education
- Curriculum Issues and Industrial Demands
- Curriculum Issues and Health Demands
- Curriculum Issues in Language and Information Communication and Technology
- Curriculum Issues and Innovations in Special Education
- Curriculum Issues in Agricultural Science and Food Security
- Curriculum Issues in Entrepreneurial Education

The Local Organizing Committee is thankful to the participants of this year's conference for their contributions.

God bless you all.

**Prof. Gambari, AmosaIsiaka**  
**LOC Chairman/Editor**

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## ASSESSMENT OF STUDENTS' INTEREST IN CURRICULUM INNOVATION IN SECONDARY SCHOOLS IN MINNA METROPOLIS, NIGER STATE

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### **Abstract**

*This study assesses students' interest in curriculum innovation in secondary schools in Minna Metropolis, Niger State. Four research questions guided the study. A survey research design was adopted for the study. Sample of 370 teachers and students from three secondary schools in Minna metropolis Niger state, Nigeria were randomly selected, using simple random sampling technique. Questionnaire titled Secondary School Teachers and Students Curriculum Implementation Questionnaire (SSTSCIQ). The instrument was validated by two curriculum experts from Ibrahim Badamasi Babangida University Lapai, Niger state. Using Crombach Alpha Reliability Coefficient of the following was obtained from the instrument 0.76, 0.84, 0.79 and 0.79. Research questions was answered using simple percentage was used to analyzed research questions. The result shows that 62.2% of the respondent agree with the statement while 37.8% disagree with the statement; in item two, the result shows that 38.4% agreed with the statement while 61.6% disagree with the statement; in item three, the result shows 46.25 agreed with the statement while 53.85 disagree with the statement. Based on the findings, the stakeholder as matter of urgent should organize workshop on way to incorporate teachers and students in curriculum planning. Curriculum changes is needed periodically in order to have positive impact of students' performance and to acquit them of new knowledge Recommendations; Since curriculum is dealing with students' attitude as parts of its element, their interest must be sought through devices such as questionnaire, getting in touch with students representatives such as students union, parents or academic staff union. Also there is need to pilot study of any curriculum innovation to be fully implemented.*

**Key words:** Curriculum, Innovation, Performance, Assessment, Interest

### **Introduction**

Curriculum is often one of the main concern in the educational field. What kind of curricula should we offer to learners? Educators and teachers are concerned about what choices are to make about teaching content and methods. For the parents, they would like to know what children are going to learn. Learners are also concerned about what kinds of content they are going to have in the class. Curriculum seems to be considered greatly as what teachers are going to teach and in other words, what learners are going to learned (Atherton, 2010).

Adebayo (2016) opined curriculum change and innovation as effort made by education authorities to change and adopt their aims and objectives of teaching and learning according to the value, culture, philosophies as well as the resources at their disposal. Students, teaching and learning in secondary schools are all objects and subject of the educational system in Nigeria. Therefore, there is a need to understand any change that may affects the subjects and the need to observe the available objects on ground by the regulating body for the betterment of the whole system. In other words, teachers, students, educational administrators and

educational and scientific firms are all stakeholders in education and therefore need to be consulted, involved and informed for any changes and or innovation to take place (Chen, 2007). This is so because education is referred to an act or process of developing and cultivating (whether physically, mentally or morally) ones mental activities or senses; the expansion, strengthening and discipline of one' mind, the forming and regulation of principles and character in order prepare and fit for any culling or business by systematic instructions (Hervey, 2004). The results of these are determined by the knowledge, skills or discipline of character acquired.

The concept of curriculum in education is always changing to suit the need of society. Curriculum can be extended to cover the part of the school curriculum which is not formally stated but which has an effect on the learner's social, intellectual and emotional development, this refers to what is commonly called the hidden curriculum (Hervey, 2004). Education managers should understand the process of curriculum innovation and implementation in order to provide effective professional guidance to teachers under their charge. Gross and Godwin (2005) defined curriculum innovations as the effect made by education authorities to change and adapt their aims and objectives of teaching and learning according to the values, cultures, philosophies as well as the resources at their disposals.

Hervey (2004) identified the following are some reasons for curriculum innovation; the need to provide more relevant education. This can be necessitated by the requirement for various types of schools, such as public, private, community and churches schools which serve stakeholders who have different demands. The need to provide life-long education. The need to provide integrated learning. The need for improved teaching and learning such as introduction of continuous assessment, a learners centered perspective, teachers' resource centers, team teaching and new teaching approaches. Community demand for cost effectiveness in education, for instance, accountability, teacher competence and school calendar and time table.

Gross and Godwin (2005) states that thinking more expensively about stakeholder is easier. Most educators like their ivory tower and many faculty members would rebel at notion of administrators interfering with what goes on in the classroom. Stakeholders is an individuals or entities who stand to gain or lose from the success or failure of a system or an organization, in education they involves students, parents education administrators, employers and community

### **Aim and Objectives of the Study**

The study aimed at investigating students' interest in curriculum innovation in secondary schools in Minna Metropolis, Niger State. Specifically, the study was carried out to;

1. Determine the level of students awareness and involvement about curriculum innovation, planning and implementation
2. Determine the suitability of the curriculum been innovated
3. Find out which direction does innovated curriculum affect the students' performance
4. Determine the position of students as stakeholders in the curriculum planning, innovations and implementation.

