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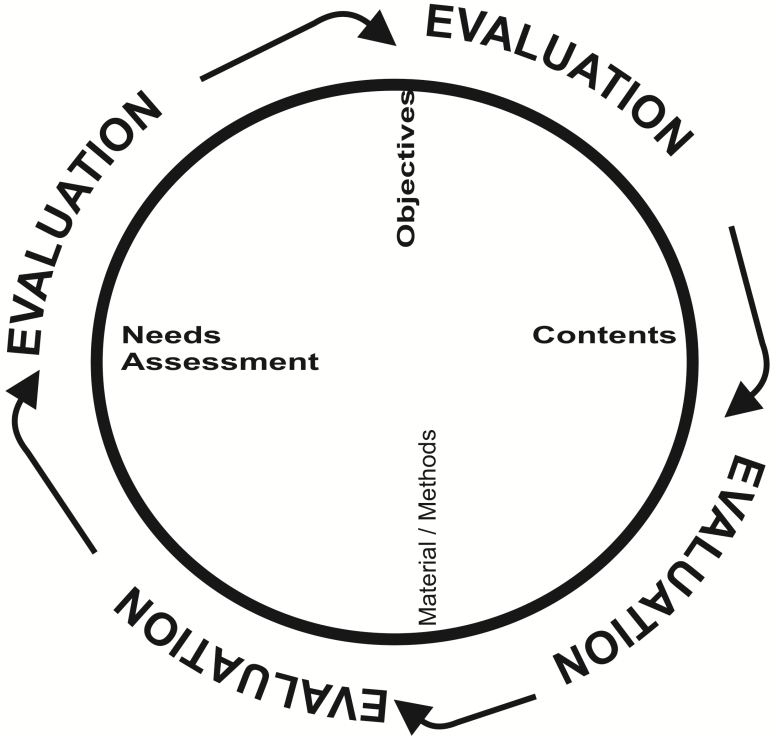

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This Journal is a forum for the dissemination of research findings and reports on curriculum development, implementation, innovation, diversification and renewal. In developing a curriculum, it is often necessary to use the experiences of the past and present demands as well as practices within and outside the system to design a desirable educational programme. Problems and issues in comparative education are relevant in shaping the curriculum. In the same vein, issues relating to the constant training and re-training of teachers are very relevant.

Articles which present the results of empirical educational research, discuss theoretical framework for innovation in education or advocate new ideas are welcome. The Journal accepts articles from scholars in all fields related to curriculum study from all parts of the world. However, particular interest is shown to papers in the following areas:

* Curriculum content, learning experience, organization and evaluation.
* Teacher preparation and re-orientation at all levels of education.
* Teaching methods and teacher effectiveness.
* Educational foundations and comparative education.
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* Quality assurance, Information Communication and Technology.
* Entrepreneurship education.
* Gender issues and inclusive education.
* Teacher preparation and climate change curriculum.
* Assessment of curriculum and Sustainable Development Goals.
* Innovations for effective education delivery.

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Articles

MATHEMATICS CURRICULUM OBJECTIVE ACHIEVEMENT AND CONTENT COVERAGE IN JUNIOR SECONARY SCHOOLS IN ABA EDUCATION ZONE OF ABIA STATE

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Abstract
The study examined Mathematics curriculum objectives achievement and content coverage in junior secondary school in Aba Education Zone of Abia State. The study adopted a survey research design. Two research questions and two hypotheses were formulated for the study. The population comprised all public junior secondary school Mathematics teachers in Aba education zone of Abia State. There are 112 Mathematics teachers in junior secondary schools in Aba Education Zone of Abia State. All 112 Mathematics teachers were sampled. The instrument for data collection was a questionnaire titled "Mathematics Curriculum Objective Achievement and Content Coverage Questionnaire (MCOACCQ)" developed by the researcher. The instrument was validated by three experts in Mathematics Education, Curriculum Studies and Measurement and Evaluation respectively. The reliability of 0.88 was obtained using cronbach alpha Method. Mean and standard deviation were used to answer the research questions, while z-test was used to test the hypotheses at 0.05 level of significance. The result showed that the objectives of Mathematics curriculum are achieved at a high extent in urban and rural junior secondary schools in Aba Education Zone of Abia State. The finding further revealed that both urban and rural Mathematics teachers cover the contents of Mathematics curriculum to a high extent. There was no significant difference between the mean rating of urban and rural Mathematics teachers on the extent of achievement of objectives and content coverage of Mathematics curriculum in Aba Education Zone of Abia State. The study recommended among others that mathematics teachers in urban and rural junior secondary schools should be trained and retrained on the implementation of innovative Mathematics content.

Keywords; Mathematics, curriculum, junior secondary education, objectives and content

Introduction

Mathematics is a subject that prepares a child for logical thinking and

critical reasoning as well as to function effectively in day-to-day activities. Mathematics is a science that is concerned with numbers and their properties, relations and operations and with shapes in space and their structure and measurement. It is a subject of numbers, shapes, data, measurements and also logical activities. It is one of the most important subjects and has a huge scope in every field of our life. Mathematics embraces the areas of arithmetic, geometry, algebra, calculus, probability, statistics and many other special areas of research.

Mathematics is a subject designed to equip individuals and learners with the basic mathematical knowledge and skills for proper functioning in the society. According to Onuoha-Chidiebere (2016), Mathematics is a broad and unique field of study that aims at developing the mathematical potentials and capabilities of individuals to function effectively in the society and the world at large. It is a multi-dimensional, universal and fundamental to the upliftment and development of an individual and has much to contribute in all human endeavour. The multi-dimensional value of Mathematics made it peculiar, unique and versatile in nature.

Mathematics is "the mirror to approach the world and a critical way to understand employ and engage with the world" (Uka, 2017:55). This simply means that the world at large requires mathematical knowledge and skills to advance in its economic, social, political, scientific and technological aspects of life. In fact, it is an academic field that one cannot afford to neglect. This is why the Federal Republic of Nigeria, National Policy on Education (FRN, 2013) stated that Mathematics is one of the core and compulsory subjects that a child must offer in primary, junior and senior secondary education levels. It is a dynamic field of knowledge that has much to offer to science, technology, arts and everyday living (Onuoha-Chidiebere, 2019).

The objectives of Mathematics curriculum according to the Nigerian Educational Research and Development Council (NERD, 2012) is focused on giving learners the opportunity to;

- acquire mathematical literacy necessary to function in an information age.
- cultivate the understanding and application of Mathematics skills and concepts necessary to thrive in the ever changing technological world.
- develop the essential elements of problem-solving, communication, reasoning and connection with the study of Mathematics.
- take advantage of the numerous career opportunities provided by Mathematics.
- become prepared for further studies in Mathematics and other related

fields.

These objectives of Mathematics curriculum are relevant to the goals of education in Nigeria according to FRN (2013:14) which include;

- development of the individual into a morally sound patriotic and effective citizen;
- total integration of the individual into the immediate community, the Nigerian society and the world;
- provision of equal access to qualitative educational opportunities for all citizens at all levels of education within and outside the formal school system;
- inculcation of national consciousness, values and national unity; and
- development of appropriate skills, mental, physical and social abilities and competencies to empower the individual to live in and contribute positively to the society.

Mathematics can be seen as one of the vital instrument for attaining these national goals. Proper implementation of Mathematics curriculum in Nigerian schools will go a long way in producing functional and productive citizens capable of utilizing mathematical skills and knowledge in every spheres of life.

Curriculum is the aggregate of all that is rendered by the school in order to bring about an all round development of the learner (Oteh & Akuma, 2010). It is the subject matter as well as experiences planned and organized under the auspices of the educational institutions to engender envisaged changes in the behavior of the learner. It can be regarded as a road map for the education of the learner. Curriculum is a document, plan or blue print for instruction which is used for teaching and learning to bring about positive and desired behavioural changes in a learner. At every levels of educational system, curriculum becomes the guideline for instruction. Be it primary, junior and senior secondary and tertiary education. This study examined the junior secondary school Mathematics curriculum.

Junior secondary education is the education that a child receives immediately after primary education. It is the bedrock upon which the senior secondary education is built. The objectives of junior secondary education according to FRN (2013:24) are to;

- provide the child with diverse basic knowledge and skills for entrepreneurship and educational advancement;
- develop patriotic young people equipped to contribute to social development and the performance of their civic responsibilities.
- Inculcate values and raise morally upright individuals capable of

independent thinking and who appreciate the dignity of labour; and

- Inspire national consciousness and harmonious co-existence irrespective of differences in environment, religion, ethnic and socio-economic background.

Integrating these objectives in secondary schools will help in addressing the issue of Mathematics curriculum objectives achievement and content coverage. Objectives refer to the specific, overt changes in student behaviour that are expected to result from participation in a unit of learning activities. Educational objectives or learning outcomes are statements that clearly describe what the learner will know or be able to do as a result of having attended an educational activity. It is the intended outcome of classroom instruction. Educational objectives must be stated in observable and measurable terms. The objectives are usually stated using action verbs such as describe, identify, state, mention, list, recite, draw, match and so on. Educational objectives have been classified into three domains namely; cognitive (intellectual), affective (feeling, emotions and behavior) and psychomotor (manual and physical skills).

The functions of clearly stated objectives according to Oteh and Akuma (2010:89) include;

- **Defining the Directions of Educational Development:** Objectives are statements of expected outcomes which indicates what the learners are expected to accomplish. They indicate the direction to which educational development is proceeding.
- **Providing a Basis for the Selection of Learning Experiences:** Objectives serve as a guide to the curriculum workers in determining the subject matter and learning experiences that are best suited to attaining the set objectives. It equally serve as a guide in the selection of instructional materials and methods.
- **Forming a Major Basis for Evaluation:** Objectives provide a benchmark on the basis of which the performance of learners can be assessed. It guides in assessing learners outcomes and providing feedback to them.
- **Clarifying Learning Outcomes:** Objectives help the curriculum implementers at the various domains in clarifying knowledge, values, skills and competencies to be developed at cognitive, affective and psychomotor domains. This helps to ensure that all the dimensions of human development are taken care of.
- **Identifying Learnings that are Deemed Worthwhile:** Objectives help teachers in identifying the knowledge, skills, values and attitudes that are

deemed worthwhile. They enable to make selection out of vast stock of expected outcomes.

In selection of objectives, several factors should be taken into consideration. Some of these factors identified by Ughamadu (2006) are;

- **Relevance to the Culture of the People:** In formulating objectives, the culture of the people should be reflected. This is because the school is established in a social setting and it is very necessary for the school to teach the kind of behaviour, feeling and acting that have value to the society and assist learners to become effective individuals in the society. The objectives should be recognized as desirable to the cultural setting in which the school belongs.
- **Present Status of the Learner:** The present status of the learner is very vital in formulating objectives. There is need to identify the learner's previous knowledge and link to the new knowledge. This is equally referred to the entry behaviour of the learner. What the learner already learnt and linked to the new knowledge to be taught. Objectives to be formulated should be appropriate to the next stage of development of the learner.
- **Advances in Knowledge:** The increase in the body of knowledge is tremendous. There are a lot of knowledge explosion and as a matter of fact, knowledge is dynamic not static. This simply implies that objectives to be formulated should enable learners abreast the current explosion of knowledge in different areas of life. learners should continually master the innovative areas in their studies.
- **Relevance to the School's Philosophy of Education:** The philosophy of education is the cornerstone upon which the curriculum is built. It is a known fact that the educational objectives of any nation or society is based on the philosophy of education. The objectives to be formulated for any curriculum should reflect the guidelines of educational philosophy.
- **Consistency with the Theories of Learning:** In formulating educational objectives, certain psychological theories of learning should be considered. Objectives consistent with the theories of learning are usually taken once formulate.
- **Comprehensiveness:** Educational objectives formulated should contain and cover fully all the behaviours are content intended. The objectives formulated should capture all the three domains – cognitive, affective and psychomotor domains in a balanced manner.

- **Feasibility:** This is to ensure that the educational objectives formulated are practicable in a prevailing situation. Adequate consideration should be given to feasibility of educational objectives formulated. It is vital to note that lack of basic materials, adequate space and time may frequently make well-articulated and formulated educational objectives non-feasible.
- **Attainability:** This means keeping the educational objectives formulated within the realm of possibility of learner based on his or her readiness, capability, interest and background. The educational objectives formulated should be within the reach of the learners.

Content simply refer to subject matter or what is taught and learnt in the school. It spells out the details of the selected topics for learning. It may be referred to as the knowledge, concepts, principles, generalizations, theories, attitudes, values, skills and processes to which learners are exposed (Otch & Akuma, 2010). The content are arranged to bring about changes in the behavior of the learner. Content may be formal or informal. Formal content is made up of subject matter as contained in textbooks and other documents that may be referred to. Informal content is not necessarily documented but described those vital learning outcomes from teachers' experiences or contemporary events that are observable and learned informally.

Mathematics curriculum contents are well structured based on thematic approach. This approach was adopted in selecting the content and learning experiences in this curriculum. The thematic approach to curriculum organization is useful for accommodating emerging issues without necessarily disrupting the curriculum structure. The themes and sub-theme represented in table are;

	Theme	Sub-theme
1.	Number and Numeration	• Whole numbers • Fraction
2.	Basic operations	• Basic operation • Derived function • Derived operations
3.	Algebraic Processes	• Algebraic operations • Open sentences
4.	Measurement and Geometry	• Primary Measures • Secondary measures • Shapes
5.	Everyday Statistics	• Data collection and presentation • Chance and events

Source: Junior Secondary Education Curriculum Mathematics JSS1-3(NERDC, 2012)

In this structure of Mathematics curriculum, emphasis are placed on the affective and quantitative reasoning. This is to boost learner's cognitive and psychomotor capabilities. It provides maximal aids for the teacher by prescribing topics, objectives of expected learning, outcomes, students and teachers' activities and evaluation guides.

Many studies have been carried out on the evaluation of Mathematics education curriculum such as the objectives, contents, methods, instructional materials and evaluation techniques. Zalmon, Daso and Uranta (2020) conducted a study on the evaluation of the Nigerian senior secondary education Mathematics curriculum implementation in Obio Akpor Local Government Area of Rivers State and found that the extent of the achievement of senior secondary education Mathematics curriculum objective is high. Abdul (2014) worked on the assessment of the implementation of Mathematics curriculum in senior secondary schools in Kano State and found that Mathematics curriculum contents are not fully implemented in senior secondary schools in Kano State. In another study carried out by Onuoha-Chidiebere (2019) on the assessment of Mathematics curriculum implementation in private secondary schools in Umuahia Education zone of Abia State, the study reported that private schools Mathematics teachers do not utilize all the prescribed instructional materials for implementing Mathematics curriculum in Umuahia Education zones. Daso, Zalmon and Williams-West (2022) conducted a research on the evaluation of junior secondary education Mathematics curriculum implementation using CTPP model and found that the achievement of Mathematics curriculum objectives is high and that the content of Mathematics curriculum were covered to a high extent.

Thus the problem of this study is to investigate Mathematics curriculum objectives achievement and content coverage in junior secondary schools in Aba Education zone of Abia State. The purpose of this study is to investigate Mathematics curriculum objectives achievement and content coverage in junior secondary schools in Aba Education Zone of Abia State. Specifically, the study intends to;

- ascertain the extent to which the objectives of Mathematics curriculum in junior secondary schools in Aba Education Zone of Abia State are achieved by urban and rural Mathematics teachers.
- determine the extent to which the contents of Mathematics curriculum in junior secondary schools in Aba Education Zone of Abia State are

covered by urban and rural Mathematics teachers.

Research Questions

The following research questions guided the study;

1. To what extent are the objectives of Mathematics curriculum in junior secondary schools in Aba Education zone of Abia State achieved by urban and rural Mathematics teachers?
2. To what extent are the contents of Mathematics curriculum in junior secondary school in Aba Education Zone of Abia State covered by urban and rural Mathematics teachers.

Hypotheses

Two hypotheses are formulated and tested at 0.05 level of significance.

Ho1: There is no significant difference between the mean rating of urban and rural Mathematics teachers on the achievement of Mathematics curriculum objectives of junior secondary schools in Aba Education Zone of Abia State.

Ho2: There is no significant difference between the mean rating of urban and rural Mathematics teachers on the coverage of Mathematics curriculum contents of junior secondary schools in Aba Education Zone of Abia State.

Method

The study adopted a survey research design. The population of the study comprised all public junior secondary school Mathematics teachers in Aba Education Zone of Abia State. There are 112 Mathematics teachers in urban and rural junior secondary schools in Aba Education Zone. All the 112 Mathematics teachers were sampled. The instrument for data collection was a questionnaire titled "Mathematics Curriculum Objectives Achievement and Content Coverage Questionnaire (MCOACQ)" developed by the researcher. The instrument was validated by three experts in Mathematics Education, Curriculum Studies and Measurement and Evaluation respectively. Reliability index of 0.88 was established using Cronbach Alpha Method. The questionnaire has two sections A and B. Section A was used to generate information on the bio-data of Mathematics teachers and section B was organized in two clusters. Cluster A sought information on the Mathematics curriculum objectives achievement with 10 items while cluster B was used to elicit information on Mathematics curriculum content coverage with 39 items. The questionnaire was structured along four point Likert scale of Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE) which weighed 4, 3, 2, and 1 points

respectively. Mean and standard deviation were used to answer the research questions. Decision on mean score was made using real limit of numbers based on various levels of measurement Very High Extent (VHE) (4) – 3.50-4.00; High Extent (HE) (3) – 2.50-3.49; Low Extent (LE) (2) – 1.50-2.49; and Very Low Extent (VLE) (1) – 0.50-1.49. An independent z-test was employed to test the hypotheses at 0.05 level of significance.

Research Question one: To what extent are the objectives of Mathematics curriculum in junior secondary schools in Aba Education zone of Abia State achieved by urban and rural Mathematics teachers?

Table 1: Responses of Mathematics Teachers on the Extent of achieving Mathematics Curriculum Objectives.

S/N	Achievement of Objectives of Mathematics Curriculum	Urban Mathematics Teacher N = 71			Rural Mathematics Teachers N = 41			Overall (N=112)	
		$\bar{X}$	SD	Dec	$\bar{X}$	SD	Dec	$\bar{X}$	SD
1.	Acquire mathematical literacy necessary to function in an information age	3.08	0.94	HE	3.00	0.91	HE	3.04	0.95
2.	Cultivate the understanding and application of Mathematics skills and concepts necessary to thrive in the ever changing technological world	2.79	0.86	HE	2.60	0.89	HE	2.70	0.87
3.	Develop and display the essential elements of problem solving, communication, reasoning and connection within the study of Mathematics	2.86	1.08	HE	2.83	0.99	HE	2.85	1.04
4.	Take advantage of numerous career opportunities provided by Mathematics	3.21	0.85	HE	3.18	0.73	HE	3.20	0.79
5.	Become prepared for further studies in Mathematics and other related fields	2.99	0.83	HE	2.86	0.82	HE	2.93	0.83
6.	Develop and practice logical thinking in Mathematics lesson	2.78	1.02	HE	2.70	0.77	HE	2.74	0.90
7.	Develop and practice abstract thinking when needed in the study of Mathematics	2.59	0.98	HE	2.61	0.88	HE	2.60	0.93

8.	Apply Mathematics skills to meet the societal needs	3.12	0.66	HE	3.01	0.83	HE	3.07	0.75
9.	Display the skills and knowledge in basic computations in real numbers and symbols	3.03	0.68	HE	3.11	0.74	HE	3.07	0.71
10.	Apply initiative, deductive and analytical approach to study geometry figures	2.78	0.91	HE	2.94	0.71	HE	2.86	0.81
	Cluster mean	**2.92**	**0.88**		**2.89**	**0.90**		**2.91**	**0.86**

Result in table 1 reveals the mean and standard deviation of responses of urban and rural Mathematics teachers on the extent of achievements of the objectives of Mathematics curriculum in junior secondary schools in Aba Education Zone of Abia State. The result shows that Mathematics teachers in both urban and rural junior secondary schools in Aba Education Zone of Abia State achieved the objectives of Mathematics curriculum to a high extent. This is because their mean rating are within the range of 2.50-3.49 set as criterion on real unit numbers. This indicates that the objectives of Mathematics curriculum are achieved at a high extent in urban and rural senior secondary schools in Aba Education Zone of Abia State.

Research Question Two

To what extent are the content of Mathematics curriculum in junior secondary school in Aba Education Zone of Abia State covered by Urban and Rural Mathematics teachers?

Table 2: Mean and Standard Deviation on the Responses of Mathematics Teachers on the Extent of Mathematics Curriculum Content Coverage

S/N	Achievement of Objectives of Mathematics Curriculum	Urban Mathematics Teacher N = 71			Rural Mathematics Teachers N = 41			Overall (N=112)	
		$\bar{X}$	SD	Dec	$\bar{X}$	SD	Dec	$\bar{X}$	SD
A.	**Numbers and Numerals**								
1.	Whole numbers	2.82	0.78	HE	2.74	0.84	HE	2.78	0.81
2.	Lowest Common Multiple (LCM)	3.16	0.63	HE	3.07	0.59	HE	3.12	0.61
3.	Highest Common Factor (HCF)	2.93	0.81	HE	2.88	0.78	HE	2.91	0.80
4.	Counting in base 2	2.98	0.74	HE	2.89	0.68	HE	2.94	0.71
5.	Conversion of base 10 numerals to binary numbers	2.82	0.85	HE	2.95	0.77	HE	2.89	0.81

6.	Fractions	3.22	0.68	HE	3.30	0.61	HE	3.26	0.65
7.	Rational and Non-rational numbers	2.54	0.95	HE	2.51	0.88	HE	2.53	0.92
	Cluster mean	**2.92**	**0.78**		**2.91**	**0.74**		**2.92**	**0.76**
B	**Basic Operations**								
8.	Addition and Subtractions	3.33	0.68	HE	3.08	0.59	HE	3.21	0.64
9.	Addition and Subtraction of Fractions	3.08	0.64	HE	3.03	0.72	HE	3.06	0.68
10.	Multiplication and Division of Fractions	3.28	0.61	HE	3.20	0.75	HE	3.24	0.68
11.	Estimation	2.97	0.75	HE	2.90	0.83	HE	2.94	0.79
12.	Approximation	2.88	0.89	HE	2.94	0.65	HE	2.91	0.77
13.	Addition of numbers in base 2 numerals	3.09	0.73	HE	3.04	0.80	HE	3.07	0.77
14.	Subtraction of numbers in base 2 numerals	3.00	0.58	HE	3.02	0.60	HE	3.01	0.59
15.	Multiplication of numbers in base 2 numerals	2.90	0.68	HE	2.88	0.78	HE	2.89	0.73
16.	Division of Number in base 2 numerals	2.66	0.65	HE	2.71	0.81	HE	2.69	0.73
17.	Transaction in the home and offices	2.78	0.74	HE	2.80	0.66	HE	2.79	0.70
18.	Multiplication and division of directed numbers	2.55	0.87	HE	2.61	0.74	HE	2.58	0.81
	Cluster mean	**2.96**	**0.71**		**2.93**	**0.72**		**2.94**	**0.72**
C.	**Algebraic Processes**								
19.	Use of symbols	2.89	0.77	HE	2.78	0.80	HE	2.84	0.79
20.	Simplification of algebraic expressions	2.98	0.66	HE	3.01	0.74	HE	3.00	0.70
21	Simple equations	3.22	0.70	HE	3.25	0.68	HE	3.24	0.69
22.	Linear inequalities	3.11	0.62	HE	3.08	0.64	HE	3.10	0.63
23	Graphs	3.03	0.58	HE	3.00	0.67	HE	3.02	0.63
24.	Factorization	2.90	0.68	HE	2.85	0.75	HE	2.88	0.72
25.	Simultaneous linear equation	2.71	0.85	HE	2.84	0.69	HE	2.76	0.77
	Cluster Mean	**2.96**	**0.72**		**2.95**	**0.74**		**2.96**	**0.73**
D.	**Measurement and Geometry**								
27.	Plane shapes	2.89	0.91	HE	2.85	0.74	HE	2.87	0.83
28.	Three dimensional figures	2.74	0.82	HE	2.91	0.66	HE	2.83	0.74

29.	Construction	2.36	0.99	LE	2.22	1.01	LE	2.29	1.00
30.	Angles	2.51	0.80	HE	2.55	0.92	HE	2.53	0.86
31.	Bearing	2.31	0.87	LE	2.14	0.96	LE	2.23	0.92
32.	Similar shapes	2.64	0.78	HE	2.53	0.89	HE	2.59	0.84
33.	Trigonometry	2.77	0.82	HE	2.68	0.87	HE	2.73	0.85
34.	Areas of plane figure	2.94	0.75	HE	2.80	0.93	HE	2.87	0.78
	Cluster Mean	**2.65**	**0.84**		**2.59**	**0.87**		**2.62**	**0.85**
E.	**Everyday Statistics**								
35.	Need for statistics	2.98	0.81	HE	2.82	0.91	HE	2.90	0.86
36.	Data collection	3.11	0.63	HE	3.08	0.74	HE	3.10	0.69
37.	Data Presentation	3.02	0.58	HE	3.00	0.66	HE	3.01	0.62
38.	Probability	2.88	0.93	HE	2.92	0.83	HE	2.90	0.93
39.	Measures of central tendency	3.14	0.60	HE	3.09	0.71	HE	3.12	0.66
Cluster mean		**3.03**	**0.71**		**2.98**	**0.77**		**3.01**	**0.75**

Analysis in table 2 revealed the mean responses of urban and rural Mathematics curriculum content in junior secondary schools in Aba education Zone of Abia State. The result indicated that two (2) out of the 39 listed items fell within the mean range of 1.50-2.49 which stand at a low extent, while 37 listed contents fell within the mean range of 2.50-3.49 which indicate at a high extent. The cluster means for the five themes for both urban and rural schools fell within the mean range of 2.50-3.49 which stand at a high extent. This implies that both urban and rural Mathematics teachers cover the contents of Mathematics curriculum of junior secondary schools in Aba Education Zone of Abia State.

Hypothesis One

There is no significant difference in the mean rating of urban and rural Mathematics teachers on the achievement of Mathematics curriculum objectives in junior secondary schools in Aba Education Zone of Abia State.

Table 3: z-test Analysis of Responses of Urban and Rural Mathematics Teachers on Achievement of Mathematics Curriculum Objectives

Location	N	$\overline{X}$	SD	DF	STD Error	z-cal	z-crit	Decision
Urban	71	2.92	0.88	110	0.173	0.18	1.98	Accept Ho
Rural	41	2.89	0.90					

Analysis in table 3 revealed that the z-calculated value was 0.18 and the z-critical value was 1.98 at 0.05 level of significance and degree of freedom of 110. Since the z-calculated value was less than the z-critical value, the null hypothesis was accepted. This means that there was no significant difference between the mean responses of urban and rural Mathematics teachers on the extent of achievement of Mathematics curriculum objectives in junior secondary schools in Aba Education zone of Abia State.

Hypothesis Two

There is no significant difference between the mean rating of urban and rural Mathematics teachers on the coverage of Mathematics curriculum content of junior secondary schools in Aba Education Zone of Abia State.

Table 4: z-test Analysis of the Responses of Urban and Rural Mathematics Teachers on the Extent of Coverage of Mathematics Curriculum Content

Theme Cluster	Location	N	$\overline{X}$	SD	DF	STD Error	z-cal	z-crit	Decision
Number and Numeration	Urban	71	2.92	0.78					
					110	0.148	0.068	1.98	Accept Ho
	Rural	41	2.91	0.74					
Basic Operation	Urban	71	2.96	0.71					
					110	0.140	0.21	1.98	Accept Ho
	Rural	41	2.93	0.72					
Algebraic expression	Urban	71	2.96	0.72					
					110	0.144	0.069	1.98	Accept Ho
	Rural	41	2.95	0.74					
Measurement and Geometry	Urban	71	2.65	0.84					
					110	0.169	0.361	1.98	Accept Ho
	Rural	41	2.59	0.87					
Everyday Statistics	Urban	71	3.03	0.71					
					110	0.147	0.34	1.98	Accept Ho
	Rural	41	2.98	0.77					

Analysis in Table 4 shows the independent z-test Analysis of the significant differences in the mean rating of urban and rural Mathematics teachers on the extent of coverage of Mathematics curriculum contents of junior secondary schools in Aba Education Zone of Abia State. The table revealed that the z-calculated value for the five sub-theme clusters (number and numeration, basic operations, algebraic processes, measuration geometry and everyday statistics) were 0.068, 0.21, 0.069, 0.36 and 0.34 respectively while the z-critical value was 1.98 at 0.05 level of significance and degree of freedom of 110. Since the z-calculated values were less than the z-critical value the null hypothesis was accepted. This means that there is no significant difference between the mean rating of urban and rural Mathematics teachers on the coverage of Mathematics curriculum content of junior secondary schools in Aba Education Zone of Abia State.

Discussion of Findings

The finding of this study revealed that the objectives of Mathematics curriculum are achieved at a high extent in urban and rural junior secondary schools in Aba Education Zone of Abia State. The corresponding hypothesis equally revealed that there was no significant difference between the mean rating of urban and rural teachers on the extent of achievement of Mathematics curriculum objectives in junior secondary schools in Aba Education Zone of Abia State. The finding of this study is in line with the findings of Zalmon, Daso and Uranta (2020) who investigated the evaluation of the Nigerian senior secondary education Mathematics curriculum implementation in Obio Akpor Local Government Area of Rivers State and found that the extent of achievement of senior secondary education Mathematics curriculum objectives is high.

The finding equally revealed that both urban and rural Mathematics teachers cover the content of Mathematics curriculum in junior secondary schools in Aba Education zone of Abia State. The corresponding hypothesis revealed that there was no significant difference between the mean ratings of urban and rural Mathematics teachers on the extent of coverage of Mathematics curriculum contents of junior secondary schools in Aba Education Zone of Abia State. The finding collaborates with the findings of Daso, Zalmon and Williams-West (2022) who worked on the evaluation of junior secondary school Mathematics curriculum implementation using CIPP Model and reported that the contents of Mathematics curriculum were covered to a high extent. However, the finding disagreed with the finding of Abdu (2014) who worked on the assessment of the implementation of Mathematics curriculum in senior

secondary schools in Kano state and observed that Mathematics curriculum contents are not fully implemented in senior secondary schools in Kano State.

Conclusion

Based on the findings, the study concluded that the objectives of junior secondary school Mathematics curriculum are achieved to a high extent in Aba Education Zone of Abia State. The study equally concluded that the contents of junior secondary school Mathematics curriculum are covered to a high extent. It is a known fact that when objectives of Mathematics curriculum are achieved and the contents covered to a high extent, the performance of student may equally be enhanced positively. However, the study further revealed that both urban and rural Mathematics teachers achieved the objectives and covered the content of Mathematics curriculum in junior secondary schools in Aba Education Zone of Abia State.

Recommendations

Based on the finding, the following recommendations are made;

1. Mathematics teachers should be encouraged to attend conferences, workshops and seminars to update their knowledge on current trends and innovation in Mathematics content.
2. Mathematics students and teachers should be encouraged to give adequate attention in teaching and learning of measurement and geometry contents such as construction and bearing that were found to be at a low extent.
3. Qualified Mathematics teachers should be recruited in urban and rural secondary school to handle the content of Mathematics to a very high extent.
4. Mathematics teachers and students should be encouraged to put in more effort in learning those contents such as construction and bearing that were found to be at a low extent.

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INTEGRATION OF PEACE EDUCATION IN SECONDARY SCHOOL CURRICULUM: A TOOL FOR PROMOTING PEACE AND NATIONAL DEVELOPMENT.

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Abstract
This study investigated the integration of peace education in secondary school curriculum: a tool for promoting peace and national development. The survey research design was adopted for the study. The population of the study consisted of all the senior secondary school two (SSS2) students in public secondary schools in Calabar metropolis of Cross River State, Nigeria. The simple random sampling technique was used for the study. A total of five hundred and seventy-three (573) students were sampled for the study and questionnaire titled; Integration of Peace Education Curriculum and National Development Curriculum Questionnaire (IPECNDQ) was the instrument used for data collection. Pearson Product moment correlation co-efficient analysis was the statistical tool used for testing the hypotheses at .05 level of significance. The result revealed significant relationship between peace building, peacemaking and national development. The findings showed that peace building and peacemaking engender harmony and peaceful coexistence among students, teachers and other members of the society which can foster national development. Based on the findings, it was recommended that; the national curriculum planners should integrate peace education contents at all levels of the school curriculum, the government should retrain teachers on the effective methods to inculcate in students the skills of peace building and peacemaking, the government should formulate and implement people oriented policies and programmes to reduce the rate of social unrest in the country.

Introduction

The government pride is to attainment of higher level of development in such a way that its citizens would derive natural attachment to governance. However, for a nation to be in a phase of development there must be some pre-requisites, which include educational, socio-political and economic stability. Nigeria has not been able to engender meaningful development in spite of her huge resources endowment. This has greatly affected her quest to improved quality of life of her citizens (Lawal & Oluwatoyin, 2011). Poverty,

unemployment and starvation still pervade the nook and cranny of the country. Development is essential and critical to growth and sustenance of any country. In order to successfully enhance meaningful development, effective strategies must be evolved. Development is an idea that embodies all attempts to improve the conditions of human existence in all ramifications. It implies improvement in material wellbeing of all citizens, not the most powerful and rich alone, in a sustainable way such that today's consumption does not imperil the future, it also demands that poverty and inequality of access to the good things of life be removed or drastically reduced (Gboyega (2003). Therefore, it seeks to improve personal physical security and livelihoods and expansion of life chances.

Naomi (1995) opined that development is usually taken to involve not only economic growth, but also some notion of equitable distribution, provision of health care, education, housing and other essential services all with a view to improving the individual and collective quality of life. Chrisman (1984) in Lawal and Oluwatoyin (2011) viewed development as a process of societal advancement, where improvements in the wellbeing of people are generated through strong partnerships between all sectors, corporate bodies and other groups in the society. It is reasonable to know that development is not only an economic exercise, but also involves both socio-economic and political issues and pervades all aspects of societal life. National development therefore can be seen as the overall development or a collective socio-economic, political as well as religious advancement of a country or nation (Nkang & Uwah, 2021). This is best achieved through development planning, which can be described as the country's collection of strategies mapped out by the government to enhance effective national development.

In spite of series of development strategies, put in place by successive governments, sometimes with good intentions, all attempts to generate meaningful development proved ineffective. As a result, one is confronted with worries, pondering if previous development plans or strategies were bad in their context, wrongly projected or if nothing was wrong with the plans, then what is the reason it is still difficult to generate meaningful development in spite of the huge resources at invested in this regard (Aremu, 2003).

National development may be hindered by incapacity of the executive to formulate and implement the plan and failure to consult the general public as it supposed to involve even the peasants in the villages. Development failed where there is no good governance and policies implementation; this is as a result of bad leadership in the country where most of our leaders have no sense of commitment to development. Real development is achieved through internal activities rather

than from external influences. (Lawal & Oluwatoyin, 2011).

Nigeria, known for its heterogeneity, cultural diversity and ethnic variation, need inclusion and proper integration of peace education at all levels of her education system to inculcate in learners peace oriented values and perceptions that can engender national development. Therefore, Peace education hopes to create in the human consciousness, a commitment to the ways of peace. Peace education tries to inoculate in students' values against the evil effects of violence by teaching them the skills to manage conflicts nonviolently and by creating a desire to seek peaceful resolutions of conflicts. Peace educators use teaching skills to stop violence by developing a peace consciousness that can provide the basis for a just and sustainable future (Boulding, 2000). The study of peace attempts to nourish those energies and impulses that make possible a meaningful and life enhancing existence. Peace educators address the violent nature of society, question the structures of violence that dominate everyday life and try to create a peaceful disposition in their students to counteract the values of militarism (Harris, 2021).

For the fact that individuals disagree about how to achieve security, there are many different paths to peace. Salomon (2002) stated that peace education programs take different forms because of the wide variety of conflicts that plague human existence. Each different form of violence requires a unique peace education strategy to resolve its conflicts. Peace education in intense conflicts attempts to demystify enemy images and urges combatants to withdraw from warlike behavior. In addition to providing knowledge about how to achieve peace, peace educators promote a pedagogy based upon modeling peaceful democratic classroom practices. They share a hope that through education people can develop certain thoughts and dispositions that will lead to peaceful behavior. Key aspects of this disposition include kindness, critical thinking, and cooperation (Harris & Morrison, 2003). Developing such virtues is an important part of peace education.

However, the struggle to achieve peace takes place at both individual and social levels. Peace educators work with individuals to point how the root problems of violence lie in broader social forces and institutions that must be addressed in order to achieve peace. Peace activists use community education to alert people about the horrors of violence. Peace education is the process of acquiring the values, knowledge and developing, attitudes, skills and behaviour to live in harmony with oneself, with others and with the natural environment (Wikipedia, 2015). Peace education according to Brigg (2020) is encouraging a commitment to peace as a settled disposition and enhancing the confidence of the

individual as an individual agent of peace; as informing the students on the consequences of war and social injustice; as informing the student on the value of peaceful and just social structure and working to uphold or develop such social structures; as encouraging the students to love the world and imagine a peaceful future; and as caring for the student and encouraging the student to care for others.

Peace education therefore can be seen as the type of knowledge that essentially inculcates discipline in people. It is teaches the past and present conflicts or wars noting the causes, the effects and recommendation towards averting such social ills (Best, 2004). In peace education, the essential elements are knowledge of fundamental human rights of citizen; the rise and fall of political entities such as the empires in the pre-colonial days; the importance of the rule of law, separation of powers and the menace of bad leadership. In Nigeria, peace education could be taught to students using the existing subjects in the secondary school curriculum in Nigeria. Subject, such as History, Social Studies, Geography, Government and Religious Studies are relevant in this case. In History, students are made to understand the past and present happenings in their communities and use the knowledge to better their future (Okoro, Onodugo, Agu & Okeke, 2018).

History would make students appreciate the factors that make for national unity and global understanding (NECO, 2002). Social studies is meant to transmit a body of knowledge, skill and values that aim at developing effective broad-minded patriotic citizen that will have as objective national integration, promotion of national unity and progress. It is also very good specialization that impacts the values of peace Education. It teaches learners the development of an understanding of their immediate surroundings and makes students develop skills which will enable them deal with and manage the forces of the world in which they live.

Okoro, Onodugo, Agu and Okeke (2018) are of the opinion that peace education could be integrated into the students using the existing subjects in the school curriculum in Nigeria. Subjects like History, social studies; Geography, Government and Religious Studies are relevant in this case. The development of the culture of peace can be traced to the indigenous system of education in Nigeria as well. Traditional education laid emphasis on character training. In the traditional community, like any other human society, conflicts or disputes arise. Such disputes are settled through dialogue by the family and community leaders. The extended family system and the decentralized political structure in some parts of Nigeria promote conflict resolution, respect for elders, mutual

understanding and harmony (Falade, Akinola & Adejubee, 2009).

Peace education has therefore become part of the society and school programme in many nations of the world. It could be disseminated formally in the school system or informally at the family or community levels. In the school system, elements of peace education are incorporated and taught as part of existing curriculum of subjects at the different levels (Gumut, 2004). Peace education is the educational efforts weather formal or informal that aims at developing in the citizens the attitudes, values and skills to live with others in harmony, mutual understanding, trust and dialogue or amicable resolution of misunderstanding/conflicts. Ajala (2003) stated that peace education includes all the values, attitudes and forms of behaviour, ways of life, respect for life, reflection of violence, commitment to principle of freedom, justice, solidarity, tolerance among people and between groups and individuals.

Integrating peace building and peacemaking contents in the school system may be a vital tool for peaceful existence and national development in Nigeria. Thus, Peace building is a structural mechanism involving a wide range of efforts by diverse actors in government and civil society at the community, national and international levels to address the immediate impacts and root causes of conflict before, during and after violent conflict occurs. Peace building ultimately supports human security, where people have freedom from fear, freedom from want and freedom from humiliation (https://allianceforpeacebuilding.org/what-is-peacebuilding/). Peace building efforts aim to manage, mitigate, resolve and transform central aspects of conflict through official diplomacy, civil society peace processes and informal dialogues, negotiations and mediations. Peace building addresses root causes of violence and fosters reconciliation to prevent the return of instability and violence. Its efforts are to change beliefs, attitudes and behaviors and to transform dynamics between individuals and groups toward a more stable, peaceful coexistence (https://allianceforpeacebuilding.org/2013/08/selected-definitions-ofpeacebuilding/).

Peacemaking involves stopping an ongoing conflict. Peacemaking aims to accomplish full reconciliation among rivals and new mutual understanding among parties and stakeholders. It does not address the underlying causes of violence or work to create societal change, as peace building does. Methods of peacemaking include negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, regional agencies or arrangements, sanctions, blockading and violent intervention. It is the diplomatic efforts to end conflict. Peacemaking implies the use of cooperative, constructive processes to resolve human

conflicts, while restoring relationships. Peacemaking does not deny the essential need for adversary processes, but places adversary processes into a larger perspective. So peacemaking concerns a deeper way of looking at conflicts than just winning or losing. It looks at conflicts as opportunities for people to grow, to accept responsibility for the relationships they are in, and for the potential of apology and forgiveness (https://www.beyondintractability.org/coreknowledge/peacemaking).

Akande (2018) reported the findings of a survey that was conducted to explore teachers' attitudes toward peace education. Primary data was collected from 43 teachers in the Ilorin-South local government region of North-Central Nigeria using a quantitative technique. The results showed that teachers were fully aware of the need for peace education but lack the skills and resources to effectively conduct a program of that kind. While Nkang and Uwah (2021) examined the management of tertiary education for peace and conflict resolution in Nigeria; the population of the study comprised lecturers from the Faculty of Social and Management Sciences from the Universities of Benin, Port Harcourt, Calabar and Uyo, totaling 2312. A sample of 231 lecturers was drawn for the study using the Cluster Sampling Technique. Data collection was done using a structured instrument tagged, "Managing Tertiary Education for Peace and Conflict Resolution" (MTEPCR) Questionnaire. The Instrument was duly validated and tested for reliability using the Cronbach Alpha reliability formula which gave a reliability coefficient of 0.81. Descriptive statistics such as mean, standard deviation and simple percentage were used to answer the research question. The null hypothesis was tested with the use of one-way ANOVA at 0.05 alpha level. The result of the study indicated a low extent in the implementation of peace and conflict resolution education in tertiary institutions. There was no substantial difference in the implementation of peace and conflict resolution education among four federal universities.

Ubogu (2016) investigated peace education in secondary schools: A strategic tool for peace building and peace culture in Nigeria. The survey research sampled 124 subjects (Teachers) selected from eighty nine (89) (Public and Private) Secondary Schools in Delta State. The internal consistency of the questionnaire items were tested using the Cronbach alpha method with a coefficient of 0.87. A mean and t-test statistics was used to analyze the research question and hypothesis. The study revealed that peace and cultural harmony goes hand in hand, in order for peace education to gain academic acceptance it has to be defined in terms of the predominant culture of the society and that anti-social vices should be dispirited amongst Nigerian.

Statement of the problem

Nigeria, with her heterogeneity, cultural diversity and ethnic variation, has been affected with the issues of ethnic conflicts among various tribes and regions, terrorism and mayhems. Boko Haram has caused terrible instability, poverty, displacement and severe misery mostly in the North-East area of Nigeria while other forms of social unrest exist in other parts. Despite the effort of the Nigerian government and military deployed against banditry, Boko Haram, Fulani herdsmen attack among others, instability and bloodshed have not only persisted but have risen on daily basis. The emergence and instances of instability challenges such as, murder, political thuggery, theft, blasting, aggressiveness, ceremonial assassinations, scammers–419, dehumanization, among others in Nigerian culture has continued to attract the attention of many countries, governments and individuals. Considering the state of affairs in the country, the sustainable national development of Nigeria presupposes the incorporation of peace and conflict studies in the curriculum of tertiary education in the country.

Method

The survey research design was adopted for the study. The population of the study consisted of all the senior secondary school two (SSS2) students in public secondary schools in Calabar metropolis of Cross River State, Nigeria. The simple random sampling technique was used for the study. A total of five hundred and seventy-three (573) students were sampled for the study and questionnaire titled; Integration of Peace Education Curriculum and National Development Curriculum Questionnaire (IPECNDQ) was the instrument used for data collection. Pearson Product moment correlation co-efficient analysis was the statistical tool used for testing the hypotheses at .05 level of significance.

Results and Discussion

Hypothesis one

There is no significant relationship between peace building among secondary school students and national development.

Table 1

Pearson Product moment correlation co-efficient analysis of the relationship between peace building and national development (N=573)

Variables	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	R
peace building	7297	21662993		
			4322026	0.42
national development	2290	4048820		

Significant at 0.05 level critical = 0.098 df = 571

The result of the analysis shows that the calculated r-value of 0.42 is greater than the critical r-value of .098 at 0.05 level of significant with 571 degree of freedom. This result shows significance since the calculated value is higher than the critical value, with this result; the null hypothesis is rejected while the alternate hypothesis is retained. This means that there is a significant relationship between peace building and national development.

Hypothesis two

There is no significant relationship between peacemaking among secondary school students and national development.

Table 2

Pearson Product moment correlation co-efficient analysis of the relationship between peace making and national development (N=573)

Variables	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	R
peace making	7466	211620	4419	0.33
national development	2290	404882		

Significant at 0.05 level critical = 0.098 df = 571

The result of the analysis shows that the calculated r-value of 0.33 is greater than the critical r-value of 0.098 at 0.05 level of significant with 571 degree of freedom. This result shows significance since the calculated value is higher than the critical value, with this result; the null hypothesis is rejected while the alternate hypothesis is retained. This means that there is a significant relationship between peace making and national development.

The findings of both hypotheses revealed positive relationship between integration of peace education in secondary school curriculum as a tool for promoting peace and national development, integrating peace building and peacemaking content into the national curriculum is considered to be a mean of enhancing national peace and development. These findings are in support of Okoro, Onodugo, Agu and Okeke (2018) who opined that peace education could be integrated into the students using the existing subjects in the school curriculum in Nigeria. Subjects like History, social studies; Geography, Government and Religious Studies are relevant in this case. The development of the culture of peace can be traced to the indigenous system of education in Nigeria as well. Traditional education laid emphasis on character training. In the traditional community, like any other human society, conflicts or disputes arise. Such

disputes are settled through dialogue by the family and community leaders (Falade, Akinola & Adejubee, 2009).

Akande (2018) explored teachers' attitudes toward peace education. The result showed that teachers were fully aware of the need for peace education but lacks the skills and resources to effectively conduct a program of that kind. While Nkang and Uwah (2021) examined the management of tertiary education for peace and conflict resolution in Nigeria; the result of the study indicated a low extent in the implementation of peace and conflict resolution education in tertiary institutions. Ubogu (2016) also investigated peace education in secondary schools: a strategic tool for peace building and peace culture in Nigeria. The study revealed that peace and cultural harmony goes hand in hand, in order for peace education to gain academic acceptance it has to be defined in terms of the predominant culture of the society and that anti-social vices should be dispirited amongst Nigerian.

Conclusion

Education, through effective curriculum design that includes peace education content is considered as a vital tool for national development. Creating the consciousness among the citizens on the need to give peace a chance in the society can enhance peaceful coexistence and national development. Therefore, the integration of peace education in the curriculum content at all levels of the educational system may be of help in the fight for peaceful society, national consciousness and development in Nigeria.

Recommendations

Based on the result of the findings, the following recommendations were made;

1. The national curriculum planners should integrate peace education contents at all levels of the school curriculum.
2. The government should retrain teachers on the effective methods to inculcate in students the skills of peace building and peacemaking.
3. The government should formulate and implement people oriented policies and programmes to reduce the rate of social unrest in the country.
4. Nigerians should learn how to dialogue with each other in cases of misunderstanding to avoid destruction of life and properties which cannot encourage development.

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MANAGING OUTDOOR CHEMSITRY CURRICULUM DELIVERY TO FORESTALL SECURITY THREAT IN PUBLIC SECONDARY SCHOOLS IN KADUNA STATE, NIGERIA

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Abstract
The research is on managing outdoor chemistry curriculum delivery to forestall security threat in public secondary schools in Kaduna State, Nigeria. To guide the study, two research questions were raised which are in line with the research hypotheses formulated. The study adopted descriptive research design. The population comprised of 4,663 respondents which entails: 1,006 teachers and 3,657 students in Senior Secondary School II (SS2). The research advisor (2006) was used to select a sample of 115 respondents from 15 senior secondary schools using simple random sampling technique. The instruments for data collection were researcher's designed questionnaire titled "Management of the Outdoor Chemistry Curriculum Delivery to Forestall Security Threat in Pubic Secondary Schools in Kaduna State Questionnaire" and 25 item Teacher Made Test, named Outdoor Chemistry Delivery Performance Test (OCPT). PPMC was used to determine the reliability coefficient of the test instrument at the value of 0.68 and Cronbach Alpha statistics was also used to determine reliability coefficient of the questionnaire at 0.78 respectively, which were considered adequate for the study. The statistics of mean and standard deviation were used to analyze responses to the research questions raised in the study, while Chi-square (X2) was used to test

the formulated hypotheses at 0.05 level of significance. The findings of the study revealed that outdoor chemistry curriculum delivery has drastically reduced insecurity in public secondary schools in Kaduna State. It was therefore, concluded that managing outdoor curriculum delivery is not only weapon to forestall security threat in public secondary schools in Kaduna State, but also an opportunity to improve students' performance in chemistry. It was recommended that quarterly review of outdoor/ security activities is important to further create conducive atmosphere for teaching major topics in Chemistry, among others.
Keywords: Outdoor curriculum delivery, Chemistry and Security Threat.

Introduction

Chemistry is a branch of science that deals with the study of the composition and properties of matter, changes in matter, the laws and the principles that govern these changes. Chemistry is one of the subjects that is offered in the secondary school curriculum. It is an important part of what is called science and an active and continually growing science that has vital importance to our world in both the realm of nature and realm of society (Anaso, 2010). Chemistry is characterized as the most utilitarian of all the experimental sciences. For example, a good secondary school education pass grade in chemistry is a prerequisite for joining medical and agricultural professional courses. However, the outdoor chemistry curriculum delivery is one of the innovative methodology adopted recently for the attainment of goals and objectives of chemistry curriculum as stipulated in the National policy of education in Nigeria.

Outdoor curriculum delivery is a vital element for development and educational experience of chemistry students in Nigeria. It is a wide term that includes such things as outdoor play in the environmental education, expeditions, field trips, and so on. Outdoor curriculum delivery is about releasing teaching and learning from the constraints of the classroom walls. Information Communication Technology (ICT) can be of real assistance by providing highly mobile and easy-to-use ways of exploring, recording, and reviewing outdoor learning. Rickinson, Dillon, Teamey, Morris, Choi, Saunders, & Benefield (2004) mentioned that the best outdoor curriculum delivery increases full school curricula, and reduces difficulty to organize available opportunities to students and that policy makers need to respond pro-actively. The outdoors curriculum delivery has always been a crucial part of the schools which help teachers to realize that it can be a very powerful learning environment as well as a place for exercise and play. House of Commons (2005) posited that all educational processes, the benefits of education outside the classroom should be rigorously researched, documented and

communicated.

Positive and reliable evidence of the benefits of outdoor curriculum delivery would help schools determine the priority to afford to such work. Outdoor curriculum studies are categorized as focusing on field work, outdoor adventure, and school grounds/community programs. Rickinson, Dillon, etal, (2004) revealed that outdoor curriculum delivery has positive impacts on school students. The outdoor curriculum delivery is a world full of opportunities for learning, creating and exploring. The outdoor curriculum delivery ties in to curriculum, supports academic standards, and provides real-world application for standardized tests and textbooks. Engaging with other professionals, teachers can plan to teach outdoors, smoothly integrating the outdoor curriculum delivery into lesson note, scheme of work, syllabus and curriculum as a whole.

The school is an organization that needs to have planned safety rules and regulations to protect its components so that the culture of learning and teaching is enhanced. Stephen (2004) referred to school security as 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). However, school security has a big impact for effective delivery of chemistry curriculum and attainment of the educational goals. School security can also be defined as measures taken for the protection of the students, staff, property and other school valuable assets from attacks or dangers. Kurtus (2012) viewed school security as administrative plan to protect students and staff in the event of danger. It is a plan against the criminal and anti-social behaviour which can cause disruption to the work of the school, physical and mental damage to the people and damage to the school building (Ragozzino, Litne, and Brien, 2009).

School security can also be explained as those measures taken to protect and manage school violence, reduce safety risks and liability, and improve on school community relationship (Trump, 2003). It is the physical protection of school property, school personnel and students from hostile acts or influences. They are measures taken to maintain order, discipline and prevention of disruption to the entire school (Fukumi, 2008). However, managing outdoor chemistry curriculum delivery in an important weapon to forestall school security threats in secondary schools. Students hardly perceive chemistry class as relevant or motivating even before the security challenges in secondary schools in Kaduna State. In many

cases, concepts are presented in an abstract way and in a strange and unfamiliar language. The terminologies used in the chemistry classes are neither related to the students' lives nor to the world where they live. A recent study confirmed the challenge in attitudes among students towards chemistry generally viewed as "toxic", whereas nature is perceived as "idyllic" (Krischer, Spitzer & Gröger, 2016). Suggested approaches to making school chemistry more relevant include teaching chemistry in realistic contexts by employing outdoor curriculum delivery approach to curtail security threat in public secondary schools (Gilbert, 2006; Parchmann et al., 2006). Another possibility is emphasizing education for sustainable development (Burmeister, Rauch & Eilks, 2012; Jegstad & Sinnes, 2015). Chemical substances are mostly examined in the laboratory, often separated from their normal range of use or occurrence, leading to the calls for the management of the outdoor chemistry curriculum delivery to forestall security threat in pubic secondary schools in Kaduna State. The study however intends to examine managing outdoor chemistry curriculum delivery to forestall school security threats in secondary schools in Kaduna State. The research will bring to lime light effective ways of managing outdoor chemistry curriculum delivery to avert security challenges in Kaduna State.

Objectives of the Study

The main objective of the study is to examine the management of the outdoor chemistry curriculum delivery to forestall security threat in pubic secondary schools in Kaduna State. Specific objectives were postulated to provide focus for the study. These include:

i. identify the effect of outdoor chemistry curriculum delivery on security threat in pubic secondary schools in Kaduna State
ii. Examine the influence of outdoor chemistry curriculum delivery on students' performance threat in pubic secondary schools in Kaduna State

Research Questions

In the same vein two research questions were raised to guide this study:

i. What is the effect of outdoor chemistry curriculum delivery on security threat in pubic secondary schools in Kaduna State?
ii. Does outdoor chemistry curriculum delivery improves students' performance in pubic secondary schools in Kaduna State?

Hypothesis

Also, two hypotheses were formulated to be tested at 0.05 level of significance,

which include:

i. **H_{o1}:** There is no significant effect of outdoor chemistry curriculum delivery on security threat in pubic secondary schools in Kaduna State
ii. **H_{o2}**: There is no significant effect of outdoor chemistry curriculum delivery on students' performance in pubic secondary schools in Kaduna State.