### Research Questions

The following research questions were raised to guide the study:

1. Is there a need for the student awareness and involvement in curriculum innovation, planning and implementation?
2. Are the students involved in the planning process of the previous curriculum innovation?
3. Have those changes made positive impact on the students' performance?
4. Is there any improvement compare to old curriculum?

**Research Question One:** Is there a need for the student awareness and involvement in curriculum innovation, planning and implementation?

**Table 1: Percentage of Students Awareness, Innovation, Planning and Implementation of Curriculum**

S/N	STATEMENT	NUMBER OF YES	% OF YES	NUMBER OF NO	% OF NO
1	The is need for students to be aware of any curriculum innovation of secondary school level prior to its implementation	230	62.2	140	37.8
2	Are students fully informed prior to any curriculum innovation secondary school level prior to its implementation	142	38.4	228	61.6
3	Does secondary school education board formally inform the students in case of curriculum innovation prior to its implementation	171	46.2	199	53.8

From table one, it quest to determine whether the students are aware of curriculum innovations that is taking place at secondary school level. In item one, the result shows that 62.2% of the respondent agree with the statement while 37.8% disagree with the statement; in item two, the result shows that 38.4% agreed with the statement while 61.6% disagree with the statement; in item three, the result shows 46.25 agreed with the statement while 53.85 disagree with the statement.

**Research Question Two:** Are the students involved in the planning process of the previous curriculum innovation?

**Table 2: Percentage of Students involving in the Planning of Previous Curriculum Innovation**

S/N	STATEMENT	NUMBER OF YES	% OF YES	NUMBER OF NO	% OF NO
1	Is there any need to involve students in the planning process of curriculum	248	67.0	122	33.0

2	innovation at secondary school level The students don't have the interest to be aware of curriculum innovations at secondary school level prior to its implementation	147	39.7	223	60.3
3	Is Secondary school academic staff union enough to fairly represent both the students and its member in any curriculum innovation stakeholder's debate/meeting?	139	37.6	231	62.4

From table two, it attempt to answer the research questions that seek to determine whether the students are involved in planning process of curriculum innovations. In item one, the result shows that 67.0% of the respondent agree with the statement while 33.0% disagree with the statement; in item two, the result shows that 39.7% agreed with the statement while 60.3% disagree with the statement; and in item three, the result shows 37.6% agreed with the statement while 62.4% disagree with the statement.

**Research Question Three:** Have those changes made positive impact curriculum on the students' performance?

**Table 3: Percentage of Positive Impact of Curriculum on the Students Performance**

S/N	STATEMENT	NUMBER OF YES	% OF YES	NUMBER OF NO	% OF NO
1	Does the changes make possible impact on students' performances?	263	71.1	107	28.9
2	Students are fully aware about the curriculum innovation at Secondary school level prior to its implementation.	98	26.5	271	73.2
3	Does the present secondary school curriculum richer than the old curriculum	274	74.1	96	25.9

From table three, the responses attempt to answer the research questions that seek to determine whether those changes made had positive impact on students' performance. In item one, the result shows that 71.1% of the respondent agree with the statement while 28.9% disagree with the statement; in item two, the result shows that 26.5% agreed with the statement while 73.2% disagree with the statement; and in item three, the result shows 74.1% agreed with the statement while 25.9% disagree with the statement.

**Research Question Four:** Is there any improvement in new curriculum compare to old curriculum?

**Table 4: Percentage of New Curriculum Compare to Old Curriculum**

S/N	STATEMENT	NUMBER OF YES	% OF YES	NUMBER OF NO	% OF NO
1	Do Nigeria ministry of education debated for or against any innovation in education before fully it implementation.	133	35.9	237	64.1

2	Does the academic staff union of secondary school adequately inform students on any curriculum innovation at secondary school level prior to its implementation	139	37.6	231	62.4
3	Do the ministry wait to see the outcome of an innovated programme before engaging in to re-innovation of just innovated programme especially in Nigerian Secondary schools?	162	43.8	208	56.2

From table four, the responses attempt to answer the research questions that seek to determine whether there is improvement in the innovated curriculum compare to the old curriculum and the state of implementation. In item one, the result shows that 35.9% of the respondent agree with the statement while 64.1% disagree with the statement; in item two, the result shows that 37.6% agreed with the statement while 62.4% disagree with the statement; and in item three, the result shows 43.8 % agreed with the statement while 56.2% disagree with the statement.