Methodology

The design adopted for this study was descriptive research design of survey type. This study focused on Zaria Educational Zone of which the respondents were principals, teachers and students. There are 49 public senior secondary schools in Zaria Education Zone. The study made use of public senior secondary schools of which the total population of the study was 4,663 respondents which entails: 1,006 teachers and 3,657 students in Senior Secondary School II (SS2). Simple random sampling technique was used to select a sample of 115 respondents in relation to the Research Advisor (2006) from 15 senior secondary schools. The sample distributions were 15 teachers and 100 students in public senior secondary schools in Zaria Education Zone.

The instruments for data collection were researcher's designed questionnaires titled "Management of the Outdoor Chemistry Curriculum Delivery to Forestall Security Threat in Pubic Secondary Schools in Kaduna State Questionnaire" and Teacher Made Test, named Outdoor Chemistry Delivery Performance Test (OCPT). The questionnaire was used to elicit information from the teachers, while the performance test was administered on the students. The test items consisted of 25 multiple choices, items constructed by the researcher. The questionnaire comprised of 13 items separated into two sections, where seven (7) of the items were on effects of the management of outdoor curriculum delivery on security threat in public secondary schools in Kaduna State, while six (6) of the items were on effects of outdoor curriculum delivery on students' performance structured on a five point rating scale. The content and construct validity of the instrument was validated by two (2) experts in the field of education curriculum and evaluation. The reliability coefficient value of the test instrument was obtained at 0.68 using Pearson Product Moment Correlation statistics, while the questionnaire reliability coefficient was also obtained at 0.78 using Cronbach Alpha statistics. The instruments were personally administered by the researcher which facilitated prompt response and returns from the respondents.

Descriptive mean and standard deviation were used to analyze responses to the

research questions raised based on the data collected from the respondents. Also inferential statistics such as Chi-square (X2) was used to test the formulated hypotheses at 0.05 level of significance. The Statistical Package for Social Science (SPSS) version 21.0 was used to code and facilitate the data analyzed.

Results

Analysis of Responses to Research Questions

Research Question 1: What is the effect of outdoor chemistry curriculum delivery on security threat in pubic secondary schools in Kaduna State?

The responses to this research was analyzed using mean and standard deviation

Table 1: Descriptive statistics on the effect of outdoor chemistry curriculum delivery on security threat in public secondary schools in Kaduna State

Table 2: Descriptive statistics on the effect of outdoor chemistry curriculum delivery on students' performance in public secondary schools in Kaduna State

		Pre-0utdoor			Post-outdoor		
Sub-variables	**N**	**Mean**	**STD**	**MD**	**Mean**	**STD**	**MD**
Effect of Outdoor	50	3.3836	0.64944	0.21	5.2603	1.67089	0.50
Students performance	50	3.1724	0.18990		4.7558	2.62031	

Table 1 showed the effect of outdoor chemistry curriculum delivery on security threat in public secondary schools in Kaduna State. This result indicated that post-outdoor chemistry curriculum delivery had a better mean score compared to pre-outdoor chemistry curriculum delivery. The finding indicated that the post-outdoor mean scores of 5.2603 and the standard deviation of 0.67089 with mean difference of (2.7) and (2.03) were obtained. Therefore, the standard deviation at each level indicated that there is mild difference in the pre-outdoor and post-outdoor chemistry curriculum delivery from each other.

Research Question 2: Does outdoor chemistry curriculum delivery improves students' performance in pubic secondary schools in Kaduna State?

The responses to this research was analyzed using mean and standard deviation

Table 2: Descriptive statistics on the effect of outdoor chemistry curriculum delivery on students' performance in public secondary schools in Kaduna State

		Pre-0utdoor			Post-outdoor		
Sub-variables	**N**	**Mean**	**STD**	**MD**	**Mean**	**STD**	**MD**
Effect of Outdoor	50	3.3836	0.64944	0.21	5.2603	1.67089	0.50
Students performance	50	3.1724	0.18990		4.7558	2.62031	

Table 2 showed the effect of outdoor chemistry curriculum delivery on students' performance in pubic secondary schools in Kaduna State. This result indicated that post-outdoor chemistry curriculum delivery had a better mean score compared to pre-outdoor chemistry curriculum delivery. The finding also indicated that the post-outdoor mean scores of 5.2603 and the standard deviation of 1.67089 with mean difference of (0.21) and (0.50) were obtained. Therefore, the standard deviation at each level indicated that there is difference in the pre-outdoor and post-outdoor chemistry curriculum delivery from each other. This implies that outdoor chemistry curriculum delivery has tremendously improved student performance.

Hypotheses Testing

H_{o1}: There is no significant effect of outdoor chemistry curriculum delivery on security threat in pubic secondary schools in Kaduna State.

The hypothesis was tested using Chi-Square (X2)

The summary of the data collected and analyzed is presented in table 3.

Table 3: Summary of Chi-Square on the effect of outdoor chemistry curriculum delivery on security threat in pubic secondary schools in Kaduna State.

Responses	SA	A	U	SD	D	Total
Observed Frequency (O)	51	32	7	10	15	115
Expected Frequency (E)	23	23	23	23	23	115
(O-E)	28	9	-16	-13	-8	0
(O –E)2	784	81	256	169	64	1354
∑(O-E)2/E	34.08	3.52	11.13	7.35	2.8	58.88

Interpretation: Chi-square (X2) = ∑ (O-E) 2/E, X2 = 58.88. The degree of freedom for Chi-square test is given as: df = (n - 1) Where df = degree of freedom n = no of responses. df = 5- 1 df = 4 At 5 df and assumed 5% (0.05) level of significance, the chi-square critical/tabulated value X2 @0.95 = 9.925 (see chi-square statistical table).

Decision Criterion: If the chi-square calculated (X2) is greater than the critical or tabulated value (X2t); reject the null hypothesis (H0) and accept the alternative hypothesis (H1) and then conclude that the research hypothesis is false. Table 3 showed the effect of outdoor chemistry curriculum delivery on

security threat in pubic secondary schools in Kaduna State. The null-hypothesis which stated that there is no significant effect of outdoor chemistry curriculum delivery on security threat in pubic secondary schools in Kaduna State was rejected. Therefore, there is significant effect of outdoor chemistry curriculum delivery on security threat in pubic secondary schools in Kaduna State. The implication of this result is that, outdoor curriculum delivery has positive effect on security threat in public secondary schools in Nigeria. This means that outdoor chemistry curriculum delivery has drastically reduced insecurity in public secondary schools in Kaduna State.

H_{o2}: There is no significant effect of outdoor chemistry curriculum delivery on students' performance in pubic secondary schools in Kaduna State

The hypothesis was tested using Chi-Square (X2)

Table 4: Summary of Chi -Square on the effect of outdoor chemistry curriculum Delivery on Students' performance in pubic second ary schools in Kaduna State

Responses	SA	A	U	SD	D	Total
Observed Frequency (O)	68	21	3	9	14	115
Expected Frequency (E)	23	23	23	23	23	115
(O-E)	45	2	-20	-14	-9	4
(O –E)2	2025	4	400	196	81	2706
∑(O-E)2/E	88.04	0.17	17.39	8.52	3.52	117.64

Interpretation: Chi-square (X2) = ∑ (O-E) 2/E, X2 = 117.64.

The degree of freedom for Chi-square test is given as: df = (n - 1) Where df = degree of freedom n = no responses. df = 5- 1 df = 4 At 5 df and assumed 5% (0.05) level of significance, the chi-square critical/tabulated value X2 @0.95 = 9.925 (see chi-square statistical table).

Decision Criterion: If the chi-square calculated (X2) is greater than the critical or tabulated value (X2t); reject the null hypothesis (H0). Table 4 showed effect of outdoor chemistry curriculum delivery on students' performance in pubic secondary schools in Kaduna State. The null-hypothesis which stated that there is no significant effect of outdoor chemistry curriculum delivery on students' performance in pubic secondary schools in Kaduna State was rejected. Therefore there is significant effect of outdoor chemistry curriculum delivery on students'

performance in pubic secondary schools in Kaduna State. The implication of this result is that outdoor chemistry curriculum delivery has positive impact on students' performance in pubic secondary schools in Kaduna State. This means has outdoor chemistry curriculum delivery has tremendously improved students' performance in public secondary schools in Kaduna State.

Discussion of the Findings

The research question one showed the effect of outdoor chemistry curriculum delivery on security threat in public secondary schools in Kaduna State. This result indicated that post-outdoor chemistry curriculum delivery had a better mean score compared to pre-outdoor chemistry curriculum delivery. The finding also indicated that the post-outdoor mean scores of 5.2603 and the standard deviation of 0.67089 with mean difference of (2.7) and (2.03) were obtained. Therefore, the standard deviation at each level indicated that there is difference in the pre-outdoor and post-outdoor chemistry curriculum delivery from each other. To back this up, the hypothesis one, which stated that there is no significant effect of outdoor chemistry curriculum delivery on security threat in pubic secondary schools in Kaduna State was rejected with the calculated chi-square 58.88 is greater than the table value of 9.925 @ 0.05 level of significance. Therefore there is significant effect of outdoor chemistry curriculum delivery on security threat in pubic secondary schools in Kaduna State. The implication of this result is that, outdoor curriculum delivery has positive effect on security threat in public secondary schools in Nigeria. The finding was supported by Home and Staniszewsk (2003) who perceived outdoor curriculum delivery as a form of protection against security threat which is used to safeguard the learners and teachers from impending danger or threat within the school environment. It is a measure taken to prevent dangers and threats. It involves measures taken to make the outdoor learning environment safe. A place where there is security is a place of safety, (Haughton and Metcalf, 2000). This evidenced that the learning environment is secured through outdoor and security plans which are well drawn policies of protection that should be given to the stakeholders within the outdoor environment, be it learners, educators and managers. This implies that managing outdoor chemistry curriculum delivery outdoor is a good weapon to stem insecurity in public secondary schools in Kaduna State.

The research question two showed the effect of outdoor chemistry curriculum delivery on students' performance in pubic secondary schools in Kaduna State. This result indicated that post-outdoor chemistry curriculum delivery had a better

mean score compared to pre-outdoor chemistry curriculum delivery. The finding also indicated that the post-outdoor mean scores of 5.2603 and the standard deviation of 1.67089 with mean difference of (0.21) and (0.50) were obtained. Therefore, the standard deviation at each level indicated that there is difference in the pre-outdoor and post-outdoor chemistry curriculum delivery from each other. This implies that outdoor chemistry curriculum delivery has tremendously improved student performance. To back this up, the hypothesis one, which stated that there is no significant effect of outdoor chemistry curriculum delivery on students' performance in pubic secondary schools in Kaduna State was rejected with the calculated chi-square value 117.64 is greater than table value 9.925 @ 0.05 level of significance. Therefore there is significant effect of outdoor chemistry curriculum delivery on students' performance in pubic secondary schools in Kaduna State. The implication of this result is that outdoor chemistry curriculum delivery has positive impact on students' performance in pubic secondary schools in Kaduna State. The finding was supported by Rickinson, Dillon, etal, (2004) who revealed that outdoor curriculum delivery has positive impacts on school students. The outdoor curriculum delivery is a world full of opportunities for learning, creating and exploring. They also mentioned that the best outdoor curriculum delivery increases full school curricula, and reduces difficulty to organize available opportunities to students and that policy makers need to respond pro-actively. The outdoors curriculum delivery has always been a crucial part of the schools which help teachers to realize that it can be a very powerful learning environment as well as a place for exercise and play.

Conclusion

Based on the findings, the study concluded that managing outdoor curriculum delivery is not only weapon to forestall security threat in public secondary schools in Kaduna State, but also an opportunity to improve students' performance in chemistry. This implies that managing chemistry outdoor curriculum delivery enhances achievement of chemistry curriculum goals by reducing learning difficulty and increase available opportunities to students to respond pro-actively to abstract chemistry instructions which help teachers to realize the chemistry instructional and behavioral objectives and as well forestall security threat in public senior secondary schools. This means that outdoor in chemistry provides a rich learning environment, enabling students and teachers with deep content knowledge to utilize basic and important insights when connecting chemistry to nature.

Recommendations

Based on the findings and conclusion reached on this study, the following recommendations were made:

1. Curriculum planners should include outdoor activity as one of the methods required in the curriculum, especially the student/teacher activities to bring about effective impartation of knowledge and problem solving skills and the need to decongest the chemistry curriculum which is already overloaded to give enough time for outdoor activities needs to be looked into. This will make the method have more significant effect on students' knowledge.
2. The quarterly review of outdoor/ security activities became paramount to create more conducive teaching and learning environment for teaching major topics in Chemistry.

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PREDICTING STUDENTS' ACADEMIC ACHIEVEMENT IN SENIOR SECONDARY SCHOOL BIOLOGY USING THEIR ATTITUDE, LEARNING STYLE AND SELF-CONCEPT SCORES

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Abstract
The study investigated the relative and combine contribution of attitude, learning style and self-concept on students' academic achievement in biology. The study adopted survey design. Four research questions were formulated and tested at 0.05 level of significance. The sample consisted of 360 SS 1 students offering biology in Ijebu North Local Government Area of Ogun State, using multistage sampling technique. Four instruments were used to gather required data: these are Students Achievement Test in Biology (r = 0.66), Students' Attitude Scale (r= 0.73), Students' Learning Style Scale (r = 0.70) and Students' Self-Concept Scale (r= 0.69). Data were analyzed by using multiple regression analysis (MRA). The findings revealed that the students' attitude, learning style and self-concept, when combined or used alone, have significant contribution towards students' performance in biology. Based on the findings, it was recommended among other that teachers should be familiar with various students' attitude, learning style and self-concept with the view to accommodating them in the classroom so as to have better performance.
Keywords: Students' Academic Achievement, Attitude, Learning Style, Self-Concept, Biology.

Introduction

Science plays a vital role in contemporary society and it is indispensable for the existence of any nation. Among the sciences, biology is particularly essential in nation building considering the role it plays in various aspects of the economy and public life such as health, manufacturing, agriculture, population control and so on. Biology is the science of life and also it is one of the science subjects offered in senior secondary schools in Nigeria (Federal Republic of

Nigeria, 2014). Also, biology is required as one of the basic entry requirement into any science-related courses such as medicine, nursing, pharmacy, zoology, botany biochemistry among other degree programmes in the universities and other institutions of higher learning. Research results have shown that despite the importance attached to biology, students' academic achievement in the subject at the secondary level has been dwindling over the years in Nigeria (Adebanjo, 2020; Adebanjo, 2022; Raji, 2017).

West African Examinations Council (WAEC) has repeatedly reported poor performance of students in biology (WAEC, Chief Examiners' Report 2018, 2019, 2020, 2021 & 2022) and this has been a concern to stakeholders. However, this scenario of poor performance in biology has been linked to many students' factors such as students' attitude towards biology, learning style, gender, achievement motivation, and self-concept among others (Adebanjo, 2021; Awobodu, 2016; Taiwo, 2019; Raji, 2017). The implication is that there would be shortage of manpower in science, technology and engineering which might affects the country's self-sustenance and national development (Alebiosu , 2017).

Attitude towards biology plays a crucial role in the teaching and learning process of biology. Attitude is based on value and belief, as well as varying degree of factual knowledge (Raji, 2017). According to Awobodu (2016), attitudes are formed by people as a result of some kinds of learning experiences and if the experience is favourable, a positive attitude is formed and vice versa. Furthermore, the attitude people hold can frequently influence the way they act and respond to situations. Oludipe (2015) opined that when students' attitude is improved then the academic achievement will definitely improve, because students achieve better when they are interested in whatever they are doing.

Some researchers have shown that students' attitude toward a subject can influence students' performance (Gisanrin, 2019; Olurinola, 2017; Nwosu, 2019). Several studies had been conducted to find out the relationship between attitude towards biology and academic achievement of the students. Most of these studies showed that there is a positive correlation between students' attitude towards biology and academic achievement of students (Adebanjo, 2019; Awobodu, 2016). However, Papanastasiou and Zembylas (2002) observed an interesting result from data collected by them that students' attitudes do influence their actual achievement in science, their science achievement does not necessarily influence their attitudes. Thus, although positive attitudes can increase the students' science achievement which will eventually lead to better performance.

Studies revealed that matching teaching and students' attitude can significantly improve academic achievement at the secondary school levels (Adebanjo, 2019; Olurinola, 2015). For instance, Olurinola (2015) examined the effects of power point and multiple mouse presentation media on junior secondary school students' learning outcomes in cultural and creative art in Ogun State using students' attitude as one of the variable. The finding of this study showed that there was significant main effect of students' attitude on achievement in cultural and creative art.

Similarly, Adebanjo (2019) investigated the effects of Dick and Carey instructional model on students' learning outcomes in secondary school biology using students' attitude as one of the variable. The finding revealed that there was significant main effect of attitude on students' achievement in biology. Findings of Raji (2017) showed that high achievement could serve to predict a positive attitude but a positive attitude alone could not predict stronger achievement. This means that positive attitude alone without hardwork and improvement may serve to predict low achievement. Several studies had been conducted to find out the relationship between attitude towards science and academic achievement of the students. Most of these studies showed that there is a positive correlation between students' attitude towards science and academic achievement of students (Mohd, Mahmood, & Ismail, 2011; Bramlett & Herron, 2009).

Nicolaidou & Philippou (2003) investigated the influence of attitudes towards mathematics, self-efficacy and achievement in problem solving. The result indicated that there is a relationship between students' attitude and academic achievement. Similarly, Mohd et. al. (2011) examined factors that influence students in mathematics achievement and the result revealed that there is a relationship between students' attitude and academic achievement. Moreover, Vandecandelaere, Speybroeck, Vanlaar, De Fraine & Van Damme (2012) investigated learning environment and students' mathematics attitude and the result revealed that there is no correlation between students' attitude and achievement.

Students' learning style is another variable that can influence students' academic achievement based on several studies in the past (Adesanya, 2017; Adunola, 2015; Taiwo, 2019). A learning style is a student's consistent way of responding to and using stimuli in the context of learning. Jeniffer, Chia and Kemi (2011) defined learning style as the composite of characteristic cognitive, affective and physiological factors that serve as relative stable indicators of how a learner perceives, interacts with and responds to the learning environment. Mumtaz (2013) also defined learning style as those educational conditions under

which a student is most likely to learn. Thus, learning styles are concerned with how learners prefer to learn. According to Kolb (2005), there are four fundamental learning styles. They are accommodating, diverging, assimilating and converging learning styles.

Most students favour to learn in particular ways with each style of learning contributing to their success in retaining what they have learnt. In a study conducted by Chang (2010), it was reported that students retain 10% of what they read; 26% of what they hear; 30% of what they see; 50% of what they see and hear; 70% of what they see, hear as and do. Some students learn in many ways while others might only favour one or two. Those students with multiple learning styles tend to gain more and obtain higher scores compared to those who rely solely on one style. Students learn more when information is obtained in a variety of approaches than when only a single approach is applied because every student has his/her own learning style (Olurinola, 2015).

Studies revealed that matching teaching and different learning styles can significantly improve academic achievement at the secondary school levels (Adebanjo, 2020; Gissarin, 2019; Nwosu, 2019; Olurinola, 2015). For instance, in a study conducted by Adebanjo (2020) on learning style and gender as predictors of students' academic performance in biology , it was revealed that students' learning style has significant relative influence on academic performance of students in biology.

In a study conducted by Rutz (2003) on learning styles and educational performance: Implications for professional development programmes, the result revealed that there is a positive relationship between academic achievement and the converging learning style. Similarly, Boyatzis and Mainemelis (2000) examined an empirical study of pluralism of learning and adaptive styles in an MBA Program. They concluded that there is a positive relationship between academic achievement and the converging learning style.

Furthemore, Malcom (2009) investigated the relationship between learning styles and success in online learning. He opined that there is an academic performance privilege for converging and assimilating learning styles. Also, Adunola (2015) examined the effect of hypermedia knowledge and learning styles on student-centered concept maps about hypermedia. The result found that assimilating and diverging learners were the most productive on concept mapping method of teaching.

Another important factor that could be responsible for students' underachievement in biology is the students' self-concept. Self-concept is a characteristic inherent in the personality of every individual and also a general

confidence that individual feel about themselves. Though, different individuals have either positive or negative self-concept. It is an important construct in education, because of its linkage to academic achievement; better achievement leads to improvement of self-concept, and positive self-concept can help students' achievement concurrently (Ifamuyiwa, 2012).

Self-concept is a characteristic inherent in the personality of every individual and it is very significant to psychologists and educationists because whatever a person feels or thinks about himself is very important and could be a strong determinant of his behavior, even at school (academic performance). Teachers must consider students' self-concept on a specific subject as an important factor for students' achievement because students who have good self-concept of themselves is performing well resulting to better performance (Raju, 2013).

Some researchers reported that positive self-concept have causal predominance over students' academic achievement (Affum-Oseil, Eric, Barnie & Forkuoh, 2014; Raju, 2013; Sikhwara, 2014). For instance, a research conducted on the effect of students' self-concept and gender on academic achievement in science by Raju (2013), revealed that there is a significant interaction effect between the students' gender and self-concept on students' science achievement in grades 11 and 12. Similarly, Olatunde (2010) examined students' self-concept and mathematics achievement in some secondary schools in Southwestern Nigeria. The result showed that students who have positive self-concept performed better in mathematics.

Furthermore, in a study conducted by Sikhwara (2014) on the relationship between motivation self-concept and academic achievement of students at a University of Limpopo Province, South Africa, the result revealed that there is a significant interaction effect between motivation self-concept and students' academic achievement. Moreover, Affum-Oseil, et. al. (2014) investigated achievement motivation, academic self-concept and academic achievement among high school students. They reported that there is a significant interaction effect between achievement motivation, academic self-concept and academic achievement of students. This means that achievement motivation and academic self-concept had an influence on academic achievement of students

Similarly, Archana and Chamudeswari (2013) examined self-concept and academic achievement of students at high school and reported that self-concept had a significant influence on students' academic achievement. Recent study reported that children in a classroom where the teacher helps pupils to

clarify their self-concepts and to accept themselves as they are, recorded more significant positive performances than children taught by a teacher who emphasizes only correct answers and the passing of examination (Raju, 2013).

This study is hinged on open system theory which was developed by Emery in 2004 which explained the relationship between attitude, learning style and self-concept. It is a system that regularly exchanges feedback with its external environment. In a school system, the interaction of students with variables within the school (teachers, school facilities, etc.) and outside the school (home, etc.) will influence their attitude towards a subject, self-concept, learning style and academic performance. In this study, the system is focused on the interaction of the predictor variables (attitude to biology, learning style and self-concept) with the criterion variable (students' academic achievement). As the predictor variables interact with themselves to determine the achievement of students, they also interact with other variables like influence from home factors (parents' income, concern for students' progress, etc.) and school factors (group study, teachers' effectiveness, etc.). This interaction could determine how the predictor variables predict the criterion variable and this interaction makes the system open.

Statement of the problem

Studies and reports had shown that there is a persistent poor students' achievement in their internal and external examinations in biology. Several stakeholders had blamed the students for the performance because they felt that they are the main determinant of success or failure in their examination. Observation and reports from examination bodies revealed that a high percentage of secondary school students continue to perform poorly in biology examination. Many student-factors as shown in past studies attributed to poor performance in biology but the researcher is interested in the selected factors such as students' attitude, learning style and self-concept. This is because, there is no indepth studies showing the prediction of students' achievement using the three variables (attitude, learning style and self-concept) in combined form.

Research Questions

Four research questions were formulated and tested at 0.05 level of significance.

1. To what extent will the predictor variables (attitude, learning style and self-concept) when combined predict students' academic achievement in biology.

2. To what extent will students' attitude predicts students' academic achievement in biology.
3. To what extent will students' learning style predicts students' academic achievement in biology.
4. To what extent will students' self-concept predicts students' academic achievement in biology.

Method

The research design employed for the study is a survey design because it does not involves manipulation of variables. The population of the study consisted of all senior secondary school one (SS 1) students offering biology in public secondary schools in Ogun State. The sample for the study consisted on three hundred and sixty (360) students offering biology. A multistage sampling procedure was used for the selection of schools for the study. At first stage, simple random sampling technique was used to select twelve (12) public senior secondary schools from a total of nineteen (19) public secondary schools in Ijebu North Local Government Area of Ogun State. At the second stage, simple random sampling technique was used to select twenty (20) students in each sampled secondary school.

Four instruments were used to collect relevant data for the study. These are:

a) Students' Achievement Test in Biology (SATB)
b) Students' Attitude Scale (SAS)
c) Students' Learning Style Scale (SLSS)
d) Students' Self- Concept Scale (SSCS)

Students' Achievement Test in Biology (SATB)

The Students Achievement Test in Biology (SATB) was developed as follows; draft of 60 multiple choice objectives items was first developed and presented to two experts in Educational Evaluation with the table of specification for perusal and advice. Their suggestions and corrections were used to modify the items for adequacy, simplicity of language and relevant to content. Twenty (20) items which survived the item analysis constituted the Students Achievement Test in Biology (SATB). The SATB was meant to measure students' achievement in biology. The items were selected from the scheme of work for SS 1 in the area of nutrition, population and micro-organism. The SATB is a multiple choice test-items with five options lettered A – E. The instrument was divided into two sections (A & B). Section A asked for the demographic data of the students and the name of the school while section B contained the 20 multiple choice test-items. The test items were constructed in

such a way to reflect three categories of cognitive tasks of knowledge, comprehension and application. The face and content validity of the instrument was determined by the perusal of two experts in biology and it was confirmed that the instrument was relevant, unambiguous, detailed and capable of eliciting the needed responses from the target population. Then, the 20 items SATB was administered on a sample of 25 SS 1 students different from the students used for the main study and the result using test-retest reliability of 0.66 was obtained.

Students' Attitude Scale (SAS)

The Students' Attitude Scale (SAS) is adapted from Raji (2017). The researcher modified the items to suit the purpose of the study. The adapted version contained 27 items, but 20 items were selected by the researcher to form the new instrument. Students' Attitude Scale (SAS) has four options, which are Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). It has two sections. Section A covers the bio - data of the respondents while Section B contains 20 items, which elicit information on attitude of students towards biology. SAS was then given to two biology teachers in secondary schools and one lecturer in Education Foundation and Counselling Department, Faculty of Education, Olabisi Onabanjo University, Ago Iwoye, Ogun State for perusal and corrections. Their observations and suggestions were then applied in modification and production of the final copy. Then, the SAS which contained 20 items was administered to a sample of 20 SS 1 students outside the main study but similar in characteristics to the students for whom the instrument was intended in order to establish its reliability for the study. A Cronbach alpha coefficient of 0.73 was obtained.

Students' Learning Style Scale (SLSS)

SLSS is an adapted version of Karthigeyan and Nirmala (2013). Initially, the adapted SLSS contained 25 items, but for the purpose of the study, 20 items were selected by the researcher to form the new instrument. SLSS has 20 items which is capable of eliciting information on students' learning style and comprised of two sections. Section A asked for the bio-data of the respondents. Section B contained 20 items of four options which are Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). SLSS was then given to two lecturers in Science and Technology Education Department, Faculty of Education, Olabisi Onabanjo University, Ago Iwoye, Ogun State for face and content validity. Their observations and suggestions were then applied in modification and production of the final copy. Then, the SLSS which contained

20 items was administered to a sample of 25 SS 1 students outside the main study but similar in characteristics to the students for whom the instrument was intended in order to establish its reliability for the study. A Cronbach alpha coefficient of 0.70 was obtained.

Students' Self-Concept Scale (SSCS)

Students' Self-Concept Scale (SSCS) was adapted from Kehinde (2002) and the researcher used the instrument without modification. It contained 20 items which elicit information on self- concept of students. It has four options, which are Strongly Agree (SD), Agree (A), Disagree (D) and Strongly Disagree (SD). The instrument has two sections. Section A covered the bio-data of the respondents while Section B contained 20 items meant to elicit information on self-concept. SSCS was then given to two lecturers in Education Foundation and Counselling Department, Faculty of Education, Olabisi Onabanjo University, Ago Iwoye, Ogun State for face and content validity. Then, SSCS which contained 20 items was administered to a sample of 35 SS 1 students outside the main study but similar in characteristics to the students for whom the instrument was intended in order to establish its reliability for the study. A Cronbach alpha coefficient of 0.69 was obtained.

Procedure for Data Collection

The researcher visited each of the selected school and sought permission from the principals and also the biology teachers. All the twelve biology teachers in the sampled schools served as research assistants. The researcher enlightened the research assistants on the purpose and duration of the test and also informed them to administer the SLSS, SAS, SSCS and SATB on the respondents. The research assistants were given instruction by the researcher to implore the respondents to give unbiased and honest response to all the items in the questionnaires. The researcher gave the questionnaires to the research assistants for distribution to the respondents in their respective schools. One week after, the researcher went round the selected schools and collected the questionnaires back from the research assistants. Out of the 360 questionnaires, 310 questionnaires were filled correctly. The 310 questionnaires were scored, coded and used for data analysis.

Data Analysis

The inferential statistics was used for the analysis and it involved the use of multiple regression analysis at 0.05 level of significance.

Results and Discussion

Research Question One: To what extent will the predictor variables (attitude, learning style and self-concept) when combined predict students' academic achievement in biology?

Table 1: Summary of the combined Prediction of Attitude, Learning Style and Self-Concept on Students' Academic Achievement in Biology.

Model	R	R Square	Adjusted R Square	Std Error of Estimate
1	0.259	0.063	0.056	7.317

Analysis of Variance (ANOVA)

Model		Sum of Square	df	Mean Square	F	Significant
1	Regression	1678.151	3	373.028	8.266	0.000
	Residual	28620.330	305	52.505		
	Total	30298.481	308			

The result in table 1 showed a significant outcome ($R = 0.259$, $F_{(3,305)} = 8.266$, $p < 0.05$). This shows that combination of the predictor variables (attitude, learning style and self-concept) significantly predicts the criterion variable (students' academic achievement in biology). The result further showed that the predictor variables ((attitude, learning style and self-concept) when combined jointly accounted for 6.3% ($R^2 = 0.063$) of the variances of students' academic achievement in biology. This means that the predictor variables ((attitude, learning style and self-concept) enhanced students' academic achievement of in biology.

The findings of the study corroborated with the findings of Mohd, Mahmood, & Ismail (2011); Olurinola (2015) who reported that there is a significant relationship between students' attitude and academic achievement. However, this result refuted the findings of Vandecandelaere, et. al. (2012) who reported that there is no correlation between students' attitude and achievement.

The findings of the study also supported the findings of Adebanjo (2020); Adesanya (2017); Taiwo (2019) who reported that students' learning style has significant relative influence on students' academic performance in biology. Similarly, Malcom (2009) opined that there is a significant difference in the performance of students based on learning style. Olatunde (2010) reported that there is a significant relationship between students' self-concept and academic achievement. Also, Attum-Osel et. al. (2014) opined that only positive self-concept has causal effect on students' performance. Similarly, Adesanya (2017) reported that self-concept had a significant influence on students' performance.

Therefore, the plausible reason for this outcome might be the encouragement received by the teacher and school administrators, learner-centered teaching approach adopted by the teacher in the classroom which makes students participated actively in the learning process because according to Ifamuyiwa (2012) positive self-concept and attitude can help students' achievement concurrently in other to make learning permanent.

Research Question Two: To what extent will students' attitude predicts students' academic achievement in biology?

Table 2: Summary of Regression of Students' Attitude on Students' Academic Achievement in Biology.

Model	R	R Square	Adjusted R Square	Std Error of Estimate
1	0.223	0.050	0.048	7.340

Analysis of Variance (ANOVA)

Model		Sum of Square	df	Mean Square	F	Significant
1	Regression	1492.748	1	1364.000	19.640	0.004
	Residual	24928.444	306	52.589		
	Total	26421.192	307			

Result in table 2 revealed a significant outcome ($R = 0.223$, $F_{(1,306)} = 19.640$, $p < 0.05$). This implies that students' attitude is a significant predictor of students' academic achievement in biology. This showed that the students' attitude accounted for 5.0% ($R^2 = 0.050$) of the variances of students' academic achievement in biology. This means that the predictor variable (attitude) enhanced students' academic achievement in biology. This could be as a result of students' interest in the subject and interpersonal relationship between the teacher and the students as observed by the researcher. The findings of the study corroborated with the findings of Nwosu (2019); Gissarin (2019) who reported that there is a significant relationship between students' attitude and academic achievement. However, this result refuted the findings of Vandecandelaere, et. al. (2012) who reported that there is no correlation between students' attitude and achievement.

Students learn best when they are interested in whatever they are doing. Interactive experiences increase attitude and attitude increase performance (Adebanjo, 2019). They were delighted in what they were doing leading to improved performance.

Research Question Three: To what extent will students' learning style predicts students' academic achievement in biology?

Table 3: Summary of Regression of Students' Learning Style on Students' Academic Achievement in Biology.

Model	R	R Square	Adjusted R Square	Std Error of Estimate
1	0.111	0.012	0.011	7.490

Analysis of Variance (ANOVA)

Model		Sum of Square	df	Mean Square	F	Significant
1	Regression	389.701	1	371.398	6.566	0.010
	Residual	29537.489	306	55.212		
	Total	29927.190	307			

Result in table 3 revealed a significant outcome ($R = 0.111, F_{(1,306)} = 6.566, p < 0.05$). This implies that students' learning style is a significant predictor of students' academic achievement in biology. This showed that students' learning style accounted for 1.2% ($R^2 = 0.012$) of the variances of students' academic achievement in biology. The plausible reason for this outcome might be due to the relationship between the teacher and the students, and learner-centered teaching approach adopted by the teacher in the classroom. This means that the predictor variable (learning style) enhanced students' academic achievement in biology The findings of the study supported the findings of Adesanya (2017); Taiwo (2019) who reported that students' learning style has significant relative influence on students' academic performance. Malcom (2009) also reported that there is a significant difference in the performance of students based on learning style. Students have different learning styles with different strengths and learning preferences, therefore teachers must adjust their instruction according to the students' learning styles

Research Question Four: To what extent will students' self-concept predicts students' academic achievement in biology?

Table 4: Summary of Regression of Students' Self-Concept on Students' Academic Achievement in Biology.

Model	R	R Square	Adjusted R Square	Std Error of Estimate
1	0.155	0.024	0.022	6.444

Analysis of Variance (ANOVA)

Model		Sum of Square	df	Mean Square	F	Significant
1	Regression	578.618	1	618.186	15.978	0.018
	Residual	27699.937	306	54.291		
	Total	28278.555	307			

Result in table 4 revealed a significant outcome ($R = 0.155$, $F_{(1,306)} = 15.978$, $p < 0.05$). This implies that students' self-concept is a significant predictor of students' academic achievement in biology. This showed that students' self-concept accounted for 1.1% ($R^2 = 0.011$) of the variances of students' academic achievement in biology. This could be as a result of students' interest in the subject and interpersonal relationship, encouragement and support they receive from their teachers as observed by the researcher. The finding is in support with the work of Affum-Oseil et.al. (2014); Raju (2013); Sikhwara (2014) who reported that self-concept has a significant influence on students' academic achievement. Also, Adesanya (2017); Taiwo (2019) reported that students' self-concept has significant relative influence on students' academic performance. Students with positive self-concept have causal predominance over students' academic achievement and this means that students who have positive self-concept will perform better in biology.

Conclusion

The study concluded that students' attitude, learning style and self-concept when combined are valuable variables and strong indicators for predicting and planning for the academic achievement of students in biology. Furthermore, it concluded that the predictor variables (attitude, learning style and self-concept) when used separately have significant contribution towards students' academic achievement in biology.

Recommendations

Based on the major findings of this study, the following recommendations are offered.

- Teachers should take cognizance the students' attitude, learning style and self-concept when designing an instruction for classroom usage for better performance.
- Teachers should be familiar with various students' attitude, learning style and self-concept with the view to accommodating them in the classroom so as to have better performance.
- Students should be assisted to identify their attitude, learning style and self-concept towards a subject for enhance performance.

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INCULCATING CRITICAL THINKING SKILLS IN READING COMPREHENSION IN ENGLISH USING THE WEBQUEST APPROACH

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Abstract
In this age of technological advancement in which the world is a global village, teachers can provide effective teaching via the World Wide Web. This shift in pedagogical medium is forcing academic institutions to rethink how they could deliver course contents to students. The purpose of this research was to determine between the WebQuest and lecture method of teaching which method would prove more effective in teaching critical thinking skills in reading comprehension to students. A pre-test/post-test quasi-experimental non-equivalent control group design was used for the study. The population of this study is the 119 300-level students of Prince Abubakar Audu University, Anyigba. The purposive sampling technique was employed to sample all the 119 students for the study. 60 participants (28 males and 32 females) were randomly selected through balloting to constitute the experimental group, while 59 participants (22 males and 37 females) constitute the control group. The instrument for data collection was a reading comprehension test tagged "University Students' Reading Comprehension Tests" (USRCT). The research questions were analysed using mean and standard deviation while the hypotheses were subjected to analysis of covariance (ANCOVA). The results of the study show that the experimental group achieved higher than the control group. The finding also revealed that even though the gain score of the females is higher than the males, statistically, there is no significant difference in the achievement of males and females. These findings indicate that WebQuest is a valuable strategy for an extensive reading activity; that teaching strategy may not matter if students are exposed equally to language stimuli, they will perform well irrespective of gender. It was recommended, among others, that language teachers should adopt teaching strategies, such as webQuest, that will help students develop the critical thinking abilities and skills necessary to succeed in the world of work and future job market.
Key words: Critical thinking, Reading comprehension, WebQuest, English.

Introduction

There seems to be poor handling of the teaching of English in schools in Nigeria. The fact that most teachers continue to use the traditional lecture method rather

than engaging their students in active learning is quite disturbing (Omachonu, 2021a). There are numerous issues with traditional teaching methods, particularly with implementation, a static learning environment, and a dearth of learning resources. Omachonu (2021b) argues that the way English is taught in secondary schools now makes it impossible for students to develop the critical thinking abilities and skills necessary to succeed in the world of work and future job market. "The teacher bears full responsibility for preparing students to tackle these challenges" (Omachonu, 2021b: 153). Through authentic projects that prioritized inquiry-based learning, teachers have always looked for ways to encourage higher-order thinking. Numerous researches have concentrated on the process of teaching and raising students' achievement via the use of suitable technological procedures and resources. According to researchers, learning online can help to ease restrictions and can offer a more adaptable and effective collaborative learning environment (Alshumaimeri & Almasri, 2012).

One learning strategy that makes use of the internet as the main delivery method for teaching and learning is the WebQuest. March (2003), defines WebQuest as a scaffolded learning structure that encourages students to explore a central, open-ended question, develop their own expertise, and take part in a final group process that aims to turn newly learned information into a more sophisticated understanding. It does this by using links to important resources on the World Wide Web. The term “WebQuest” was first used in 1995 by Bernie Dodge, a professor of education at San Diego State University, to refer to an inquiry-based activity in which students use web-based resources and tools to translate their learning into meaningful understandings and practical tasks. There are two types of WebQuests: a brief version which can be completed within one to three class periods, and a longer one which lasts between one to four weeks (Akhand, 2015).

The idea that learning is an active process in which students generate new ideas or concepts based on their existing or prior knowledge is crucial (Metsamuuronem & Rasaon, 2018). The key idea behind this strategy is that learning is an active process of knowledge creation rather than knowledge acquisition. Students are given the opportunity to learn by creating their own perspectives of complex subjects when Internet technology is incorporated into the course curriculum. Through the use of WebQuests, students are required to engage in the cognitive processes that lead to comprehension and the construction of meaning from personal experience. The constructivist theory of learning and the significant impact of technology on education serve as the foundation for this study. Although WebQuest has been around for a while and has been well-received by educators, not much research has been conducted on how this technology-based approach affects reading comprehension in Nigeria.

The study of reading comprehension and critical thinking has attracted a lot of interest recently and is now a well-liked subject in cognitive psychology. Theoretical frameworks for understanding and conceptualizing reading comprehension have been constructed by contemporary cognitivists using a variety of related concepts, including critical thinking, previous knowledge, inference-making, and metacognitive abilities (Limbach & Waugh, 2010, Zabit, 2010). The schema theory, which is seen as a theory of knowledge and how knowledge is represented and arranged to enable the application of prior knowledge to enhance reading comprehension, is one of the trends.

The schema theory was one of the leading cognitivist learning theories which was introduced by Bartlett in 1932. The term "schema" was first used in psychology by Barlett (1932) as "an active organization of past reactions or experiences" (p. 201); later, when discussing the crucial role of background knowledge in reading comprehension, Rumelhalt (1984), Carrell (1988), and Hudson (1982) introduced schema into reading. Schema is described as "a data structure for representing the genetic concepts stored in memory" (Rumelhart, 1984, P. 34). It describes how readers make use of prior knowledge to understand and gain information from text. The fundamental tenet of schema theory assumes that written word cannot convey meaning on its own. In contrast, a text only gives readers instructions on how to draw meaning from their own already acquired knowledge. According to Barrlett (1932), this prior knowledge is referred to as the readers' background knowledge and the previously acquired knowledge structures are referred to as schemata. A reader's schemata are arranged in a hierarchy, with the most general schemata at the top and the most specialized ones at the bottom. Schema theory holds that reading comprehension involves a dialogue between the reader's prior knowledge and the text. Effective comprehension necessitates the capacity to connect the textual content to one's prior understanding. Every act of comprehension, according to Anderson (1977, p. 369), "involves one's knowledge of the world as well." A schema is a person's organized knowledge of people, things, locations, events, processes, concepts, and pretty much everything else that serves as a foundation for learning (Rumelhart, 1984). Schema theory "explains how knowledge is organised in memory and how these structures affect incoming information,"(Bos & Anders, 1990 p. 49). Schema theory, according to Anderson and Wilson (1986), explains how people's prior knowledge influences comprehension.

There is a strong relationship between critical thinking and reading comprehension. Reading and critical thinking go hand in hand, as is clearly documented in literature. For instance, Norris and Phillips (1987) point out that

reading involves thinking as well as stating what is written on the page. Additionally, according to Beck (1989), "there is no reading without reasoning". Ruggiero (1984) is another researcher and theorist who acknowledges that reading requires thinking. Reading involves thinking in order to create meaning. One of the most efficient methods for improving the notion of reading comprehension is to apply and combine schema theory with the fundamentals of critical thinking (Norris and Phillips, 1987). According to Norris and Phillips, critical thinking offers a way to explain the capacity to resolve ambiguous text by coming up with alternate interpretations, weighing them against knowledge and experience, deferring judgment until more information is available, and accepting alternate explanations. They concluded that the reader's comprehension process involves critical thinking. The ability to think critically about a matter—to analyze a question, situation, or problem down to its most basic parts—is what helps us evaluate the accuracy and truthfulness of texts we read. Baker (2023) refers to it as the sharp knife that, when honed, separates fact from fiction, honesty from lies, and the accurate from the misleading. Critical thinking skills are perhaps the most fundamental skills involved in making judgments and solving problems. Critical readers thus recognize not only what a text says, but also how that text portrays the subject matter. Readers recognize the various ways in which each and every text is the unique creation of a unique author.

As computers are used in classrooms more frequently, researchers focus on using computers to teach students how to read (Aleven, Beal, & Graesser, 2013). The use of computer tools and programmes is the subject of an increasing number of study, however most of these studies focused on drill and practice. But there has been a rise recently in the use of computer programmes and tools to improve understanding (Cristia, Ibarrarán, Cueto, Santiago & Severin, 2012; Cullen, Alber-Morgan, Schnell, & Wheaton, 2014). As a result, using computers to improve comprehension seems promising because of how flexible they are and how well they enable students to master comprehension abilities (Stetter & Hughes, 2010). Using WebQuests, which are websites that give an inquiry-based lesson on a teacher-selected topic, is one approach to take advantage of the flexibility of the Internet (Pak, 2015). A classical WebQuest has always 5 to 6 stages: the introduction, the task, the process, evaluation and a conclusion. In many of the WebQuests, there's also a tab for other resources and links. Students are guided through the teacher-designed, project-specific website through interlocking text pages, which also contain links to other pertinent websites.

Numerous studies have been done on the relationship between WebQuest use and student's achievement. In a study on the effect of WebQuest and gender on writing

achievement in professional Business English, Awada and Ghaith (2015) found that WebQuest enhances students' performance. The study additionally showed a sizable achievement gap in favour of the female students. A study on the effects of WebQuest-based sheltered education on enhancing academic writing abilities, soft skills, and reducing writing anxiety was also conducted by Salem (2022). The study's findings demonstrated that studying in safe internet contexts may be an engaging and inspiring experience. Salem came to the conclusion that WebQuest must be used as a safe online instruction approach for language acquisition.

One important concept in students' academic success is gender. According to Musa, Dauda, and Umar (2016), gender refers to socially taught behavioural patterns that reflect emotional expressions of attitudes that separate men from women. Gender is something that people learn via socialization and is greatly impacted by the culture of the society in question. Tatarinceva (2019) sees gender as a social and psychological experience that affects how differences in people originate and grow. Gender equity continues to be a key issue on a global scale, particularly for academics and decision-makers. It is well recognized that reading motivation and success are systematically correlated with gender (Wigfield, Gladstone & Turci 2016). According to studies (Wigfield, Gladstone & Turci, 2016; Lepper, Stang, & McElvany, 2021), girls tend to have higher reading desire and read more frequently in their free time, which supports their reading accomplishment. Consequently, a large number of research conducted outside of Nigeria show that girls on average have greater levels of reading achievement than boys (Mullis, Martin, Foy, & Hooper 2017). In Nigeria, however, research on gender disparities in reading has produced contradictory findings. Akinwunmi (2017), Amadi (2019), and Oluyomi and Yiljep (2022) all reported that gender had no bearing on students' reading achievement because their individual investigations found no appreciable difference between males and females' reading achievement. This study, which aims to ascertain the effects of WebQuest on students' achievement in critical thinking skills in reading comprehension using gender as one of the variables of interest, is necessary in light of the apparent inconclusiveness of the debate on the influence of gender on students' achievement in Nigeria. Two research questions and three null-hypotheses guided the study. These are:

Research Questions

1. What is the difference in the mean achievement score of students taught reading comprehension with WebQuest approach and those taught with the lecture method?
2. What is the difference in the mean achievement score of males and

females taught reading comprehension with the WebQuest approach?

Hypotheses

$H0_1$: There is no significant difference in the mean achievement score of students taught reading comprehension with the WebQuest approach and those taught with the conventional lecture method.

$H0_2$: There is no significant difference in the mean achievement score of males and females taught reading comprehension with the WebQuest approach.

$H0_3$: There is no significant interaction effect of method and gender on the achievement of students taught reading comprehension with the WebQuest approach.

Method

This study adopted the pre-test/post-test quasi-experimental non-equivalent control group design. 119 300-level students of Prince Abubakar Audu University, Anyigba, participated in the study. The participants were randomly selected through balloting into experimental and control group. 60 participants (28 males and 32 females) constitute the experimental group, whereas 59 participants (22 males and 37 females) constitute the control group. The WebQuests that were used in this study were created by the researcher. They were two pages WebQuest: one for the teacher and one for the students. There are five sections on the student's page. The introduction, which provides background information on the WebQuest, the task, which outlines what the students must complete, the third section is a detailed process breakdown for the students, while the fourth section explains how the students will be evaluated. The conclusion is the fifth section, and it gives the students links to further websites where they can read more about the subject. The teacher's page contains guidelines for teachers using the WebQuest.

The web quest centered on eight stories, and the tasks were designed to test students' knowledge of the reading comprehension competencies. The web quest tasks included learning about the author of the stories, reading the story, unlocking difficulty with context clues, taking notes, inferring, drawing conclusions, recognizing crucial plot aspects, etc. videos on some articles' summaries were also provided. Additional information was also provided, such as connected historical accounts which are connected with the stories. Each narrative has an output that must be provided in response to the text. Making their own version of the story's conclusion, writing essays on the themes of the stories, creating comic strips, writing letters to the characters or the author, creating poster campaigns, putting together power point presentations, creating a story grammar or story pyramid, etc. are some examples of these outputs. The researcher displayed the WebQuest's homepage on the White Board in the English Language

Resource Centre, describing every component in detail. The students then worked in group independently after the researcher's guidance. However, the researcher kept eyes on the students to provide them advice on how to respond to inquiries and deal with technological issues. The instrument for data collection was a reading comprehension test tagged "University Students' Reading Comprehension Tests" (USRCT). The research questions were analysed using mean and standard deviation while the hypotheses were subjected to analysis of covariance (ANCOVA).

Results

Table 1: Mean and Standard Deviation of Students' Achievement in Reading Comprehension using the Webquest Approach

Variables		Pre test		Posttest		Mean gain
	N		SD		SD	
WebQuest strategy	60	42.83	9.52	62.57	6.19	19.74
Conventional lecture Med.	59	40.62	9.89	56.31	9.23	15.69
Total	119	41.82	9.72	59.69	8.32	17.87

The results on Table 1 show that the experimental group has a post-test mean of 62.57 and a standard deviation of 6.19 with a gain score of 19.74, while the control group has a mean score of 56.31 and a standard deviation of 9.23 with a gain score of 15.69. This means that the experimental group achieved higher than their counterparts in the control group.

Table 2: Mean and Standard Deviation of males and females Taught Reading Comprehension Using the Webquest Approach

Variable		Pretest		Posttest		Mean gain
Gender	N		SD		SD	
Male	28	44.19	9.85	59.01	9.79	14.82
Female	32	38.07	8.27	60.76	5.09	22.69
Total	60	41.82	9.72	59.69	8.32	17.87

The result on Table 2 shows that the post-test mean of the males is 59.01 and a standard deviation of 9.79 with a gain score of 14.82, while the post-test mean of the females is 60.76 and a standard deviation of 5.09 with a gain score of 22.69. This means that the females achieved higher than their male counterparts in the WebQuest Approach.

Table 3: Analysis of Covariance (ANCOVA) for Significant Difference in the Achievement of Students Taught Reading Comprehension Using Webquest Approach

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Decision.
Corrected Model	549.507[a]	4	137.377	4.691	0.00	0.24	
Intercept	6480.168	1	6480.168	221.275	0.00	0.78	
Pretest	2.171	1	2.171	.074	0.78	0.00	
Methods	258.243	1	258.243	8.818	0.00	0.13	S
Gender	146.451	1	146.451	5.001	0.20	0.04	NS
Methods * Gender	1.920	1	1.920	.066	0.79	0.00	NS
Error	1727.853	114	29.286				
Total	62609.000	119					
Corrected Total	2277.359	118					

Note: S = Significant, NS = Not Significant and η^2_p = partial eta squared

Table 3 shows the summary of ANCOVA for significant difference in the mean achievement scores of students taught reading comprehension. The result revealed that the F-value for method is 8.81 with the significant value of 0.00. This value of F is significant at 0.05. This is because 0.00 is less than 0.05, that is ($p = 0.00$; $p < 0.05$). Therefore, the hypothesis claiming no significant difference is rejected. Hence, there is significant difference in the mean achievement scores of students taught reading comprehension with the WebQuest approach and those taught with the lecture method. In other words, method is significant.

Table 3 equally shows that the F value for gender is 5.00 which is significant at 0.20. Since 0.20 is greater than 0.05, that is ($p = 0.20$; $p > 0.05$), the hypothesis claiming no significant difference is accepted. On the interaction of method and gender, the results on table 3 show that the F value for method and gender is 0.06 which is significant at 0.79. Since 0.79 is greater than 0.05, that is, ($p = 0.79$; $p > 0.05$), the hypothesis claiming no significant difference is also accepted.

Discussion

The result on Table 1, show that the experimental group performed better than its counterparts in the control group in terms of mean gain score. In other words, those taught using webquest strategy achieved higher than those taught with the lecture method. The result is in line with those of Ebadi and Rahimi (2018), who discovered that using WebQuests in the classroom had a significant and favourable impact on EFL learners' critical thinking and academic writing skills. The WebQuest may have extended their learning experience, piqued their attention, and improved their knowledge of the passages more than those taught using the lecture method, which is likely why the experimental group performed

better than the control group in achievement.

The data on table 2 indicates that the females outperformed the males in terms of achievement. This finding is consistent with the reports of Wigfield et al. (2016), Lepper et al. (2021), and Mullis et al. (2017) who in their different studies held that females performed better than males in reading comprehension. The gender gap in reading can be attributed to females' superior self-control and higher self-efficacy. In general, girls read more frequently and with greater motivation than boys. This could have been the reason for their reading achievement.

However, the result on Table 3 shows that there is no significant difference in the achievement of males and females thereby aligning with the findings of Akinwumi (2017), Amadi (2019), and Oluyomi and Yiljep (2022), which showed that males and females fared similarly in English reading comprehension. With regard to the interaction effect of method and gender, results on Table 3 also reveal that there is no interaction effect of method and gender. This is in line with the finding of Umuna and Amazu (2020) who reported that there is no interaction effect of method and gender on students' achievement in English.

This study has demonstrated the common social dynamics in which both males and females fight for survival in a social environment. The rising gender parity in academic attainment can be attributed to changing gender roles, more female labour force involvement, and institutional and social structures that make education appealing to both males and females (Newman, Groom, Handelman & Pennebaker, 2018). Information and communication technology (ICT) and Internet access has increased, exposing both males and females to language stimuli and role models that is now closing the gender gap that has existed before now.

Conclusion

Given the findings of this study, it can be said that the WebQuest is a beneficial approach for substantial reading activity. The students were happy with it, and they exhibited a greater interest in reading additional English-language texts as a result. Students' independence from the lecturers allowed for the development of autonomy as well. Students had to negotiate the meaning of the text with their peers in order to solve difficulties, discuss viewpoints, and construct it. WebQuest is a fascinating and captivating substitute for teaching reading comprehension. The study's findings also showed that, despite the fact that females performed better than males in terms of achievement, gender was found not to have significant influence on students' achievement just as there is no interaction effect of method and gender on students' achievement in reading comprehension.

Recommendations

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

1. The use of the internet is growing to keep the demand of the society. Language teachers should therefore adopt technological resources as teaching approaches that will help students develop the critical thinking abilities and skills necessary to succeed in the world of work and future job market.
2. Workshops and training should be organized for faculty members and students on the use of digital platforms for teaching to enhance their skills.
3. Language teachers should treat all students equally and provide equal support, regardless of gender, while recognizing and appreciating their distinct differences to aid them in their studies.

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OVERHAULING SENIOR SECONDARY SCHOOL CHEMISTRY CURRICULUM DELIVERY IN THE FACE OF SECURITY CHALLENGES IN NIGERIA.