### Methodology

Descriptive survey was employed to elicit information from teachers and students on curriculum implementation in Minna metropolis Niger state Nigeria. The population of the study comprises 29,564 teachers and students of secondary school. The sample schools have an estimated population of (308)teachers and students (6205). 300 and 70 teachers and students were randomly selected from two secondary schools using random sampling technique. One set of questionnaire was used for data collection, Secondary School Teachers and Students Curriculum Implementation Questionnaire (SSTSCIQ). The instrument contains two sections. Section A is the demographic data of the respondent. Section B contains the items on Curriculum Implementation. The instrument was validated by two curriculum experts. To determine the reliability of the instrument, 203 questionnaires was administered on pilot sample, Crombach Alpha was used to obtained reliability co-efficient of awareness and innovation (0.76), planning process (0.81), students' performance (0.72)old and new curriculum (0.85) and on curriculum implementation. The instrument was administered to 203teachers and students. All 203 copies questionnaire were duly collected and analyzed. The data were analyzed using Yes or No. Simple percentages was used to analyzed all the research questions.

### Discussion of Findings

From table one, the table provides answer to the research questions on whether student aware and involve about curriculum innovation, planning and implementation in secondary schools. In item one, the result shows that 62.2% of the respondent agree with the statement while 37.8% disagree with the statement; in item two, the result shows that 38.4% agreed with the statement while 61.6% disagree with the statement; in item three, the result shows 46.25 agreed with the statement while 53.85 disagree with the statement.

Based on the above findings, the result reveals that there is high demand for the students to be aware of curriculum innovations, planning and implementation that is taking place at secondary school level prior to its implementation. It is also revealed that the students are not fully

informed on any implantation, also revealed that students are not fully informed on any curriculum innovation at secondary school level prior to its implementation and also revealed that secondary education board do not formally inform the students in curriculum innovation prior to its implementation. The results opposed to the findings of Gross and Godwin (2005) who stated that stakeholders is an individuals or entities who stand to gain or lose from the success or failure of a system or an organization, in education they involves students, parents education administrators, employers and community.

From table two, the table provides answer to the research questions on whether students involved in the planning process of the previous curriculum innovation. It attempt to answer the research questions that seek to determine whether the students are involved in planning process of curriculum innovations. In item one, the result shows that 67.0% of the respondent agree with the statement while 33.0% disagree with the statement; in item two, the result shows that 39.7% agreed with the statement while 60.3% disagree with the statement; and in item three, the result shows 37.6% agreed with the statement while 62.4% disagree with the statement.

Based on the above findings, the results revealed that there is high demand for students to be involved in the planning process of curriculum innovation at secondary school level. It also revealed that, the students have right and interest to be aware about curriculum change at secondary school level prior to its implementation and lastly the result also revealed that academic staff union of secondary schools alone is not fairly enough to represent both the students and its member's interest in any curriculum innovation. The result therefore, support the findings of Gross and Godwin(2005)which show the need to recognized and incorporate individual such as students, parents or organization within and outside of academic institution. From table three, the table provides answer to the research questions that seek to determine whether those changes made had positive impact on students' performance. In item one, the result shows that 71.1% of the respondent agree with the statement while 28.9% disagree with the statement; in item two, the result shows that 26.5% agreed with the statement while 73.2% disagree with the statement; and in item three, the result shows 74.1% agreed with the statement while 25.9% disagree with the statement. Based on the finding above, it was observed that the change made in the secondary school curriculum has made positive impact on the students' performance though the students are not fully aware about the innovations prior to its implementation. Hence, this study has proven that the present secondary school syllabus contains more items which reflects Nigeria current need. This is in agreement with Adebayo (2016) statement about curriculum which opined curriculum change and innovation as effort made by education authorities to change and adopt their aims and objectives of teaching and learning according to the value, culture, philosophies as well as the resources at their disposal.

From table four, the table provides answer to the research questions that seek to determine whether there is improvement in the innovated curriculum compare to the old curriculum and the state of implementation. In item one, the result shows that 35.9% of the respondent agree with the statement while 64.1% disagree with the statement; in item two, the result shows that 37.6% agreed with the statement while 62.4% disagree with the statement; and in item three, the result shows 43.8 % agreed with the statement while 56.2% disagree with the statement. Based on the above findings, the result revealed that the Nigeria Ministry of Education does not debate for or against any innovation in education before its full implementation, the academic



staff of secondary schools does not adequately inform the students on any curriculum innovation at secondary school level prior to its implementation. Also the study revealed that ministry of education do not wait to see the outcome of an innovated curriculum programme before engaging in re-innovation.

### **Conclusion**

The students are not aware about any curriculum innovation at secondary school level prior to its implementation. Students are not involved in planning process of curriculum innovation at secondary school level. The students have the right and interest to be aware of any curriculum innovation at secondary school level prior to its implementation. Nigeria ministry of education does not debate for or against any curriculum innovation before its full implementation.

### **Recommendations**

1. Since curriculum is dealing with students attitude as parts of its element, their interest must be sought through devices such as questionnaire, getting in touch with students representatives such as students union, parents or academic staff union
2. There is need to pilot study of any curriculum innovation to be fully implemented
3. Nigeria ministry of education should organize conference to call for debate for or against curriculum innovation and expert analysis before any attempt to change of add the content of curriculum.
4. Teachers should be able represent students interest when the need arise without bias in the curriculum innovation process

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