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Abstract
This paper investigated on overhauling the senior secondary school chemistry curriculum delivery in the face of security challenges in Nigeria. The paper addresses the concept of curriculum, chemistry curriculum, problems associated with the delivery of chemistry curriculum which include insecurities in school, method of teaching, defective curriculum etc. The paper also proffers solutions to problems associated with chemistry delivery in the face of security challenges which include incorporation of technology into teaching chemistry, the use of progressive and representative curriculum etc. The paper concludes that it is imperative to overhaul the delivery of chemistry in our secondary schools in order to meet present day challenges. The progressive approach blended with technology for teaching chemistry was advocated for in this paper, as it focuses on how students learn, it is more of students centered where students freely engage in projects and hands on activities which are important for the teaching of chemistry that is practical oriented. The progressive teaching method produces students that will become innovators, inventors, critical thinkers, wealth creators, entrepreneurs and employers of labour. The researchers therefore recommends that technology should be provided for proper delivery of chemistry in schools, teachers should be exposed regularly to modern progressive and sophisticated tools for teaching chemistry. Schools should devise means on how physical classroom can be transformed to a virtual classroom which can be operated from home.
Keywords: Progressive Curriculum, Traditional, Security and Digital Tools

Introduction

The delivery of chemistry at the secondary school level has over the years not yielded satisfactory results and some of the factors responsible for such results

according to Jimade (2015) have been pinpointed to include the method of teaching (traditional), inadequate use of technology, defective curriculum and insecurity in schools. Apart from method of teaching which is traditional, in recent times schools in the northern part of Nigeria have been soft targets for Boko haram, bandits and kidnappers especially in states like Kaduna, Niger, Zamfara, Borno, Kastina etc. which have resulted to some students been kidnapped, death of students and teachers, closure of schools, disrupted school calendar, absenteeism and underachievement in standardized test like WAEC/NECO. The fluctuation of chemistry results according to Ibrahim and Adamu (2017) in WAEC/NECO for the past eight years and students' perception of the subject is worrisome which may be attributed to fear and haphazard delivery of chemistry in schools. Whereas chemistry as a subject encompasses theory and practice and needs quality time in school for effective delivery as it is an important subject for understanding the nature, composition, properties (physical and chemical) and uses of matter, and the changes matter would undergo under different condition and it is also apparent that chemistry plays a greater role in national development through industries in the world and should be taught in a concrete manner where students become not just scientist on paper but students who become innovators, critical thinkers, inventors and entrepreneurs (Ayodele, 2018).

In 21st century and in the face of security challenges traditional method needs to be replaced with a more functional progressive method alongside the use of digital tools in the teaching of chemistry which is purely a science subject. Progressive method of teaching gives room for usage of digital tools that gives students the freedom to learn by practicing through projects, hands on activities and task. This paper seeks to explore the replacement of traditional method and physical classroom of teaching with progressive method of teaching chemistry and how technology can be used as a substitute for physical classroom chemistry delivery in the face of security challenges.

Concept of Curriculum delivery

Curriculum delivery is the conveyance of contents to be taught which students are expected to learn, be it physical or virtual. It is designed to meet the needs of the range of students within each year level as well as those with disabilities and other particular needs. Teachers use a range of strategies to deliver the curriculum which digitalization is one. There are various forms like the Google classroom, YouTube, WhatsApp, etc. These strategies according to Capita (2015) include the following;

- Knowing the abilities and background of learners.
- Utilizing digital tools

- Usage of up to date teaching materials
- Delivery should incorporate classroom teaching and outbound teaching.
- Corporative learning.

These strategies are systematically put through to ensure that there are no barriers to learning and achieving knowledge in chemistry. Delivery of curriculum should be characterized by clarity of organization, clarity of explanation, clarity of assessment of student practice and clarity of examples and guided practice which forms solid foundation for effective delivery of chemistry. Chemistry as a subject is majorly a practical field of study and for teaching and learning to be established; teaching must be student centered which allows for projects, hands on activities and engagement (Solomon, 2019). The student centered approach which is a progressive way of teaching chemistry is tied to the foundation of Dewey (1938). Dewey viewed the classroom as a social entity for students to learn and problem – solve together as a community. In these classrooms students are viewed as unique individuals, students can be found busy at work constructing their own knowledge through personal meaning, rather than teacher – imposed knowledge and teacher directed activities (Ben, 2012). In the context of this paper; the progressive curriculum and incorporation of digital tools in the teaching of chemistry is of great focus as learning must continue in the face of security challenges.

Chemistry Curriculum

The Nigeria Senior Secondary School (SSS) chemistry curriculum covers three classes, senior secondary classes 1-3 and was developed around four themes which are chemistry and industry, chemical world, chemistry and environment and the chemistry of life (Gloria, 2016).

Summary of Nigeria SS1-3 Chemistry syllabus

Themes/class	SS1	SS2	SS3
Chemical and industry	Chemical and industry	Periodic table, chemical reactions, mass volume relationship	Quantitative and qualitative analysis
The chemical world	Introduction to chemistry, particulate nature of matter, symbols, formulae and equation, chemical combination, gas laws.	Acid – base reactions, water, air, hydrogen, nitrogen, sulphur.	Petroleum mental and their compound iron, ethical legal and social issues.

Chemistry and environment	Standard separation, technique for mixtures. Acid bases and salt water	Oxidation reduction (redox) reaction ionic theory electrolysis.	Topics asterisk below are to be treated at this point to enable students prepare and write their examination towards the end of the term.
The chemistry of life	Carbon and its compound	Hydrocarbon alkanols	*fats and oil soap and detergent giants molecules.

Source: NERDC

Problems Associated with Chemistry Curriculum Delivery

The importance of chemistry cannot be overemphasized as it forms the bed rock subject for all science and science related courses in the tertiary institution as any student wishing to study engineering, agriculture, medicine, pharmacy, nursing etc. chemistry is yet to make any noticeable impact in the nation due to lack of commitment on the part of the government and stakeholders. Several factors have been identified to have be- deviled the delivery of chemistry curriculum (Ibrahim & Adamu, 2017).

1. Insecurities in schools: In recent times the northern parts of Nigeria have experienced chaos and students are targets for ransom, recruitment, suicide bombers and spies. So many militia groups exist and their existence has prevented the smooth operation of schools especially secondary schools in the northern part of Nigeria. The terrorist group Boko haram (western education forbidden) which emerged in the year 2009 has given birth to newer small armed groups like the bandits, herdsmen, kidnappers and all seems to be enemy to secondary schools. According to UNICEF (2018) over 1000 students have been kidnapped in Nigeria. Since the conflict started in northeastern Nigeria nearly 12 years ago, at least 2,295 teachers have been killed and more than 1400 schools have been destroyed. This incessant violence has resulted to closure of schools, disruption of school calendar, irregular schedule of school term and bringing fear to both students and teachers. It has also made the face to face mode of teaching difficult as students no longer feel safe in schools. Studies have shown that when students feel safe and engaged at school, they are more successful in all aspects of life, not just in academics. Unfortunately the atrocities unleashed on school have resulted to fear, irregular school attendance and closure of schools, absenteeism and under achievement in standardized test. For instance, those that passed May/June examination (WAEC) from 2014 - 2020 were as follows 31.28% in 2014, 38.68% in 2015, 52.97% in 2016 and 59.22% in 2017, 50% in 2018, 64% in

2019 and 65% in 2020. The fluctuation of result from 2014 may be as a result of threats to schools especially in the northern part of the country where delivery of curriculum have been heavily interrupted. These challenges have affected and capable of affecting the delivery of chemistry as the subjects demands conducive and safe environment because it needs maximum concentration and requires a lot of practical work and demands that students be present in school for effective teaching and learning. For learning to continue and for effective delivery of chemistry technology must be incorporated for the teaching process where students must not necessarily be in class (Jimade, 2015).

2. Method of teaching: Godfrey (2012) stated that the most common method is the lecture and explanatory method. This is the most used in teaching chemistry. Teachers read notes while learners listen and at times copy down notes. Empirical studies anecdote information shows that there is overdependence on lecture method which is a sharp contrast with the intended learner centeredness of instruction. The lecture method which is a prevailing method of delivering chemistry is currently under threat in schools as schools have experienced a tragic insurgency which has negatively impacted student's access to education and learning. The face to face method of transmitting knowledge has recently been threatened by kidnappers, bandits, Boko haram and herdsmen which have resulted to high rate of out of school children and even those who are at school have not been performing in chemistry. Activities that could enrich the teaching and learning process in chemistry like practical, excursion; tutorials have been halted as schools operate basically to cover schemes and syllabuses without concrete knowledge passed (Biodun,2014). Lecture or explanatory method may be prevailing but recently not a safe and appropriate method of teaching chemistry as students no longer stay in school for fear of kidnappers and bandits, for teaching and learning to continue visual and audio tools should be used to deliver chemistry while students are at home. The problem here is that these tools are lacking in schools. Thereby making the teaching of chemistry that is practically oriented `difficult (Bligh, 2010).

3. Defective Curriculum: According to Ibrahim (2017) the present curriculum in our schools is old and not designed for all round development of the students as the aspect of science and technology which would have created entrepreneurial skills for self – reliance were ignored. Originally curriculum is for value re-orientation and perception change by building students with life skills, poverty eradication thinking skills, entrepreneurship empowerment and attitude refining

abilities but this has been the case in Nigeria. This has given rise to continuous conflicts and all manner of insecurity that have ravaged the education sector. The deliberate targeting, burning and looting of school has resulted into a weak education system, lowered quality of learning , overstretched education facilities, poor design and implementation of curriculum. Poor implementation and delivery of curriculum has transformed the country at large to mere consumers rather than producers. The curriculum for chemistry is that which is overloaded with so much notes and theoretical teaching and at secondary school level, practical forms the larger part of the curriculum but due to insecurities, practical classes are lacking in most schools making chemistry teachers only wait for examining bodies to send practical specimens. This is the only time practical is taught in a rush which has contributed to low achievement in chemistry in standardized test.

4. **Absence of laboratories**: Avi (2012) stated that apart from the classroom, charts, videos and radio, the laboratory is a major facility for carrying out practical lessons in chemistry. The absence of laboratories in schools hinders project based activities or hands on activities with chemicals. The teacher is forced to teach chemistry in an abstract mode which results to hatred for the subject and fluctuation in pass rate in standardized examination like WAEC and NECO. According to the study carried out in 2006 by America's laboratory report on secondary schools revealed that laboratories are designed to promote a number of goals for students, most of which are also the goals of science education in general. The body also highlighted some goals of laboratory experiences:

a. Enhancing mastery of subject matter. Laboratory experiences may enhance students understanding of specific scientific facts and concept and the way in which facts and concepts are organized in scientific discipline.

b. Developing scientific reasoning: laboratory experiences may promote a student's ability to identify questions and concept.

Ben (2012) averred that as important as laboratory is to teaching of science, especially chemistry it is lacking in our schools. According to UNICEF (2018) conflicts especially in the north has had devastating impact on school infrastructures and the laboratory is not left out. The few ones erected are no longer available as schools have been targets for Boko haram, bandits and herdsmen. From 2009 to 2018, 611 teachers were killed and 910 schools damaged laboratories inclusive. More than 1500 schools were forced to close and some 4.2 million children in the northeast are at risk of missing out on education.

Hundreds of girls have been abducted, some even in their schools, which are meant to be safe zone. The attacks on schools, communities and education itself are tragic consequences of a protracted conflict that has left a generation of children traumatized. This has affected the delivery of chemistry in our schools as structures meant for carrying out practical lessons are no longer in existence.

Solutions to Problems Associated with Chemistry Curriculum Delivery

1. **Representative/ Progressive Curriculum**: Delivery of curriculum especially in chemistry should be progressive. It should be one packed with projects, hands on activities and based on what students can achieve in the laboratories rather than sitting long hours for abstract transmission of the subject. The representative and progressive curriculum will not only concern it- self with academics but design to promote national security as it should inculcate desirable human traits like honesty, sincerity, hard work, punctuality, productivity, innovation, patriotism, selflessness, brotherhood, friendship etc. Curriculum should inculcate lifelong skills and know- how, thereby liberating the individual from poverty and want. Defected curriculum is linked to poverty and poverty is one of the main factors of crime whether it is terrorism, banditry, kidnapping and militancy. According to American university in (2020) progressive curriculum which is a response to traditional and defected curriculum allows students to be creative and passionate about what they learn. Teachers do not simply teach students information and expect them to memorize it and get perfect test scores. Instead students are engaged in hands on learning through projects, experiments and collaboration of peers thereby grooming students to become self- reliant, entrepreneur and innovators. Ben (2012) reported in his study that teaching chemistry or science subjects may require more than just the progressive approach; he stated that the curriculum should represent the students' background, ensuring that students see themselves in it. He further stated that curriculum science in the students' way of life (culture) by adding narratives to make teaching more relevant to students. Teachers need to teach chemistry using relevant examples of our very own scientist. This improves value for ourselves and projects our education as one of patriotism, unity, peace and respect for one's nation.
2. **Students centered method of teaching**: A method is a procedure or a technique used in passing contents to students in the classroom. Lane (2016) reviewed several studies on student centered learning and found

that overall it was an effective approach. A six- year study in Helsinki, which compared traditional and activating instruction, found that the activating group developed better study skills and understanding. It is believed that in the 21st century methods used to pass contents should be students centered, engaging and design in such a way that students become critical thinkers as the world needs innovators and scientist to solve problems. Methods that can be engaging include:

a. **Laboratory method:** This method allows for first-hand experience as students are given the opportunity to gain some experiences with phenomena associated with the subject. Students actually learn by doing rather than by observing the experiments. In the face of insecurity where school infrastructures are destroyed teachers can deliver chemistry using simulations and virtual laboratory. In states where it has been inevitable but to shut down schools, the teaching and learning process must continue. It is not enough to just teach chemistry theoretically online but the process can be supported with practical sessions through simulation which allows chemistry move from physical classroom to virtual space. The virtual chemistry laboratory allows students link chemical computations with authentic laboratory and also exposes students to hundreds of standard reagents and how reagents can be manipulated in a manner that it resembles the real laboratory (Chandana & Chandrashekher, 2014).

b. **Project method:** This method was developed by W. H Kilpatrick in (1918) and was perfected by J. A. Stevenson (1908). The idea of this method is students trying out task themselves. The essence of this method lies in the fact that a group of students do a purposeful task. Students undertake the activity in a group or individually over a period of time. It is graded by writing a report or displaying product of the activity. This method can thrive even as classroom is disrupted by all manner of insecurities. Students can work on task given from home which is a lot safer than school.

c. **Problem Solving:** Yew (2017) stated that science subject is one of the important subjects in school education. However, the traditional methods are challenged for their inability to foster critical thinking and holistic learning environment among students. Science subject like chemistry must develop science process skills where

students can measure, process information, classify, analyze and formulate conclusion. He further reported that creativity is essential in problem solving as children learn by working on problems. This method develops scientific process skills, brainstorming skills and groom students to be innovators, developers, creators etc.

3. **Assessment:** Against the backdrop of incessant attacks on schools which has severely endangered the security of lives and properties, consequently, classroom and take home task should be designed in such a way that students can operate less in school and more virtually which should increase the creativity of students who are committed to it. The Google classroom, doddlechem, adobe spark video, quizlet, socrative, khan academy etc. are digital tools that can be used for assessment in a progressive manner. These tools concern itself more on mastery rather than performance and are student centered platforms that emphasize more o projects rather than attempting cumulative examination. The importance of practical in chemistry is reflected in standardized examination like WAEC where practical takes 35%, objectives questions takes 25% and theory 40%. The practical takes almost half of the total score; this breakdown proves that chemistry should be more activity based. West (2019), stated that progressive assessment provides evidence that the students has more consistently reached the desired levels rather than the traditional methods of evaluating based on snapshot of ability at a given point of time. These assessments successively select questions and activities for the purpose of maximizing the precision of the exam based on what is known about the examinee from previous questions or activities. He further revealed that assessment are meant to bring about granular insight into learner's abilities, active participation, self-assessment, improved retention of concepts, successful outcomes etc.
4. **Incorporation of Technology in Teaching Chemistry:** Technology has been used as a substitute or digital instructor to deliver curriculum in schools. With the recent threats to education by Boko haram, bandits and kidnappers even the pandemic have necessitated the use of technology to teach and learn even when students are not in the traditional classroom setting. For the delivery of chemistry to remain relevant and concrete even in the face of security challenges, contents are delivered in various modes which include:
   a. **Online Teaching:** It is the process of educating others on virtual

platforms. This type of teaching involves live classes, videos, webinars, conferencing and other platforms like the zoom, Google classroom, YouTube etc. All these platforms can be used to transmit or deliver chemistry effectively and students do not necessarily need to be in class. Online teaching is student centered methodology that increases students' interest and participation in virtual classroom. Online teaching is deeply rooted in progressive philosophy as students manipulate gadgets on their own. The online tools are powerful platforms for teaching chemistry like Google app for education which has a script called Doctopus used for any paper (note taking) and editing privileges for students. The practical aspect of the subject can also be taken care of through simulation and videos, ChemDoddle mobile etc. these tools will allow students learn chemistry effectively even from their homes (Taylor, 2011).

b. **Blended Mode:** In the face of insecurities the disruption of school calendar, relocation of students from most affected areas and closures of schools are inevitable. As much as schools are threatened, teaching and must continue. The blended mode of teaching is effective for delivery of chemistry as it combines the best parts of established classroom practice with digitally enhanced strategies. It combines both of best world method of teaching. The students may not necessarily spend so much time in school before they learn. The blended mode of learning allows for digital and face to face teaching which may alternate according to fixed schedule. Students may take one class in school and another one entirely online at home (Ogundele, 2007).

Conclusion

Education cannot thrive in the presence of chaos and unrest. It is important to overhaul the delivery of chemistry as the face to face mode of delivery is threatened by bandits, kidnappers, Boko haram and herdsmen. Overhauling the delivery is necessary as it is meant to deliver broad based education that will bring about development of mind, soul and body and in the development of appropriate attitudes, skills and abilities and competencies to co –exist with and contribute to the development of the society. One way to curb insecurities in our schools and the nation at large is to approach the teaching of chemistry in an entrepreneurial way where students where students who are committed to it

become self- reliant. This notion was supported by the Global Peace Index Rating in (2013) which stated that most civil and social unrest activities in Nigeria are carried out by people who are not engaged in profitable ventures and enterprise. This has led to poor rating as Nigeria is ranked 148th out of 162 nations. For the delivery of chemistry to remain relevant and for its continuity, overhauling the delivery of the subject is necessary for proper curriculum representations, moving from physical classroom to a safer virtual classroom, from traditional or teacher centered to progressive or student centered approach blended with digital tools as this will spur students' interest, engagement, embarking on projects and improve pass rate in standardized test.

Recommendations

1. Private school owners and government should provide adequate technological materials for a successful and effective chemistry delivery.
2. Teachers should be retrained on how to handle some materials in the virtual space that will bring about more practical oriented chemistry digitally.
3. Schools should devise means on how more teaching will be done from home.
4. There is a need to design chemistry curriculum to meet our immediate problems in Nigeria.
5. Parents should encourage their wards by providing devices that will be used for digital delivery of lessons.

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CURRICULUM DELIVERY AND SECURITY CHALLENGES IN TERTIARY EDUCATION IN NIGERIA

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Abstract
This paper examined the issues of curriculum delivery and security challenges in tertiary education in Nigeria. The critical security crises confronting Nigeria was identified with different names, such as: kidnapping; Boko Haram insurgency; socio-economic agitations; boundary disputes; cultism; corruption; robbery including pen robbery; looting of national treasury, election crises; Herdsmen brutality; including ethnic rivalry and religious pluralism. Failure of education poses distinct threats to national security. It is accepted that education helps the society in the development of new attitudes, values, knowledge, skills and techniques, but little is said about how these values are actually developed and included changed in individuals; how values might be communicated; and how educational processes within formal and non-formal curriculum might promote value development. It was concluded that teacher education is paramount and significantly associated with quality of values and ethics students acquire and this highlights the need for teacher training and retraining and courses to include ethical philosophy subject, and of course the restructuring of curriculum at all levels of education to re-organize, strengthened and direct the delivery of functional, moral and value education in the broadest possible sense.
Keywords: Curriculum Delivery, Security Challenges, Tertiary Education Curriculum

Introduction

Security basically refers to the totality of measures undertaken to ensure protection of lives and tangible assets such as landed property, and even protection of vital data of various organisations in the country including government establishments. In line with this explanation, Odekunle (2012) succinctly averred that security is a protection or defence of people against all kinds of victimization including protection from external militancy attack, economic want, poverty, illiteracy, disease or ill-health, political exclusion,

social exploitation, criminality act, etcetera. In order words, security could be said to encompass the socio-economic wellbeing of the people which enables the coexistence in peace and harmony of all agents of development, and enhances the ability of each to function without hindrance. However, Oyegun (2012) described the security situation of Nigeria as a litany of unfulfilled dreams and disappointments. He observed cases of unrealized potentials, poverty in the mist of wealth, total lack of inspiration held for ransom by insecurity due to incessant crimes and abject poverty. Consequently, various symptoms of social disorganization and vices have become overt and easily noticeable with: prostitution in urban centres; drug use/abuse and associated ailments; direct and indirect child abuse; child trafficking; severance of disregards for community values; general indiscipline, absence of law-abiding culture; communal strife, violent disorder; and ethno-religious conflicts. All of these have generated into insecure environment and has called for the need to re-organise, strengthen and re-redirect the delivery of functional, moral and value education in the broadest possible sense in our education system in such a manner as to effect the younger generation positively to build their level of consciousness as they seek to make the choices that will determine their future. This is evidenced in Levinc (2010) conception of education as a major communicator of ideal values, moral, attitudes, and norms.

On this note, therefore, it is pertinent to use education to reinforce positive nation's views or to discourage and even change negative ones. Ultimately, this process could concisely occur through the formal and non-formal programmes of school, as well as in the informal extra-curricular moments, which should be conveyed by both content and practice. Fundamentally, the major part of this practice is the restructuring of curriculum, and the status accorded to different fields of study. It is evident that in sovereign independent state, men and women are trained, sustained and nurtured through education to serve in its security and intelligence out fits. In *99*
Europe and America, for instance, such men and women are selected from the best and the brightest citizens, who are endowed with keen and subtle intellect, (Esiemokhai,2015). The implication is that graduates with the best grades are deployed; not those who get ranks by the federal character formula. It also culminates into recruiting into their defense and military, intelligence outfits, due to unscrupulous assessment of the recruit's educational background, intellectual sharpness, smartness and patriotism. Ultimately, nurturing critical thinking is a key component of education.

National Security Crises As It Affects Curriculum Delivery

According to Ozoemena (2014), the critical security challenge confronting Nigeria is identified with different names such as kidnapping, Boko Haram, socio-economic agitations, boundary disputes, cultism, corruption, all manner of robbery including pen robbery, looting of the national treasury by some public officials, disorder and anarchy that go with the periodic elections, and aspects of organised criminality involving Herdsmen brutality. Furthermore, apart from ethnicrivalry threating the sustainable development, stable democracy and security of Nigeria, religious pluralism has also culminated in many crises and has shaken the country to its root. Notwithstanding, some of these crises always result in destruction and looting of properties worth billions of Naira and significant loss of lives as well as social dislocations among the affected population. Relative to this, Nwagboso (2012), averred that the linkage between national security and development can never be trivialized because curriculum delivery is a function of an enabling environment.

Consequently teachers' education is perceived paramount and has been globally accepted to be significantly associated with the quality of values and ethics students acquire. This has called for: The need to ensure the continuity of innovation and total restructuring of curriculum to reorganise, strengthened and re-direct the delivery of moral and value education in the broadest possible sense in our education system and help teachers to learn to focus attention on the values that underpin these outcomes and develop strategies for making them manifest in their teaching. Many successful models of teacher preparation and development that have been shown to boost teacher effectiveness and retention should not be ignored; workshops, in-service training and short courses should be designed to train teachers to enable them have the values and ethics students should acquire or that should be developed in learners. Again, teachers need to be trained on how to bring the content, the pedagogy and structure of teaching peaceful values, morals, citizenship and skills acquisition for the anticipated essential learning outcomes such as communication, problem-solving, aesthetic expression, technological competence, personal development and citizenship. Furthermore they should be trained on how to utilize low-cost materials in the immediate environment of the learners, and how to integrate information and communication technologies (ICT's) into pedagogy. These measures will help catch the attention of young learners and hence increase their capacity to create change in their environment.

Government policy should be premised on the rational pursuit of restoring the current educational arrangement to ensure that youths/adolescents

legally have free and compulsory education up to the age of 18 years with good legislation made available to enforce its implementation and any other excellent provisions put in place, if possible, formulate a set of ethics or codes of conducts for parenting. Parents and homes have a major responsibility for the welfare of the child at such, the well-being of the child can best be served by a strong partnership between schools and the community resources (NGOs, clubs, religious organizations etc) which should be part of teacher education programmes within and outside the classroom to help in evolving viable options to the solution of education of the adolescents because early adolescence is a critical phase of development, a period of accelerated growth and change: a time of opportunity and risk. Hence, behaviour patterns adopted in these years can have lifelong consequences, both positive and negative such as: increased dropout rates; teen pregnancy and motherhood; substance use and abuse; and life-long violent behaviours.

Service delivery in this paper is considered as the strategies universities in Nigeria employ in carrying out their functions. As earlier stated, the National policy on Education has it that tertiary educational institutions (Universities) shall pursue their goals (as stated in the policy) through: teaching; research and development; serious staff development programmes; generation and dissemination of knowledge; maintenance of minimum educational standards through appropriate agencies; and dedicated services to the community through extra-mural and extension services. Nevertheless, these services are being rendered. But what determine the extent of success are therefore the techniques (strategies) of carrying out these services. This may be the reason why the Nigerian Policy on Education recommended that all teachers in tertiary institutions should be required to undergo training in the methods and techniques of teaching. The concern of this paper therefore, is that many Universities in Nigeria do not follow the trend of change in the society in rendering their services. This is evident in the findings of the study carried out by Onuoha (2016) on the utilization of Information and Communication Technology (ICT) in the training programme of teachers at the University of Nigeria, Nsukka (UNN). The findings showed poor use of ICT in the training programme of teachers at the university like UNN in this knowledge based age. The traditional method of teaching, research and dissemination of information has fallen below the need and standard of a society like Nigeria where education is expected to be the main vehicle of development. In fulfillment of Nigeria's commitment to Education For All (EFA) as declared in Jomtien, Nigeria is attempting through the UBE to implement the EFA goals. Nigeria is expanding and inspiring early child care

and development, ensuring that by 2025, all children particularly girls, children in difficult circumstances and those belonging to ethnic minorities have access to a completely free and compulsory primary education of good quality; eliminating gender disparities in primary and secondary education by 2005 and achieving gender equality by 2025; and improving all aspects of the quality of education and essential life skills. It that these goals will help Nigeria achieve education — related Millennium Deve1opmeit Goals (MDGs). The UBEP objectives for providing basic education for all have been articulated thus,

> The provision of free, universal basic education for every Nigerian child of school-going age; ensuring the acquisition of 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, reducing drastically the incidence of drop-out from the formal school system through improved relevance, quality and efficiency; - developing in the entire citizenry a strong consciousness for education and a strong commitment to its vigorous promotion. (UBE, 2004; P.6)

From the UBEP objectives, the researcher is of the opinion that provision of free universal education, acquisition of appropriate levels of literacy, improved relevance, quality and efficiency will help in achieving our curriculum delivery and security challenges in our tertiary education.

Acquisition of life skills, gender equity and equal access are concerns embedded in all these goals. With clearly articulated goals and objectives, the next stage becomes the execution of the goals and the service— delivery that has been positioned for the attainment of the goals and objectives. The 6— 3 —3 —4 educational system now revised to 9—3 —4, allows for 9 years of basic education for all (comprising of 6 years of Primary education and 3 years of Junior secondary. school), 3 years of senior secondary school and 4 years of tertiary education. Preschool education is recognized. Nigeria is also concerned about the removal 'of barriers to educational opportunities to ensure equity and access to all sub-groups such as nomads, fisher folks, illiterate adults, persons with special needs and street children. The regular school system is the only location of education service delivery now available even for children with special needs. All efforts are concentrated in regular schools for children and youth. They operate with government approved regulations, curriculum and examination bodies. Are the current service delivery modes optimized such that the educational goals of this country will be realized? There could be divergent reactions to this question but a government document writes that; “The system emphasizes theoretical knowledge at the expense of technical, vocational and

entrepreneurial education. School curricula need urgent review to make them relevant and practice oriented" (National Planning Commission, 2005, P.34). Could this be an indication that the service delivery modes need to be complemented? Because of clear-cut subject demarcations, number of subjects offered in schools, it is not always possible to schedule certain aspects of education specified in the national goals and objectives, into distinct subjects in the school time-table. Areas such as acquisition of appropriate life skills, abilities and competences, entrepreneurial education, therefore continue to be neglected.

The Role of Tertiary Education In National Security

Teaching and learning in schools are expected to be in line with the demands of curriculum innovation. On this note, Obanya (2013) explained that team building, teacher empowerment, delegation of authority, garnering of support for schools programmes, use of information and increased community participation in the provision of curriculum resources are parts of curriculum innovation process and could be seen as a process of influencing men and women to acquire the many physical, moral, social capabilities and the values of the community demanded of them by the society into which they are born and within which they must function. The question that should be put across is "Why is national security an education issue?" It should be widely accepted that educational failures pose five distinct threats to national security: threats to, economic growth and competitiveness; Nigeria physical safety; intellectual property; Nigeria global awareness; Nigeria unity and cohesion. National security, therefore could be said to be closely linked with human capital; and the human capital of a nation could be said also to be as strong or as weak as its public schools.

Similarly, education is expected to help preserve and refine society so that it will be a congenial place for individual members to live and work happily in peace to ensure sustainable development, security, and stability of the nation. Thus, school is seen as means to familiarize members with physical features of the society together with the cultural patterns and practices, religious differences, political atonement, and also means to communicate the effect of these on individuals' behaviour and competences. On this premise, it could be equally deduced that education helps the society in the development of the new attitudes, new values and new techniques demanded in the new order. Unfortunately, what most often is said about values in education often talks about a list of the desirable values in students that should be promoted, for instance, there is always phrases like "these are values to be taught", and "values

need to be inculcated", but little is said about how these values actually develop and change within individuals, how values might be communicated, and how educational processes within formal and non-formal curriculum might promote such value development. In this regard, Mijah (2014), succinctly pointed out that teacher education is vehemently perceived as utmost crucial and has been globally accepted to be significantly associated with the quality of value and ethics students acquire. This is so because the educators (teachers) stand in the interface of the transmission of knowledge, skills and values, and, often regarded and accepted as the backbone of education system.

In addition, Igbokwe (2013) maintains that nationally and locally, education systems should insist on professional development opportunities for in-service teachers to enhance their skills and knowledge in relation to the desirable values the schools need to inculcate in learners according to the contextual needs of emerging society. Esiemokhai (2015), attributed the historical attraction of many immigrants to the United States from around the world to the 'United States opportunity of obtaining top-rate education'. In line with this contribution, it could be seen that a highly educated workforce increases economic productivity and growth. This growth is necessary, it could finance everything else that guarantees a much better national security that could make a nation a desired place to live and a model for other countries.

Tertiary Education challenges in curriculum delivery

The many education issues that have serious impacts on the national security and sustainable development of the nation include:

- **The problem of relating the curriculum to national manpower needs:**

The introduction of vocational and entrepreneurship programmes into the curriculum at various level of education in Nigeria is a welcome innovation. However, there is always constant rush to the academic grammar schools, while enrolment in vocational schools, agricultural institutes and trade centres is correspondingly poor. The fact remains that the grammar school continue to flourish because they are highly recognized and patronized, but, liberal education alone has failed to equip the recipient with requisite skills and attitudes for leaving a productive life. Consequently, graduates of our institutions of higher learning have been populating the crime world due to their inability to secure meaningful employment upon graduation. It, therefore, follows, by a simple logic, that if a nation bequeaths the right type of education to its citizens, the citizens will not turn against their father land. Relative to this, Daily Sun (2013) reported the former minister of education, Professor

Ragayyatu Rufai as having identified reform of the education system as the solution to the security challenges confronting the nation; as she suggested a total overhaul of the curriculum at all levels of education with a view to providing its recipients broad based education in the development of the mind, soul and body; and in comprehending the environment, development of appropriate attitudes, skills, abilities and competences to co-exist with and contribute to the development of the society.

However, this calls for a synergy between liberal education, vocational and entrepreneurship education and the intensification of the emphasis on vocational and entrepreneurial education to equip graduates with occupational survival skills. The present global economic crises and rising waves of unemployment have greatly emphasized the need for functional entrepreneurship and vocational education. The unfortunate scenario is that the mismatch between the jobs that students are preparing for and jobs that are available or projected to grow is increasing; this is the primary driver of the discrepancy and a challenge to national security.

- **Issues of Standards for the preparation of the teachers:**

The questions that should be pointedly asked are:

How do teacher education institutions prepare teachers to carry responsibility, exercise initiative to be leaders, and face professional and civic problems with courage?

How do teacher education institutions really prepare teachers to think critically about important civic and national problems (security as well as about professional problem)?

How do teacher education institutions really educate teachers to a broad knowledge of nation/world problems?

How do teacher education institutions really educate teachers to have a broad knowledge of national security challenges?

The summary of these questions begging for answers is, 'what manner of education do teachers receive and what retraining opportunities are available for them to equip them for the task assigned to them in the National Policy? The relationship between teacher education and the promotion of security and national sustainable development must aims at integrating values, activities, and principles that are inherently linked to security and national sustainable development into all forms of education and learning. This aims at ushering a change in attitudes, behaviours, and values to ensure a more sustainable future in social, environmental, economic, peace and security. How are the standard of teachers developed to help them learn to focus attention on the values that

underpin these outcomes, and develop strategies for making them manifest in their teaching?

If the national aspiration of using "education as an instrument per excellence for effecting national sustainable development and national security" is to be achieved, the basic form and structure of teacher education must be reviewed to accommodate all the training required for the teacher to be efficient in the promotion of national security and sustainable development through education practices in the school. This affirms Tahir's (2016) comment, during the first public lecture by faculty of education of the National Open University (NOUN), Abuja; 'the National Teachers Institute (NTI) failed in the massive training of teachers by sidelining the Universal Basic Education (UBE) reform policy launched in 1999 through Open Distance Learning'. At this juncture, he admonished the country to contend with the fatal policy collapse because teachers produced are not knowledgeable enough to deliver the restructured curriculum. Unfortunately, Universities/Faculties of Education have been guilty of contributing to the over production of teachers through their accrediting of dubious institutions and programmes; demonstrating more concern to increase income than quality and professionalism.

- **The Issue of the Poor State of the Nation's economy and financing of educational system**

The problem of educational development in Nigeria today is that of providing funds for the implementation of government policies on education and carrying out curriculum innovations in various disciplines and at various levels of education, for instances, many schools have not gotten adequate supply of equipment and personnel, particularly for the teaching of such subjects as introduction technology. Curriculum innovation has not gotten adequate attention and sponsorship by government because funds are not usually available for instance, to introduce new curriculum. Dike (2014) remarked that it is not enough to produce curriculum, it is even more important to put in place machinery that will ensure that its ideals are realizable through effective classroom practices. For instance, even though the implementation of the Revised 9-Year UBEC has commenced systematically in Primary 1 and JSS 1, it is known (Abakpa, 2015; Akpan, 2014; Okpala, 2013) that the structures and appropriate activities that foster effective implementation of the curriculum are either inadequate or lacking in Nigerian schools. Foremost among the myriad of challenges of Basic Education in Nigeria are the issues of teacher quality and development, lack of enough specialist teachers; dearth of relevant support materials for teachers and inadequate supervision and mentoring of teachers.

This is also affirmed by Omar (2014), who stresses that the success of any educational programmes depends to a large extent on effective implementation strategy, confirming also that the national objectives of education are laudable in Nigeria, but their realization is constrained by poor implementation strategy largely due to inadequate fund.

- **Issue of Political Interference**

Political interference is largely responsible for misuse of human resource management in education. Political parties often use many teachers as their party staff and these teachers also participate willingly in politics, however, most teachers who become very close to political leaders have records of misconducts and unethical behaviours such as irregularity in class teaching, becoming absent from the school without taking leave. Furthermore, political interference attempt to influence decision making regarding the recruitment and transfer of teachers, the resultant effects are favouritism, nepotism and bribery as major types of misconduct in teacher' appointment, posting and transfer. The implication is that the moral and ethical commitment of teachers gradually decrease and erode over the years due to political interference. The most striking is the alarming lack of political education, this explains why electoral frauds pose a major challenge to democracy in Nigeria and by implication posing threat to security of the nation. Sequel to this, the election process itself has become usually taunted with observable manipulations and in some cases, heartrending violence perpetrated by able-bodied youths' employed' as armed thugs.

- **Issue of Integrating National Security Concept into Curriculum Lifestyle**

According to Levine (2015), values are infused only through those channels where it can be most effective in affecting behaviour. The viewpoint here is that the interface between the school and the child or young adult learner is organised at several levels so that there are pathways that lead into the learning life of the child at school. Each of these pathways, weather classified as curriculum, core curriculum, or extra-curricular, is capable of being developed into an effective enigma for promoting character and values. Such innovative curriculum could help build in learner an anti-corruption mindset at an early stage of life. Therefore, infusing civic education into the curriculum offers an array of extra-curricular activities; and structuring the school programme environment and climate so that students/participants are able to 'live what they learn'. This requires also the guidance of competent teachers. What the teachers know or the content mastery is a powerful determinant of how much and how well the students learn; hence teacher's recruitment and retention is very paramount. The

role of teacher education in promoting national security and stability cannot be over emphasized, it is indeed significantly and positively correlated with students' learning outcome. Lumpkin (2018) pointed out that besides the intellectual development reinforced by the universal standardization, there should be a call for a moral progress which would help students become human beings capable of virtuous acts, and remain firm in various streams of modern pressures.

- **Issues of Enhancement and Participation of Disadvantaged Areas and Groups in Nigerian Education:**

Education has been accepted as the greatest force that can be used to forester national unity, self-reliance and socio-economic development, (Nwagwu, 2018). The disadvantaged group in this context include handicapped groups, discriminatory-target groups, neglected and even underdeveloped groups. Philosophy of education states that a 'society is a sub-community whose members are socially conscious of their modes of life and are united by a common set of norms and value', (Okeke, 2013). The above explanation shows that these set of people are members of the community but are functionally not members of the society because they do not know their right, duties and obligations as full members of the society. On this premise, it could be said that as the country becomes more industrialized, modernized and urbanized, the number of orphans, destitutes, beggars, and illiterates will increase, and unless the nation brings them into the mainstream of societal life through education, many might become deviants, and criminals in the society, hence the cause of security challenges today.

Similarly, there are certain cultures and beliefs that militate against the full participation of certain categories of people in the education system; worse still, some of these groups prefer to live by begging for alms, roaming aimlessly along the streets and indulging in petty crimes and other deviant behaviours in preference to being restricted within the school walls where they erroneously imagine they might be treated like prisoners in school environment. Even though, Nwagwu (2018), conceded that these groups have little or no excuse for failure to catch up with other groups in the country but their unequal educational opportunities and the resultant achievement gap have a direct impact on national security. It should be noted also that large, undereducated swaths of a population damage the ability of a nation to physically defend itself, protect its secure information, conduct diplomacy, and grow its economy. Unfortunately, with income inequality and an increase in poverty due to economic recession, young people born to poor parents are now less likely to perform well in school and

graduate from schools than their better-off peers, and they are increasingly less likely to rise out of poverty. This trend not only causes a nation's dream to appear out of reach to more citizens but also breeds isolationism and fear. The unrelenting gap separating peers from peers also renders a nations dream off limits to many young people, this inequality may have a long term effect also on nation's culture and on civil society with its attendant security crises.

- **Issue of wide spread absence of teaching and learning culture**

Onwuka (1996), pointed out that hidden curriculum of the school consist of norms and polices that collectively give form and meaning to a wide range of behaviours. This explains why the final component of moral functioning is moral action. Sometimes, students may possess the necessary sensitivity, judgment, and motivation to act rightly, but, they may not possess the needed skills and know-how to do so, for instance: resolving conflicts with others; challenging bias; taking initiative to start or even lead good works; are not easy tasks. All of these call for school governance structures, disciplinary procedures, allocation of rewards, and norms of teacher-student interaction, since all communicate morally laden values. Again issues of fairness, due process, equal opportunity, respect for differences, and equity in distribution of scarce resources and rewards permeate the education system; these factors should not be ignored.

- **Lack of Appropriate Framework in Civic Education:**

One of the earliest goals of the first public schools was to create an active and engaged citizenry, however, too many private and public schools have stopped teaching civics and citizenship, thus, leaving students without knowledge of their own national history, traditions, and values. Curriculum designers have also largely failed to design appropriate framework to help students become aware of other cultures in Nigeria or the world. This leaves most of them unable to describe how laws are passed, unfamiliar with landmark, Supreme Court decisions, and unsure of the functions of the Nigerian Constitution or the Bill of Rights; all of these are threats to national security. Not only do Nigerian children know little about their own country, they also cannot understand or communicate with their peers within the country due to insecurity. Nevertheless, Orikpe, Ephraim, and Azubike, (2013), noted that 'History is a light that illuminates the past, and a key that unlocks the door to the future'. Nigeria history becomes imperative even from early stage of child's education. As students get imbibed in other people culture in Nigeria, it could enable them have sense of believing in the possibility of a united Nigeria as they aspire for good statesmanship, patriotism and loyalty to the nation.

Recommendations

- Curriculum should be related to the National manpower needs by total overhaul of the curriculum at all levels of education with the view of providing its recipients broad based education in the development of the mind, soul and body, developing appropriate attitudes, skills, abilities and competencies to co-exist with and contribute to the development of the society.
- Standardized preparation of teachers through teacher education as an instrument for excellence must be reviewed to accommodate all training required for the teacher to be efficient in the promotion of national security and sustainable development through education practices in the schools.
- The issue of poor state of the nation's economy and financing of education system should be tackled by adequate supply of equipment and personnel for the teaching of each subject such as introduction technology.
- The issues of political interference influencing decision making regarding recruitment and transfer of teachers through favoritism, nepotism and bribery should be eradicated as they are causes of misconduct in teachers' appointment, postings and transfers.
- Election process should not be taunted with manipulations, violence perpetrated by able bodied youths employed as armed thugs.
- Adequate security concepts into curriculum lifestyle between the school and the adult learners should be organized so that there are pathways that lead into the learning life of the child at school.
- The disadvantaged areas and groups in Nigeria such as the handicapped groups, discriminatory target groups etc should be taken care of by the nation by bringing them into the mainstream of societal life through education, to avoid security challenges caused by neglect.

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Relevance of the Security Education Contents of the Basic Education Curriculum to Contemporary Security Challenges in Nigeria

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Abstract
Security, as we all know is everybody's business. There is the need to catch the children young in order for them to be fully prepared to overcome any security challenge they may encounter in future. In view of this, the paper examines the relevance of the security education contents of the Basic Education Curriculum to contemporary security challenges in Nigeria. The paper suggests the duties and responsibilities of a child in relation to personal security, among others. The paper goes further to provide viable suggestions that could further enhance security awareness based on the rising security challenges in the country.

Introduction

Security can be defined as the absence of danger. It can be said to be synonymous with safety. Security of lives and properties of citizens is one of the primary objectives of government. The maximization of children's potentials as well as their development in all spheres is hinged to a large extent on the peace and security of their environment. It is important that the home environment and the society at large are safe and conducive for any meaningful learning to take place. The social, economic and political upheavals in Nigeria have underscored the need for the provision of Security Education.

The country desires closer cooperation, improvement in the quality of life, respect for the rule of law and human rights and peaceful co-existence among communities. The overall philosophy of the nation includes living in 'unity and harmony as one indivisible, indissoluble, democratic and sovereign nation founded on the principles of freedom, equality and justice'.

In line with this, the National Policy on Education (NPE) provides the following as one of the objectives of Basic Education:

> "ensuring the acquisition of the appropriate levels of literacy, numeracy, communicative and life skills, as well as the

> ethical, moral, security and civic values needed for the laying of a solid foundation for life-long learning", (Section 2, 11e).

According to Ekhomu (2009):

> 'The point is that individuals, companies and government agencies are all responsible for providing security at various levels, using various approaches and strategies. The first step to getting secured is not about knowing the academic definitions of the word 'security' but to acquire a state of consciousness known as security consciousness and a state of awareness known as security awareness" (Pg xiv).

The recent incidences of bombing, kidnappings, abductions, rape, armed robbery attacks and militancy across the country are evidence of the security challenges facing the country. Other sources of danger and insecurity are shootings, murder, human trafficking, cultism, civil disturbances, chemical attacks, arson, fire outbreaks, accidents, piracy, terrorism, burglary, theft, assault, political thuggery, violence and internet fraud.

There are many factors that could be responsible for insecurity in the country; one of such is drug abuse. According to Umunnakwe et al (2014), some of the causes of insecurity challenges could be linked to: communication breakdown between parents and children, lack of parental care, peer group influence, low self-esteem, poverty, influence of broken homes, corruption and other environmental factors.

However, in order to deal with this menace, the government of Nigeria was able to put a lot of things together to militate against insecurity in the country. A lot of Security outfits and organizations were established. Some of these are: The Nigeria Police, National Drug Law enforcement Agency (NDLEA), Federal Road Safety Corps (FRSC), Nigeria Security and Civil Defence Corps (NSCDC), State Security Service (SSS), Economic and Financial Crimes Commission (EFCC), Independent Corrupt Practices and other related Offences Commission (ICPC). In addition to this, to catch the children young, and prevent the immediate and remote causes of insecurity in the county, the Independent Corrupt Practices and other Related Offences Commission (ICPC) in collaboration with NERDC, infused some core values into the Basic and Senior Secondary Education through the Religion and Nation values curriculum in 2012 with Security Education as one of its core themes.

Issues/activities that corrode integrity, like indiscipline, lack of the fear of God,

materialism (when members of society praise and envy rich people and look down on the poor), fraud, inconsistency in behaviour, stealing, disobedience, etc were highlighted in the curriculum. All these efforts made by government are meant to ensure that young learners are imbibed with good character and behaviour that would prevent them from all these acts of indiscipline that could constitute a threat to security of lives and properties.

To further actualize this assertion, the Nigerian Educational Research and Development Council (NERDC) developed the National Values curriculum in 2012 which has Security Education as one of its core themes. But the question is how relevant are the contents of the Security Education curriculum to the current needs of the society in terms of the contemporary security challenges facing the country? This paper tends to focus its searchlight on the contents of Security Education as presented in the current Basic Education Curriculum.

Security Education Contents at the Basic Education Level

Education is an important instrument for building a culture of peace, safety and tolerance among members of any given society. Through education, the desired improvement in the quality of life, respect for the rule of law and human rights and peaceful coexistence can be achieved. The recent unprecedented spate of insecurity in the nation calls for an appraisal of the Security education contents. This is with a view to making suggestions that would improve these contents and make the objectives of Basic Education curriculum; especially as far as security education is concerned, achievable. Amendments could thereafter be carried out in order to respond to current security challenges and realities.

The objectives of security education as given by the Federal Ministry of Education (2012) are, among others:

- Create awareness and understanding of security situations (assets protection and loss prevention) and develop the capability for avoiding it;
- Acquire the knowledge about security agents and their roles, causes and effects of crimes and criminal behaviour, and the understanding of personal security;
- Inculcate in the learners the skills of observation and reporting security risk situations in their immediate community;
- Inculcate in the learners the skills to identify security risk situations and then take appropriate measures to avoid them;
- Develop the attitudes and values of cooperation, tolerance and creativity for solving security challenges without violence;

- Acquire the necessary skills required to take precautionary measures to avoid impending danger/insecurity, to ensure assets protection and loss prevention; and1.
- Develop consciousness towards personal security and the security of others. (Pg 2)

Table 1 provides some of the key contents in Security Education which span across Basic Education classes. The contents are spirally organised from simple to complex and concrete to abstract.

Table 1: Security Education Contents in Basic Education Curriculum

Class	Content
Primary 1	i. Safe and unsafe places in your environment ii. Dangerous spots in the environment iii. Who to call during an emergency
Primary 2	i. Sources of danger and insecurity ii. Security agencies and their Primary duties iii. Safety Tips on Roads
Primary 3	i. Security agencies and their Primary duties ii. Identification of criminal behaviours iii. Meaning, causes, effects of flood iv. Ways to prevent flood
Primary 4	i. Meaning of neighbourhood watch. ii. Ways of reporting suspicious movements in the neighbourhood iii. Consequences of failure to observe suspicious movements and people in the neighbourhood: iv. Different emergency phone numbers and their uses
Primary 5.	i. Meaning of personal security -Precautionary measures on personal security. ii. Duties and Responsibilities of a child in relation to personal security
Primary 6	i. Meaning of personal security management ii. Punishment for various crimes: theft, rape, forgery, examination malpractices, food fraud (preparing and selling bad food), and fake drugs, etc. iii. Acting appropriately: Response to emergency situations such as fire outbreaks, etc. iv. How to raise alarm in different emergency situations. v. What to do when a crime occurs

(Source: Federal Ministry of Education (2012): 9-year Basic Education Curriculum, Religion & National Values, Pry 1-3, 4-6 & JSS 1-3) Lagos: NERDC Press.

Basically, according to Ekhomu, (2009), one needs security for the following reasons:

- Life Safety;
- Injury avoidance;
- Loss Avoidance;
- Promotion of productivity;
- Promotion of safety;
- Promotion of public safety;
- Reduction of victimization; and
- Police assistance.

The question is how far has the curriculum captured these security needs, especially now that the country is neck deep in new security challenges? In other words, can the current curriculum reduce or out rightly remove the incidences of insecurity in the country?

Relevance of the Content of Security Education at the Basic Education Level to the Contemporary Challenges in Nigeria

The content of Security Education at the level under discussion has attempted to consider majority of the security challenges bothering the nation. Issues and topics in the curriculum which are to be taught are, among others: dangerous spots; sources of danger and insecurity; safety tips; identification of dangerous people e.g. kidnappers, robbers, rapists etc; duties and responsibilities of a child in relation to personal security; punishment for various crimes: theft, rape, forgery, examination malpractices, food fraud (preparing and selling bad food) and fake drugs, etc; how to raise alarm in different emergency situations; common crimes and associated punishments; causes and effects of common crimes and crime prevention. It is believed that children taught with the curriculum would be able to identify what constitute security. They should be able to have a good knowledge of what constitutes living in a peaceful

environment, appreciate a peaceful environment and even become ambassadors of peace. Moreover, they would be able to advise, educate and help their peers, siblings, parents and even their community on security issues, thereby promoting security consciousness in the society. Knowledge of the essence of security in the community could motivate learners to pick a career in security related professions, such as the Police force, Civil Defence Corps etc., thereby strengthening the security force in the country.

However, it is pertinent to note that there are other emerging security issues that are yet to be considered in the current curriculum. Examples of such are **financial frauds** and **internet frauds** which became prominent at the emergence of the use of Information Technology which includes Global System for Mobile (GSM) Communication, Handsets, and the Internet. Human Trafficking or Trafficking in Persons (TIP) (where children, young boys and girls are either forced or coerced to go to other countries to be sex slaves or domestic servants) is another serious security challenge in the country. This issue is yet to be captured in the current curriculum contents. These two critical issues would need to be looked into by curriculum developers in order to create awareness and minimise these challenges.

Suggestions

In view of the above, and to reduce the level of insecurity in the country, it is suggested that:

- The Nigerian Educational Research and Development Council (NERDC) should include in the curriculum emerging security issues, such as the ones highlighted and any other ones that are yet to be in the curriculum contents.
- Teachers at the Basic Education level should be trained on Security Education Curriculum.
- Security Education should be included in the Nigerian Certificate of Education minimum standard to ensure effective implementation of the curriculum.
- NERDC to include emerging security issues, such as, internet fraud and human trafficking in the curriculum. They should constantly organise Security Education seminars/workshops involving stakeholders to further create awareness and enhance reduction of security challenges in the country.
- There should be constant public enlightenment campaigns against all social vices in the society.

- Values that promote peaceful coexistence like, humility, tolerance, humaneness, self- control and forgiveness should be promoted, emphasised and be infused in the curriculum.

Conclusion

The paper has made attempts to provide the importance of security to societal peaceful coexistence. The contents of Security Education at the Basic Education level were highlighted. However, in order to achieve the objectives of the curriculum of Security Education, it is important that teachers are well trained, essential teaching learning materials are to be harnessed and used. It is also necessary that all emerging security challenges should be included in the curriculum.

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CHALLENGES OF INSECURITY ON BASIC EDUCATION AND CURRICULUM DELIVERY IN NIGERIA

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Abstract
This paper examined the challenges of insecurity as it affects basic education and curriculum delivery in Nigeria. The paper sees insecurity as any natural or social action which may cause structural damage leading to destruction of human capital development. The write up also defined basic education as the type of education that is given in first level of education with the view of eradicating illiteracy, ignorance and poverty. Curriculum delivery has been viewed in this paper as a process of putting an agreed curriculum, plan decision, proposal or policy into effect which helps learner to acquire knowledge and experience. The paper also discussed how insecurity affects curriculum delivery in Nigeria by highlighting some accounts of violent attacks on schools that has left teachers and students trembling in fear and trauma. The paper argues that, insecurity has adversely affected curriculum delivery by inducing fear in both teachers and students which has led to subsequent withdrawal of students from school and displacement of teachers who are the main agents of curriculum delivery. The paper concludes that, even though curriculum delivery is limited by some factors like corruption, lack of good teaching environment and many others, the paradigm of insecurity is the most volatile and have radically affected curriculum delivery in Nigeria. The paper suggests that Nigerian government and owners of schools should adopt extra-ordinary security measures like; deployment of social school military personnel.
Key words: Security, Curriculum, Basic Education

Introduction

Education has been viewed by many as the bedrock of socio-economic-

development. It is the acquisition of knowledge, development of faculty and the training of skills toward making an individual become relevant to himself and the society to which he belongs. Education exists on different levels, ranging from basic education to tertiary education. According to UNESCO (1994), basic education refers to formal, non-formal and informal public and private activities intended to meet the basic learning needs of people of all ages. It includes instruction at the first or foundation level on which subsequent learning can be based encompassing early child hood and primary (or elementary) educations…basic education may extend into secondary education in some countries. According to Juliana and Clinton (2016), basic education prepares the mind and trains the child for higher and tougher academic pursuits, it provides young learners with the fundamentals of reading, writing, skills acquisition, information and attitudes necessary for proper adjustment into the society. Investing in primary or basic education is considered by the United Nations Development programme (UNDP) as a means of fostering gender equality, and sustained economic growth and reduce poverty in developing countries. This was articulated among the eight millennium development goals in September 2000.

Furthermore, acknowledging the importance of basic education, the Nigerian government has made primary education free and declared it universal and compulsory for more than half a century. Basic education is delivered to learners through teachers who used a range of strategies to deliver the curriculum depending on the need of the group, individuals or society. The curriculum that is delivered by the teacher to the student is called taught curriculum. Teachers being the chief implementers of curriculum, occupy a crucial role in curriculum decision making. That is why in some countries, teachers are given considerable authority regarding curriculum instruction and choice of instructional resources.

However, despite the importance of basic education in Nigeria, curriculum delivery at the basic educational level in the country has been plagued with plethora of challenges ranging from corruption, lack of instructional materials, poor learning conditions and poor infrastructure among others. Insecurity is one of the challenges that has grossly affected curriculum delivery in Nigeria, especially, at the basic educational level. Insecurity challenges like armed robbery, inter-ethnic crisis, and religious crisis among others are threats to teaching and learning because whenever a case of a crisis occurs, schools are forced to close to ensure the safety of both teachers and students. The operations and activities of "Boko haram" sect against education came to limelight following the abduction of 276 students of Government Girls College, Chibok.

This internationally well-publicized case of school kidnapping brought a new dimension to Nigeria`s insecurity challenge as many secondary school attacks have been recorded thereafter. There were cases of kidnapping of teachers and students (Lagos Junior Model College, Igbonla). There were cases of killing of students and their teachers. Bombs have been brazenly detonated in school assemblies leaving dozens dead (Yobe school attack) while school buildings are burnt down which are grounds of teaching and learning. Iheanachor (2015) had also reported that five secondary school teachers were abducted at gunpoint from a school in Rivers State which left the people in the area in total fear and tension.

Also, apart from insurgency, there have been cases of religious induced insecurity. According to Adesulu (2019), there were also recorded cases of religious induced crisis which affected schools. Mission secondary schools located in Nassarawa area of Jos were attacked by muslim extremists. Cases of dormitory raping were also reported while many of these school attacks were not reported. The author added that statistics showed that about 2,295 teachers have been killed and 19,000 others displaced in Borno, Yobe and Adamawa States between 2009 and 2018, while an estimated 1,500 schools had been destroyed since 2014, with over 1,280 casualties among teachers and students. According to Akintunde and Musa (2016), insecured school environment affects the learning of students, Situations of insecurity triggers traumatic disorder and toxic stress that affect learning negatively. General school attendance and enrolment were equally affected as parents pulled their children out of schools while in some extreme cases, insecurity has led to closure of schools. For instance, Borno State schools were shut-down in major towns as a result of insurgency. This paper looks at how insecurity affects curriculum delivery in Nigeria and presents possible suggestions to the challenges.

Concept of security

The concept of insecurity like any other term have so many definitions, even though there is no disagreement on its manifestations and impact in the society. The difficulty of the definition is further compounded by the fact that insecurity is multi-dimensional and relative in nature such that it can be related to: physical, emotional, psychological, food insecurity, economic, and national insecurity or other forms of insecurity that are undesirable to human nature. In the effort to explain the term, scholars have tried to operationalize it rather than define it. According to JohnMary (2010), it is a condition in the society. An action, natural or social which may cause structural damages leading to destruction of human capital development, such may be viewed as threat of insecurity. In the words of Vornanen (2009), insecurity is a feeling of inferiority

by the individual, a subjective and objective experience which may affect connection between inner experience and outer conditions; such may be as a result of environmental threat or risk. These forms of insecurity can be internal or external. The concern of this paper is to examine insecurity in regards to threat to human lives and properties by the activities of insurgency or terror group. These attacks have led to continuous loss of human lives which impacts negatively on schools and physical structures in most institutions of learning. This poses a great challenge on curriculum delivery.

Causes of insecurity.

In recent times, the country has suffered plagues of crisis, each leading to loss of lives and destruction of properties. The insecurity crisis in Nigeria includes kidnapping, armed robbery, and insurgency among others. Perpetrators of these heinous crimes in the country, always attribute their actions to penury and unemployment. Otite (2012), submits that the state of insecurity in Nigeria could be attributed to security lapses on the part of security agents. Abubakar (2005) pinpoints failure of government to provide or manage the basic human needs of their citizens, ethnic disagreements, and national resource contentions as some of the factors responsible for insecurity in Nigeria. Udoh (2015) is of the view that insecurity in Nigeria is caused by porous borders, illegal arms importation, proliferation of illegal arms, ethnicity, emergence of ethnic militia groups, corruption, marginalization, poor leadership, religious fanaticism/extremism, and unemployment. In the same vein, Olawale (2016) pinpoints unemployment, inbalanced development, corruption, weak judicial system, and porous coastal borders as causes of insecurity in Nigeria. Also, adding to the causes of insecurity, Nadabo (2013) sees bad leadership, corruption, and illiteracy among other factors breeding insecurity in Nigeria. Odidi (2014) points to politics of bitterness in which ascendance to political power is seen as a do-or-die business. This invariably leads to political thuggery and insecurity. These insecurity situations may directly or indirectly affect teaching and learning because teaching and learning are activities that can only thrive effectively in a peaceful environment.

Scholars have viewed education as a tool for peaceful co-existence. Sadiq (2013), asserts that an educated population is an asset to a nation due to the fact that education promotes national security as it inculcates desirable human traits like honesty, sincerity, hard work, punctuality, productivity, innovation, patriotism, selflessness, brotherhood, friendship, . It also empowers people by inculcating life-long skills and know-how thereby liberating the individual from

poverty and want. In addition, Jonathan (2016) stresses the relationship between education, poverty and security, as he pointed that top ten most literate nations in the world are at peace, while almost all of the top 10 least literate nations in the world are in a state of either outright war or general insecurity. Lower education levels are linked to poverty and poverty is one of the chief causative factors of crime whether it is terrorism or militancy or felonies. To Jonathan, counter insurgency strategies are short term tools for securing a nation from insecurity while education provides a long-term solution.

Concept of Basic Education

Basic education like any other concept, has attracted various definitions from scholars. Basic Education means the type of education, in quality and content, that is given in the first level of education. This construct changes from country to country. Basic Education is in compliance with the Declaration of the World Conference on Education for All (WCEFA) which was made in Jomtien, Thailand in 1990, and stated clearly in Article 1 that every person - child, Youth and Adult - shall be able to benefit from educational opportunities designed to meet their basic needs. This declaration was reaffirmed at the World Summit for Children also held in 1990, which stated that all children should have access to basic education by the year 2000. This led to the introduction of the Universal Basic Education programme in Nigeria. According to Yusuf and Ajere (2016), The Universal Basic Education (UBE) Programme is an educational programme aimed at eradicating illiteracy, ignorance and poverty. Nigeria has made efforts in the past to provide broad-based education through various programmes. These programmes include:

a) Introduction of Universal Primary Education (UPE) in Western Region on 17th January 1955.
b) Introduction of Universal Primary Education in the Eastern Region in February 1957.
c) Introduction of UPE in Lagos (then Federal Territory) in January 1957.
d) The publication of the National Policy on Education in 1977, which is unequivocal in its insistence on functional, universal and qualitative education. The Policy declares Governments intention to use a variety of strategies for the provision of Universal Basic Education for all citizens.
e) Launching of Universal Free Primary Education on 6th September 1976, and.
f) The launching of Universal Basic Education (UBE) on September 1999.

In Nigeria, basic education was equated with six years of primary schooling in the past. Currently basic education is extended to include the three years of Junior

Secondary School and the one or two years of Early Childhood Education. Universal Basic Education (UBE) is conceived to embrace formal education up to age 15, as well as adult and non-formal education including education of the marginalized groups within the Nigerian society. It is a policy reform measure of the Federal Government of Nigeria, that is in line with the objectives of the 1999 constitution stated in section 18 that... "Government shall eradicate illiteracy; to this end, government shall as and when practicable provide a free and compulsory Universal Primary Education, free secondary education, and free adult literacy programmes."

Concept of Curriculum Delivery

To properly appraise the concept of curriculum delivery, it is important to isolate and explain what curriculum and curriculum delivery (implementation) means. Curriculum just like any other term has attracted numerous definitions which arise from the dynamic nature of knowledge and evolving innovations in education. Curriculum, according to Esu, Enukoha & Umoren (2004) is all learning experiences a child has under the guidance of a teacher. According to Offorma (2005), curriculum is a programme which is made up of three components: programme of studies, programme of activities and programme of guidance. Alebiosu (2005) posits that curriculum is an instrument that dictates the affairs of every educational system. It is the vehicle through which knowledge and other learning activities are disseminated.

The definitions above highlight the fact that curriculum is the totality of what a student ought to learn in school. These experiences to be learnt by the student must be delivered through a channel and the teacher is that channel through which the curriculum can be delivered to the learner. Also, delivery which is also conceptualized as implementation by Bediako (2019), means a process of putting an agreed plan, decision, proposal, idea or policy into effect. Hence curriculum implementation includes the provision of organized assistance to staff (teachers) in order to ensure that the newly developed curriculum and the most powerful instructional strategies are actually delivered at the classroom level. In addition, Kanno and Nzewi (2018) state that curriculum can be organized into three major components - objectives content, or subject matter and learning experience. Also, curriculum comprises of different types which according to Mu'azu (2017) were developed at different times in educational history in accordance with societal conception of the role of education, the nature of the learner and learning process as well as societal needs. The first three variant of curriculum include: Subject-centered curriculum,

activity/experience-centered curriculum, and child centered curriculum. It is one thing to develop a curriculum content and another to impart it to the target learner to effect the desired change in behaviour. This can only be achieved through effective curriculum delivery.

Curriculum delivery is a means by which learners' experience and access education. Curriculum according to Kanno and Nzewi (2018) is the key to educational process. They added that curriculum is the life wire of teaching and learning. However, putting this curriculum into operation, requires a delivery agent which is the teacher. Mang and Mankilik (2015), sees the teacher as an important factor mediating the effect of educational services, institutions and systems. The teacher has influence on future, personal, social and productive lives of pupils. The major role of a teacher is teaching. Teaching is a system of action intended to induce learning and learning is a process by which behavior is either modified or changed through experience or training. Bediako (2019), posits that delivery (implementation) is simply a process of putting an agreed plan, decision, proposal, idea or policy into effect. Thus, Curriculum delivery process involves helping the learner acquire knowledge or experience. It is important to note that curriculum implementation cannot take place without the learner. The learner is therefore the central figure in the curriculum delivery process. Although there are various factors that also influence Curriculum delivery like the resource materials and facilities, the teacher, the school environment, culture and ideology, instructional supervision and assessment.

Alebiosu (2005), states that curriculum delivery takes place as the learner acquires the intended experiences, knowledge, skills, ideas and attitudes that are aimed at enabling the same learner to function effectively in a society. Curriculum delivery therefore refers to how the planned or officially designed course of study is translated by the teacher into syllabuses, schemes of work and lessons to be delivered to students. The delivery, as an essential part of curriculum development, brings into existence the anticipated changes. However, there are factors that influence curriculum delivery among which are: the environment, which has been identified by UNESCO as an important component of quality education since good teaching environment promotes adequate curriculum delivery. The next important factor is adequate learning resources - teacher can only deliver curriculum content effectively when teaching learning resources are adequate and available. Even though there are other factors that influence curriculum delivery the ones listed above are the most sensitive and needed in curriculum delivery.

Impact of Insecurity on Curriculum Delivery in Nigeria.

Education as discussed above has been viewed as the bedrock of national integration which invariably will lead to peace and stability of any nation. Given the importance of education, it is supposed to be the priority of every nation and should be guided from any form of challenge however, education in Nigeria has been plagued with litany of problems ranging from corruption, political instability, poor learning environment, poor teacher motivation and insecurity among others. The problems have been a threat to curriculum delivery in the nation and the most devastating and volatile problem challenging curriculum delivery is the issue of insecurity. As stated above, the advent of "Boko Haram" insurgency has brought a new dimension to the security problems of Nigeria which has adversely affected curriculum delivery. Below is the discussion on how insecurity impacted negatively on curriculum delivery.

There has been series of dangerous attacks on schools, students and teachers who are the major agents of curriculum delivery in Nigeria. Nwosu and Ukwunna (2019), gave a chronicle of some of the activities of the Boko haram sect on schools thus: on the 6th of July 2013, a mass shooting occurred at the Mamudo Government Secondary school in Yobe State. It was reported that 41 students and a teacher were killed while Boko Haram sect claimed responsibility of the attack. While the pain and anguish of this attack was yet to ebb, another attack was carried out on the 29th of September 2013 in Gujba College in the same state where 44 people were killed. About five months later, precisely on the 25th of February 2014, Federal Government College Buni Yadi, Yobe State was attacked leaving 59 boys dead and the entire 24 halls in the college burnt down. This particular attack sent a signal that the Boko Haram sect was out to end every form of western education in Nigeria as parents and guardians became extremely terrified to send their wards to school. By the 14th of April 2014, the Boko Haram sect attacked Government Girls College in Chibok Local Government Area of Borno state and kidnapped 276 girls who were writing their examination. Among the earlier attacks mentioned above, the Chibok girls' incident received unprecedented publicity and became a global issue as many interest groups emerged calling for the rescue of "our girls". Some of these girls have been rescued while many are still in captivity where no one can say anything about their fate.

At about 8pm on the 2nd of March 2016 in Lagos State, 3 students of a private secondary school, Babington Macaulay Junior Seminary, Ikorodu were abducted by unknown gunmen (Punch Newspaper 16 June 2016). On the 13th of January, 2017, ten students and staff of Nigerian Tulip International College in

Isheri, (formerly Nigerian Turkish International College) Ogun State were abducted. By the 16th January 2017, two teenage suicide bombers detonated bombs in the University of Maiduguri which killed 3 people including a Professor. By the 25th of May 2017, a group of gunmen attacked Lagos State Model College, Igbonla Epe and abducted 6 students despite the perceived security in the school. On the 19th of February 2018, in what seems like a repeat of the Chibok girls` attack four years earlier, 111 school girls from the Government Girls Science and Technical College Dapchi, Yobe State were abducted. Even though most of the girls have been released, this particular case showed failure of the existing security architecture to proactively secure the volatile area as Dapchi which is very close to Chibok in the north-eastern part of Nigeria.

All these attacks indicate vulnerability of schools which may escalate further into a bigger security and curriculum delivery challenge if not arrested. Saidu and Tumba (2015) observe that Boko Haram is a strong barrier to curriculum delivery in Nigeria because its activities have led to primary, secondary and tertiary institutions being closed down indefinitely countless times. Another barrier to curriculum delivery in Nigeria as observed from the above account of insurgency, is kidnapping. In the words of Kanno and Nzewi (2018), kidnapping is a big barrier to curriculum delivery in Nigeria. This affects students' and staff performance leading to poor curriculum delivery. Deducting from the above position, it can be said that insecurity has affected the performance of students and has limited the effect of curriculum delivery by teachers. These inefficiencies by teacher might be consequent upon the insecurity situation.

Also, corroborating the above position, Akintunde and Musa (2016), posit that insecure school environment affects the curriculum delivery. Situations of insecurity triggers traumatic disorder and toxic stress that affect teaching and learning negatively. General school attendance and enrolment are equally affected as parents pull their children out of schools while in some extreme cases, insecurity has led to closure of schools. For instance, Borno State schools were shut-down in major towns as a result of insurgency. In line with the view of Akintunde and Musa (2016) and Ameh (2015), these attacks on schools usually lead to vandalization and outright destruction of school facilities which discourage the establishment of new schools. Consequently, government resources are depleted as funds meant for other developmental projects are channelled to tackling the aftermath of attacks. In the end, educational attainment in terms of quality of graduates and manpower suffers which impinge on overall

national development aspirations. Akintunde and Musa (2016), added that security is perceived as a basic human need that contributes to effective learning. Psychologists proposed that security is crucial for human survival. Following the postulation of hierarchy of Needs by Abraham Maslow, the lower needs of man like food, shelter and security must be met before other higher needs like education or intellectual/cognitive needs. Deductively, the above statement suggests that curriculum delivery cannot be effective in an insecure environment since security contributes to effective learning.

Having highlighted some of the issues impeding curriculum delivery in Nigeria, this paper is of the opinion that insecurity is the most volatile among other challenges. These plethora of security challenges on curriculum delivery ranging from attacks by "Boko Haram", communal clashes, and herders and farmers clashes have posted a big challenge on curriculum delivery. This is in view of the fact that whenever there is any attack, schools are shut down which grossly affects the delivery of curriculum because staff who are supposed to be the major agent of curriculum delivery, are overwhelmed with fear. This fear can greatly affect their efficiency in curriculum delivery. Similarly, on the other hand, students who are supposed to be imparted with the set curriculum, are also traumatized by what has happened or is still happening around them. For example, according to Nwosu and Ukwunna (2019), 41 students and a teacher were killed by "Boko Haram" on 6th July, 2013 in Yobe State, another attack was executed on 25th on that same month leaving 59 boys dead. 24th April 2014, experienced another attack on girls collage Chibok where 276 girls were kidnapped. On 13th January, 2017, ten students and staff of Nigerian Tulip international college in Ogun state were abducted among other cases. In the face of these attacks, no teacher or student will be comfortable around such areas of insecurity to either teach or learn. This is in line with the view of Ben (2013) who observes that peace in the society can promote curriculum delivery.

Insecurity has affected educational or learning environments. The situation has forced authorities to turn schools to IDP camps and channel money to fix the damage caused by the attacks. Ameh (2015), said that these attacks on schools usually lead to vandalization and outright destruction of school facilities which discourage the establishment of new schools. Consequently, government resources are depleted as funds meant for other developmental projects are channelled to tackling the aftermath of attacks. Also, some schools (learning environment) are destroyed in the execution of the attacks which make teaching and learning an arduous task. This is in view of the fact that good learning environment promotes effective curriculum delivery and learning. In the words

of Omoifo (2018), poor learning environment in Nigeria may be a huge contributor to curriculum delivery and consequently poor curriculum implementation. As such, in the case where schools are destroyed and students are taught in horrible environments like IDP camps, this portends a great challenge to effective curriculum delivery.

Conclusion

This paper has exhaustively discussed how insecurity affected and is still affecting curriculum delivery in Nigeria. Even though the paper highlighted so many limitations to curriculum delivery in Nigeria like; corruption, poor teacher motivation, lack of teaching materials and many more, it argues that, among all these challenges, insecurity has proven to be the most volatile and has impacted natively on curriculum delivery in basic education in Nigeria. This is because of the fear insecurity poses on both teachers and students. However, it must be noted that the negative impact of insecurity on curriculum delivery is not exclusive to basic education as it affects tertiary education too. Why this paper dwells on basic education is because it prepares a student for higher learning. The big question here is, if education is the bedrock of development and a tool for national security and is being disrupted by insecurity challenges which most of the perpetrators are illiterates, what will be the future of the country if more schools are shut down and students are pulled out of schools because of insecurity.

Recommendations

1. Nigerian government and owners of private schools should adopt extra-ordinary security measures like; deployment of special school military personnel to protect students.
2. Government should allocate more funds to the education sector to help in acquisition of security gadgets to forestall attacks.
3. There should be cameras in schools for surveillance. This will enable them detect any advancing threat.

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CURRICULUM DELIVERY AND SECURITY CHALLENGES IN SECONDARY EDUCATION IN UYO EDUCATION ZONE, AKWA IBOM STATE

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Abstract
The study investigated Curriculum delivery and security challenges in secondary education in Uyo Education Zone of Akwa Ibom State. Descriptive research design was used. The population of the study comprised 33,953 students and 3429 teachers in 94 public secondary schools in Uyo Education Zone of Akwa Ibom State for 2021 academic session. A sample of 300 respondents was selected using multi-stage and simple random sampling technique. The instrument used for the study was a researcher developed instrument entitled "Curriculum Delivery and Security Challenges Questionnaire (CDSCQ)". CDSCQ was faced validated and internal consistency reliability carried out using Cronbach Reliability Statistics with a reliability coefficient of 0.78 and 0.73 for curriculum delivery variables and security challenges respectively. Mean and standard deviation were used to answer the research questions, and independent t-test was used to test the hypotheses at 0.05 level of significance. The results showed that there was a significant influence of teachers' ICT classroom compliance, teachers' creativity and teachers' disposition on security challenges in secondary education in Uyo Education Zone. It is recommended, among other things, that sufficient facilities and resources should be provided to in-service and pre-service teachers to practices the ICTs in teaching-learning process. They should be given an ICT friendly environment in which they can develop their ICT-based competencies.

Introduction

Insecurity and insurgency in Nigeria have assumed a frightening dimension in which schools and colleges especially public schools are worst hit. High profile shootings, hostage taking and kidnapping of both staff and students have become rampant and unbecoming. It is a matter of national importance that should be of concern to all stakeholders in the Nigerian State and one that

requires comprehensive and committed contribution of all groups and interests that make up Nigeria. National security cannot be narrowed down to defense and military might alone. It is this narrow conception of national security that forms the basis for the disproportionate budgetary allocation of funds as the case is, to ensure the security of lives and property, however, to the utter neglect of other equally important sectors of the economy that bear directly or indirectly on national security. Such sectors as education, health, agriculture and so on become poorly mobilized.

Security lapses and challenges certainly do manifest on a daily basis in schools in Nigeria. Such challenges range from youth restiveness, terrorism and insurgent attacks, kidnappings and hostage-takings for monetary ransoms, political assassinations, arsons, murders, cult-related activities, mass protests and so forth (Taylor and Fransman, 2004). However, in the wake of Boko Haram insurgency, Unknown Gun Men, Banditry, Herdsmen brutality and the subsequent launching of attacks on schools, bombings, shooting at sight, abductions and hostage taking have taken prominence and have remained issues of serious security concern. While many have fallen victims to any of the dangers aforementioned, very few have actually escaped death or injury during such attacks. In the prevailing circumstances, the safety and security of school administrators, teachers and students and entire community where the schools are located are no longer guaranteed; most especially in the North-East Geo-Political Zone where the activities of Boko Haram insurgents are much pronounced.

The inaccessibility of schools as a result of the inherent dangers therefore remains a serious challenge to knowledge givers, learners and also other critical stakeholders. In most schools attacked, the traumatic experience alone cannot easily be erased as such experience instills fear on the teachers and the students alike and make it very difficult for them to return to school. More so, the teaching and learning processes are hindered because the school environment are unsafe and learning cannot be properly conducted and coordinated in an unsafe school environment (Olowoselu, Bello and Onuselogu, 2014). O'Malley (2010) posited that the effects on education of such incidents will be felt long after the funerals have taken place, through loss of teachers and intellectuals, flight of students and staff, fear of turning up to class, grief and psychological trauma among students and personnel, damage to buildings, materials and resources, and degradation of the education system through staffing recruitment difficulties and halted investment.

Education is expected to help preserve, liberate and refine the society so

that it will be a congenial place for individual members to live and work happily in peace to ensure sustainable development, security, and stability of the nation. Thus, school is seen as means to familiarize members with physical features of the society together with the cultural patterns and practices, religious differences, political atonement, and also means to communicate the effect of these on individuals' behaviour and competences. On this premise, it could be equally deduced that education helps the society in the development of the new attitudes, new values and new techniques demanded in the new order for generational development and growth. These can be done through effective curriculum delivery.

Curriculum delivery has to do with the values, skills, attitude, acceptable norms among others that are delivered by the teachers to the students to build up the character based of the learners and prepare them to be self-reliance and useful members of the society. Obanya (2003) explained that team building, teacher empowerment, delegation of authority, garnering of support for schools programmes, use of information and increased community participation in the provision of curriculum resources are parts of curriculum delivery process. It could also be seen as a process of influencing men and women to acquire the many physical, moral, social capabilities and the values of the society demanded of them by the society into which they are born and within which they must function. However, Nwagboso (2012) averred that the linkage between national security and curriculum delivery can never be trivialized because effective curriculum delivery is a function of an enabling safety environment. In delivering suitable and relevant curriculum amidst security challenges in Nigeria, the school administrators must always consider the different factors such as teachers' ICT classroom compliance, teachers' creative ability and professional development among others.

According to Hamsha (2011), adopting ICT competency standards and adequate training will help teachers to incorporate ICT effectively into classroom practices. Besides, it is also commonly acknowledged that ICT is expanding rapidly; if teachers are not ready with adequate and latest knowledge and skills in the use of ICT in classrooms as well as zoom conferences and online teaching, they would be unable to keep pace with the ever-changing technology and inevitably will be left behind (Mas Nida, Wong and Ayub, 2011). Hence, a paradigm shift needed to maximize the potential of ICT and its application is very much expected in the minds of the teachers and the concerned authority that is in charge of preparing the teachers to keep abreast of rapid ICT development as a potent strategy against insecurity (Sathiamoorthy, 2011). This ensures

continuous teaching and learning from using ICT amidst security challenges.

Integration of ICT into classroom instruction for meaningful learning has been a challenging task worldwide. Chai (2010) conducted a study to investigate the relationship between Singaporean pre-service teachers' ICT competencies, pedagogical beliefs, and their beliefs about ICT acceptance and use. The findings affirmed that the pre-service teachers' ICT competencies and their pedagogical beliefs are significantly related to their acceptance and use of ICT. This is lacking in Nigeria education system especially at the public sector, where ICT is not applied in the teaching and learning process. The creative ability of teachers are not developed and utilized in the education system.

Creativity is the ability to make or bring to existence something new, whether a new solution to a problem, a new method or device or a new artistic object or form. Penick (2012) described creativity as a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements and disharmonies as well as identifying, searching for solutions, making guesses or formulation of hypotheses, and possibly modifying and restating them, and experimenting to find results and finally communicating the results.

Teachers' creativity produces actionable ideas, new concepts, new designs and new opportunities while innovation adds values to the new products. According to Akinboye (2013), without creativity, a person is not able to access the fullness of information and resources available but is locked up in old habits, structures, patterns, concepts and perceptions. This is why creativity, generative perception, constructive and design thinking plus innovation should form the basis of any education for sustainable development. Creativity is the confluence of intellectual activity, knowledge, motivation, thinking styles, personality and environment. Creativity should be related to intellectual activity and knowledge. Teachers these days are expected to assimilate reforms on a number of levels in their daily practice to combat insecurity in the system. Teachers' creativity is synonymous with professional development and educational development. The quality of teachers determines the quality of their output. The incidences of unqualified and ill-equipped teachers that permeate all levels of education in Nigeria has constituted treat to quality education and insecurity in Nigeria. These among others have necessitated the need for consistent teachers' social disposition skill, consistent re-training of teachers to improve their capability in disposition skills and security education is paramount.

According to Nsibande (2012), the success of the curriculum depends on the attitudes, values, practices and interest of teachers in contributing to the implementation of a curriculum. More commonly, some teachers are just less

concerned about what subject to include or how useful a topic can be to students as such when they get syllabus for their subjects, they do not take time to peruse its contents and come up with suggestions and possible adjustment depending on the location and condition of the school. They simply care about being first to finish the scheme. Thus, their disposition towards curriculum delivery is based on what time they have and not how impactful the lessons are to the students.

Teacher disposition as explained by Villegas (2017) is the tendency for individuals to act in a particular circumstance based on their beliefs. This describes the way teachers behave and how they handle students put under their care. It accounts for the principles or standards that underpin a teacher's success in the classroom. Thus, in the course of delivery lessons, a professional teacher ought to be dedicated, kind, caring, friendly, co-operative and very active so as to know when his/her students are troubled or when they are not doing well. When students are not doing well in class and teachers do not care, they may be tempted to indulge in unacceptable acts which would eventually pose security threat to the school. Creemers, Kyriakides and Antoniou (2012) took a functionalist perspective and described as technical processes that help teachers to provide better service to clients/students.

Education and security can influence each other positively or negatively depending on the contexts. Education enables individuals, groups, countries and human race to explore, appreciate, understand and develop their physical and social environments for the satisfaction of their needs. It empowers individuals and liberates citizens from ignorance, prejudice, bias, superstition, and manipulation by people who claim to have superior knowledge. An educated person has a broad view of issues instead of narrow and parochial outlook. He/she is tolerant of other people's religion, belief, culture and limitations and promotes social harmony and security. Education produces and enhances knowledge, skills, productivity, governance, civility and status in society. Knowledge produced and acquired through education is the most vital and sustainable basis of national development and security.

Security could be said to encompass the socio-economic wellbeing of the people which enables the coexistence in peace and harmony of all agents of development, and enhances the ability of each to function without hindrance. Consequently, various symptoms of social disorganization and vices have become overt and easily noticeable with: prostitution in urban centres; drug use/abuse and associated ailments; direct and indirect child abuse; child trafficking; severance of disregards for community values; general indiscipline, absence of law-abiding culture; communal strife, violent disorder; and ethno-

religious conflicts. All of these have generated into insecure environment and has called for the need to re-organize, strengthen and re-redirect the delivery of functional, morals and values education in the broadest possible sense in Nigerian education system in such a manner as to effect the younger generation positively to build their level of consciousness as they seek to make the choices that will determine their future. This is evidenced in Levine (2010) conception of education as a major communicator of ideal values, moral, attitudes, and norms. All these could be made possible when education is seen as the major way out of insecurity as well as effective curriculum delivery.

The study of this nature would be of beneficial to the teachers in that it would enable them to appreciate the fact that they play a vital role in the curriculum delivery. This would make them to appreciate basic professional development skills in order to curb with the present security challenges in Nigeria. It would also help students to understand the remote and immediate causes of security challenges in Nigeria and possible ways of curbing such challenges. It is on this premise, the study seeks to establish Curriculum delivery and security challenges in secondary education in Uyo Education Zone of Akwa Ibom State.

The study aimed at investigating Curriculum Delivery and Security Challenges in Secondary Education level in Uyo Education Zone. Specifically, this study sought to:

1. determine the influence of teachers' ICT classroom compliance on security challenges in secondary education in Uyo Education Zone;
2. examine the influence of teachers' creative ability of instruction on security challenges in secondary education in Uyo Education Zone; and
3. determine the influence of teachers' disposition on security challenges in secondary education in Uyo Education Zone.

The following Research Questions were posed:

1. What is the influence of teachers' ICT classroom compliance on security challenges in secondary education in Uyo Education Zone?
2. What is the influence of teachers' creative ability of instruction on security challenges in secondary education in Uyo Education Zone?
3. What is the influence of teachers' disposition on security challenges in secondary education in Uyo Education Zone?

The following null hypotheses were formulated to direct the study:

1. There is no significant influence of teachers' ICT classroom compliance

on security challenges in secondary education in Uyo Education Zone.

2. There is no significant influence of teachers' creative ability of instruction on security challenges in secondary education in Uyo Education Zone.
3. There is no significant influence of teachers' disposition on security challenges in secondary education in Uyo Education Zone.

Method

Descriptive survey design was adopted for this study. This study was conducted in Uyo Education Zone of Akwa Ibom State. The population of the study comprised 33,953 students and 3429 teachers in 94 public secondary schools in Uyo Education Zone of Akwa Ibom State for 2021 academic session. The sample of 300 respondents was selected using multi-stage and simple sampling technique. An instrument used for data collection was developed by the researchers entitled Curriculum Delivery and Security Challenges Questionnaire (CDSCQ). CDSCQ was faced validated and internal consistency reliability carried out using Cronbach Reliability Statistics with a reliability coefficient of 0.78 and 0.73 for curriculum delivery variables and security challenges respectively. Mean and standard deviation were used to answer the research questions, and independent t-test was used to test the hypotheses at 0.05 level of significance.

Results

Research questions are answered alongside with the testing of hypotheses on the same table.

Hypothesis 1

There is no significant influence of teachers' ICT classroom compliance on security challenges in secondary education in Uyo Education Zone.

Table 1: Result of independent t-test analysis of the influence ofteachers' ICT classroom compliance on security challenges in secondary education.

Variable	ICT Classroom Compliance	N	$\bar{X}$	SD	df	-cal	t-crit	Decision
Security Challenges	High	103	22.23	7.63	298	8.39*	1.96	Rejected
	Low	197	28.64	6.28				

* = Significant at 0.05 alpha level; N = 300.

Analysis on Table 1 reveals that the mean score of security challenges with high influence of teachers' ICT classroom compliance is 22.23 compared to the mean score of security challenges with low influence of teachers' ICT classroom compliance is (28.64). Also, teachers with low ICT classroom compliance are more than teachers with low ICT classroom compliance. Again, the calculated t-value of 8.39 is higher than the critical t-value of 1.96 at 0.05 alpha levels with 298 degrees of freedom. This revealed that the null hypothesis which stipulated that there is no significant influence of teachers' ICT classroom compliance on security challenges in secondary education in Uyo Education Zone is rejected and alternative retained. This implies that teachers' ICT classroom compliance significantly influence security challenges in secondary education in Uyo Education Zone.

Hypothesis 2

There is no significant influence of teachers' creative ability of instruction on security challenges in secondary education in Uyo Education Zone.

Table 2: Result of independent t-test analysis of the influence of teachers' creative ability of instruction on security challenges in secondary education.

Variable	Teachers' Creative Ability	N	$\bar{X}$	SD	df	t-cal	t-crit	Decision
Security Challenges	High	223	27.54	6.37	298	7.61*	1.96	Rejected
	Low	177	23.34	7.18				

* = Significant at 0.05 alpha level; N = 300.

Analysis on Table 2 reveals that the mean score of security challenges with high influence of teachers' creative ability of instruction is 27.54 compared to the mean score of security challenges with low influence of teachers' creative ability of instruction is (23.34). Also, teachers with high creative ability of instruction are more than teachers with low creative ability of instruction. Again, the calculated t-value of 7.61 is higher than the critical t-value of 1.96 at 0.05 alpha levels with 298 degrees of freedom. This revealed that the null hypothesis which speculated that there is no significant influence of teachers' creative ability of instruction on security challenges in secondary education in Uyo Education Zone is rejected and alternative retained. This implies that teachers' creative ability of instruction significantly influence security challenges in secondary education in Uyo Education Zone.

Hypothesis 3

There is no significant influence of teachers' disposition on security

challenges in secondary education in Uyo Education Zone.

Table 3: Result of independent t-test analysis of the influence of teachers' disposition on security challenges in secondary education.

Variable	Teachers' Disposition	N	$\overline{X}$	SD	df	t-cal	t-crit	Decision
Security Challenges	High	175	28.73	7.19	298	9.92*	1.96	Rejected
	Low	125	22.15	6.08				

* = Significant at 0.05 alpha level; N = 300.

Analysis on Table 3 reveals that the mean score of security challenges with high influence of teachers' disposition is 28.73 compared to the mean score of security challenges with low influence of teachers' disposition is (22.15). Also, teachers with high disposition are more than teachers with low disposition. Again, the calculated t-value of 9.92 is higher than the critical t-value of 1.96 at 0.05 alpha levels with 298 degrees of freedom. This revealed that the null hypothesis which speculated that there is no significant influence of teachers' disposition on security challenges in secondary education in Uyo Education Zone is rejected and alternative retained. This implies that teachers' disposition significantly influences security challenges in secondary education in Uyo Education Zone.

Discussion of Findings

The result of hypothesis one reveals that there is a significant influence of teachers' ICT classroom compliance on security challenges in secondary education in Uyo Education Zone. This could be as a result of the fact that ICT competency provides the platform for global networking and access to security information of a nick time. This finding is in line with the earlier study by Sathiamoorthy (2011) who noted that maximum potential in ICT and its applications prepares the teacher to keep abreast with the rapid and potent strategies against insecurity. This implies that appropriate competency and utilization of ICT enhances a great defense against insecurity.

The result in table two revealed that the null hypothesis which speculated that there is no significant influence of teachers' creative ability of instruction on security challenges in secondary education in Uyo Education Zone is rejected and alternative retained. This implies that teachers' creative ability of instruction significantly influence security challenges in secondary education in Uyo Education Zone. This finding is in line with the earlier study by Akinboye (2013) which established that without creativity, a person is not able to access the

fullness of information and resources available but is locked up in old habits, structures, patterns, concepts and perceptions. This is why creativity, generative perception, constructive and design thinking plus innovation should form the basis of any education for sustainable development.

The result in table three revealed that the null hypothesis which speculated that there is no significant influence of teachers' disposition on security challenges in secondary education in Uyo Education Zone is rejected and alternative retained. This implies that teachers' disposition significantly influence security challenges in secondary education in Uyo Education Zone. This finding is in line with the earlier study by Villegas (2017), which accounts for the principles or standards that underpin a teacher's success in the classroom. Thus, in the course of delivery lessons, a professional teacher ought to be dedicated, kind, caring, friendly, co-operative and very active so as to know when his students are troubled or when they are not doing well.

Conclusion

The study examined curriculum delivery and security challenges in secondary education in Uyo Education Zone. The result indicated that Curriculum Delivery contributed immensely to Security Challenges in Secondary Education in Uyo Education Zone. Teachers' ICT compliance, teachers' creative ability and teachers' disposition were found to have significant influence on Security Challenges in Secondary Education in Uyo Education Zone.

Recommendations

It was recommended that:

1. Sufficient facilities and resources should be provided to in-service and pre-service teachers to practise the ICTs in teaching-learning process. Teachers should be given an ICT friendly/enabling environment in which they can develop their ICT-based competencies
2. Teachers should be trained to know and adopt methods which foster creativity in order to be in a better position to curb security challenges in the country.
3. To ensure teachers disposition, supervision and monitoring will no doubt, improve the quality of teaching and learning and by extension, curb security challenges.

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CURRICULUM IMPLEMENTATION CHALLENGES AND THE SUSTENANCE OF SECURITY IN NIGERIA

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Abstract
Since the inception of Western type of education in Nigeria, several attempts have been made to formulate policies in order to improve education practice. This paper examined curriculum implementation, challenges and sustenance of security in Nigeria. It could be said that the curriculum implementation could be intertwined and integrated in the issues surrounding challenges and the plight of sustainable security in Nigeria. The paper also viewed Concept of Curriculum Implementation, Contemporary Challenges and Sustenance of Security, Factors that Affect Curriculum Implementation in Nigeria, Sustainable Development. In conclusion, curriculum implementation is a very important aspect of the curriculum process. Hence, it is the bedrock of any school success or failure, the study recommends that there is need for a paradigm shit of some education policies, such as lecturers emphasis on seminar and conferences and also there should be a review of the curriculum to meet contemporary needs of the society with the provision of more qualified and competent teachers to meet the challenges of the envisaged curriculum among others
Keywords: Curriculum Implementation, Challenges, Sustenance of Security

Introduction

Since the inception of western type of education in Nigeria, several attempts have been made to formulate policies in order to improve education practice. The problem facing different levels of educational system is not the formulation of policy but the implementation. Even though large sums of money are spent on implementing new curriculum, several of these efforts have failed. According to Alade (2011), the main reason for the failure is the lack of

understanding of the culture of the school by both experts outside the school system and educators in the system. Successful implementation of curriculum requires understanding the power relationships, the traditions, the roles and responsibilities of individuals in the school system. The word implementation connotes operationalisation of a well-articulated and well intentioned ideas packed as theory. Hence to implement is to put to action packed ideas or theories into reality. Mezieobi (1993), conceptualized the term implementation simply as a process of putting an agreed plan, decision, proposal, idea or policy into effect. It is the bedrock of any plan success or failure. It is the moving force of any plan without which a plan is only good wish or intention. On the other hand, the word curriculum in a formal setting can be seen as the planned learning experiences offered to the learner in school. Esu, Enukoha and Umoren (2004) conceived curriculum as all learning experiences a child has under the guidance of a teacher, According to Offorma (2005), curriculum is a programme which is made up of three components: programme of studies, programme of activities and programme of guidance. It is therefore the blue-print or instrument by which school seeks to translate the hope and values of the society in which it operates into concrete reality.

The history of Nigeria runs parallel to the history of Nigerian education, because of the realization by the early nationalists that the country could not develop without a proper grounding in a national education system that can guarantee the production of the desired high quality workforce without which national development is impossible, Odele (2006) opined that education is the major agency for both personal and national socio-economic development. Investments in human capital development plays a critical role in long-term productivity growth at both micro and macro levels. The state of education in Nigeria continues to dominate national discourse at all levels. The implication of the declining education quality at all levels has far-reaching implications on one s moral, civic, cultural, and economic sustainability. It is therefore, imperative for education at various levels to prepare future leaders and develop the high-level technical capacities needed for economic growth and development (Osokoya, 2008). The utmost importance attached to education in Nigeria was clearly underscored in the Federal Republic of Nigeria (FRN, 2014) The Federal Republic of Nigeria, in this policy adopted education as an instrument "par excellence" for effecting national development.

However, security challenges operate a revolving-door policy these days. As

soon as one goes away, another turns up. Since Nigeria has returned to democratic system of government, the security situation in the country deteriorated drastically. Arguably, considerable progress has been achieved in the areas of freedom of and liberty, but series of resource based conflict (For example Niger Delta militant ethno-religious crisis, Jos crisis and communal conflicts) persisted. The climax of these security threats is the insurgence of a group called Boko Haram sect in the Northern Nigeria. Thus, a considerable effort to end the violence and build a sustainable peace to steer the economy to sustainability seems far from realization. The basic question is why development has continued to elude Nigeria in spite of numerous amounts of human and material resources. It is important to note that the concept of development is used openly as well as in mainstream literature and development projects. Development is not confined to macroeconomic forces of growth, but also focuses on the improvement of the individual and collective human condition, increasing choices and participation, equality, standard of living and well-being, the environment and sustainability, and on level, development as a human and ways of being.

Obanya (2002) and UNESCO (2005) affirmed that development is not a stage to be attained or a goal to aim for. Rather, it is a constant process of improvement in which education, research, and service play prom merit roles in creating positive change in the self and the people around us, the communities, and the institutions and structures that support one. At this juncture, development and higher education in this context aimed at empowerment and raising the quality of life where people can continue to develop their knowledge and skills. It is about learning to know, learning to do, learning to be, and learning to live together (Faure, 1972). Learning, research and service at HEIs are often at the forefront of knowledge generation and dissemination and are thus important contributors to forces of social change.

From its earliest days, the higher education in Nigeria had a clear mandate to contribute to national development by being attentive to Nigerian problems. The relationship between higher education and solving national problems was very clear. According to Olaitan (2007 pp 743-751).

> *The immediate problem that confronts Nigeria today is that of relating her educational system to her own environment. No education outside Nigeria can help accomplish this; it must be done by higher institution located within Nigeria and*

not tied to the apron strings of a foreign institution

Concept of Curriculum Implementation

The term curriculum implementation had been defined in different ways by different scholars. Garba (2004) viewed curriculum implementation as the process of putting the curriculum into work for the achievement of the goals for which the curriculum is designed. Okebukola (2004) described curriculum implementation as the translation of the objectives of the curriculum from paper to practice. In a nutshell, Ivowi (2004) sees curriculum implementation as the translation of 'theory into practice", or "proposal into action". In a similar vein, Afangideh (2009), sees the concept of curriculum implementation as the actual engagement of learners with planned learning opportunities. It is the actual carrying-out of societal culture and/or government policies spell out in the curriculum. It is a stage in curriculum process when in the midst of learning activities, the teacher and learners are involved in negotiation aimed at promoting learning. This is the interactive stage of the curriculum process which takes place in the classroom through the combined effort of the teachers, learner, school administrators and parents. It also integrates the application of physical facilities and the adoption of appropriate pedagogical strategies and methods. The quality of curriculum implementation of any society is the bedrock of its political, economic, scientific and technological well-being. Little wonder, it is always said that no society can rise above the standard of its education system.

A major problem of the Nigerian education industry is how to operationalize the well-intended and articulated curriculum via feasibility and full-scale implementation commitment, Mezieobi (1993) opined that in Nigeria, a number of curriculum proposals or conceived curriculums have remained virtually inert in the sense that they were not made functional. Of course, a curriculum may be beautifully planned but will be of no relevance if it is not implemented. Here in Nigeria, there are beautifully planned and worthwhile curricula which have been crumbled and failed to produce the intended output due to improper implementation. According to Asebiomo (2009 pp 123-181), "no matter how well formulated a curriculum may be, its effective implementation is a sine qua non toward achieving the desired goals of education". This is because the problem of most programmes arises at the implementation level. Mkpa (2005) remarked that in Nigeria, it is at the implementation state that many excellent curriculum plans and other educational policies are marred. Even in some cases where attempts at ensuring actual operation, curricula have not yielded satisfying

and recommendable dividends, hence the dissatisfaction of parents and significant others with poor performance in the educational system which is characterized by crises and with curricula, marked by abysmal failure. Writing on the failure of curriculum in Nigeria, Mezieobi (1993) maintains that curriculum with all its well-conceived goals is failing, largely as a result of implementation dormancy or fault. This scenario is general and is assuming the status of national culture across every curriculum of Nigerian education system.

Izuagba and Afurobi (2009) in a study reported that the increasing complexity of the Nigerian society as a result of social change has had adverse effect on curriculum implementation at the tertiary level. As a matter of fact, tertiary educational institution in Nigeria had inadequately satisfied the man power need of the society. Unfortunately Izuagba and Afurobi (2009) state that in the last two decades graduate of this institution are found to be grossly deficient in practical and professional skills by employers of labour in public and private enterprises, Today, institutions of higher learning are not proud of their products because their performance is indication of implementation failure of the curriculum. This is because the effectiveness of practical translation of a programme is evident by the proper conduct, behaviour and the performance of the learner. The result of this is bred of unemployable graduates, which has become one of the most pernicious problems staring the Nigerian youths on the face. For this trend to be reversed there is a need for a paradigm shift. Izuagba (2006) asserts that the privatization of tertiary institutions has introduced inequality in the social system as it has created two different types of tertiary institutions - one is well funded and offers quality education and is attended by the children of the rich while the second type, offers mass schooling and is attended by the children of the common man. Ifedi (2008) supports this as he asserts that the expansion and privatization of tertiary institutions have lowered standard as graduates of these institutions have and failed to provide the expected dynamic leadership for economic and political development of the country.

Laudable efforts have been made through research which pointed at teachers' non-involvement in decision making, teachers' non-involvement and participation in curriculum development, lack of instructional materials, inadequate fund and paucity of qualified subject teachers as well as poor application among other courses. These attempts through research at providing possible solution to these problems of curriculum implementation failure have not yielded the desired result. This study hence seeks to focus on the teachers who

are in the field. The study is therefore designed to examine Curriculum Implementation Challenges and the Sustainable of Security in Nigeria.

Contemporary Challenges and Sustenance of Security

Despite the wide recognition and acceptance accorded the role of curriculum as a career of the national philosophy in Nigerian educational system, there seems to be problems in the implementation of this important educational blue-print. Many laudable goals of the curriculum have failed to pass the planning stage of the curriculum due to faulty implementation. Well-conceived curriculum ideas have remained virtually inert and dysfunctional. The outcome of this is the bred of graduates of higher institution who are found to be grossly deficient in practical and professional competences (Izuagba and Afurobi 2009). The result of this state of affair according to Idaka and Joshua (2005) is the production of half baked, ill-trained and sometimes confused graduates. This problem and other related problems should be a cause for concern to all patriotic and serious minded stake holder of the educational sub-sector.

The concept of security is not alien and has been central even in the primitive societies. The need for security necessitated the social contract in which people willingly surrendered their rights to an organ (government) who oversees the survival of all. For decades, issues relating to security tend to occupy the centre stage in the development discourse. With the end of the cold-war, there have been attempts to shift conceptualization of security from a state-centric perspective to a broader view that places premium on individuals, in which human security that embodies elements of national security, human rights and national development remain major barometer for explaining the concept. At the heart of this debate there have been attempts to deepen and widen the concept of security from the level of the states to societies and individuals, and from military to non-military issues (Krahmann, 2003). Security is considered as any mechanism deliberately fashioned to alleviate the most serious and immediate threats that prevent people from pursuing their cherished values, in Nigeria, the achievement of desired level of internal security particularly from 2007 -2013 was elusive. Perhaps a critical look at table I helps in the concise understanding of security threats in Nigeria from 2007-2011.

Table 1: Contemporary Security Threats to Nigeria from 2007-2021 and their Zone

S/N	Security Threat	Year	Political Zone
1.	Niger Delta	1999-2007	South-South
2.	Jos Crisis	1999-till date	North -Central
3.	Kidnapping, ritual killing and armed robbery	2007- also till date	The Whole of Nigeria
4.	Boko Haram Insurgency	2009-till date	North-East, North-Central and North West
5	Banditry	2015 - till date	The whole of Nigeria

Source; Nwagboso's field survey, 2011

From the table, some scholars seem to place emphasis on absence of threat to acquire values or tendencies that would undermine national cohesion and peace as criteria for; determining what security connotes (David, 2006). Security is the condition or feeling of safety from harm or danger, the defence, protection and the absence of threats to acquire values (Igbuzor, 2011). Security in an objective sense, measures the absence of threats to acquire values, in subjective sense, the absence of fear that such values will be attacked (Wolfers. 1962). In spite of its conceptual complexities, the understanding of the term shows that security is vital for national cohesion, peace and sustainable development. Thus, security has to do with freedom from danger or with threats to a nation's ability to protect and develop itself, promote its cherished values and legitimate interests and enhance the well-being of its people. For instance, Nigeria has been facing internal insecurity which is said to be the absence of those tendencies which could undermine internal cohesion and the cooperate existence of the nation and its ability to maintain its vital institutions for the promotion of its core values and socio-political and economic objectives, as well as meet the legitimate aspirations of the people. Hence, internal security implies freedom from danger to life and prosperity (Oche, 2001). It could also mean the search to avoid, prevent, reduce, or resolve violent conflict- whether the threat originates from other states, non-state actors, or structural socio-economic conditions (Stan, 2004). It is apparent from the foregoing that national security is a desideratum, *sine qua non* for economic growth and development of any country (Oladeji & Folorunso 2007). Security seems to be critical in the life of any nation as it attracts and propels development.

Factors that Affect Curriculum Implementation in Nigeria

i. **Teachers: Teachers are the first people to implement their role in the curriculum for their students. They usually select what they need to teach to their students and how it may affect the whole teaching process, their curriculum is provided to be alternative as teachers may decide what they want to teach and what the really need to teach.**

ii. **Learners: Learners may also influence the curriculum implementation in Nigeria. If teachers are provided to be the arbiters of the learning process, but the learners actually hold the key to the idea of curriculum activity. The official learning process is quite different from the one that is prescribed by the ideas of country.**

iii. **Resource materials and Facilities: It is obvious that no meaningful teaching process can be provided without resources and facilities. This factor significantly changes the whole picture of what happens. The Ministry of Education has problems providing necessary resources to all the educational institutions in Nigeria. In some schools, students have to pay for their books and even supply their schools with necessary equipment. Therefore, the implementation of curriculum is impossible without providing necessary elements of education, rural areas especially suffers from the lack of resources.**

iv. **Interest Groups: The interest group also plays the major role in the development and implementation of curriculum in Nigeria. Who are these groups that may have influence on the development of curriculum in Nigeria? They are usually holders of great financial resources and may influence the political structure of Nigeria. The curriculum may also be outdated and their implementations are not necessary and even harmful in some cases.**

v. **The School Environment: Implementation of curriculum is also affected by the school environment. For instance, if a school located in a quiet and pleasant socio-economic area, then this school may implement some extra-curricular activities that can be suited for the people of that area.**

At the same time, if a school is situated in not the best place on earth then it is highly possible that the school may change the whole curriculum to support the interest of learners., the school

environment may decide if they need to follow the curriculum.

vi. **Culture and Ideology: Culture and ideology may also change the implementation of curriculum in schools. Culture differences are present on different parts of the country and even in the same school, culture may provide various interesting decisions in implementing curriculum in Nigeria.**

vii. **Instructional Supervision: Implementation of curriculum is not possible without supervisory functions provided by the government.**

viii. **Assessment: Examination changes the way one thinks about curriculum. It provides new standards to meet and all educational institutions will have an opportunity to meet these standards or change them accordingly.**

Sustainable Development

Ake (2010) argues that the ideology of development itself became a problem for development because of the conflict between its manifest and latent functions. At the time when development seems to be conceived as the outcome of economic growth, many theorists as Rostow (1952), Harrod and Domar (1957) among others proposed models of development, generally identifying structural changes, savings and investments as the source of economic development and growth (Otto & Ukpere, 2012). The assumption was that economic growth would generate fund for investment and infrastructural development that would guarantee better living condition of people. Thus, at the tail end of 1970s it appears that economic growth in most developing and underdeveloped societies especially in the Latin America and Africa do not provide corresponding social goods. Evidently, economic growth could not sufficiently address the spate of unemployment, poverty, disease, hunger, illiteracy and ever increasing crimes and wars. Thus, post development thought has called for a return to the stress on people as both the measures and determinants of development (Rapley. 2007). This seems to have necessitated the new thinking and redefinition of development from economic growth centred perspective to human centred approach. Development is now seen as a transformation of the society, a move from the old ways of thinking, and old form of social and economic organization to new ones (Afeikhena. 2004). As Chandler (2007) rightly observed that development has been redefined, taking the emphasis away from traditional economic indicators of GDP and trade and broadening out the concept to take

in psychological and material factors related to the measurement of human well-being.

Specifically, Rodney (1972), Nnoli (1981). Ake (2010) have argued that development is multifaceted and indeed centered on man. For Nnoli (1981) development could be seen as a dialectical phenomenon in which the individual and the society interact with their physical, biological and inter human environments transforming them for own betterment and that of humanity at large and being transformed in the process. This view or conception of development according to Okolie (2009) improves man's potentials and capacities and subsequently eliminates and/or reduces poverty, penury, inequality, unemployment and generally enhances the condition for human existence and self-reproduction. Development therefore, could be construed as the process of empowering people to maximise their potentials and the ability to exploit nature to meet daily human needs. It can also be seen as a process by which quality of human lives and capacity to surmount daily needs are considerably improved. Since the end of the Cold War, security and development concerns have been increasingly interlinked (Chandler, 2007). In fact, no sustainable development can be achieved in the atmosphere of conflicts, crisis and war and Nigeria is not an exception. Understandably, security and development are two different concepts but tend to affect each other, making both concepts inseparable. This relationship has recently triggered debates on security - development nexus (Chandler, 2007; Stan, 2004).

Conclusion

Curriculum implementation is a very important aspect of the curriculum process. Hence, it is the bedrock of any school success or failure, Nigeria curriculum is bedeviled with porous curriculum implementation. The failure is attributed to implementation dormancy as well as educational policy. The study however concluded that there is need for a paradigm shift policy to result oriented policies that would meet the challenges of curriculum processes.

Recommendations

Based on the results of this study, the following recommendations were made;

I. **There is a need for a paradigm shift of some education policies such as lecturers emphasis on seminar and conferences, methodology,**

the 'customized' poor budget allocation to education among others, to result oriented policies that would ameliorate the deplorable state of curriculum implementation in the research area.

ii. **There should be a review of the curriculum to meet contemporary needs of the society, with the provision of more qualified and competent teachers to meet the challenges of the envisaged curriculum. In the new curriculum, examinations should be de-emphasized while competency should be tested by employers of labour.**

iii. **All hands should be on deck to solve the immense security challenges so that one will have a better country to live; a country where peace and tranquility will resign.**

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RATIONALE FOR CURRICULUM REFORM IN AGRICULTURAL EDUCATION FOR PEACE EDUCATION AND NATIONAL DEVELOPMENT IN NIGERIA

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Abstract
The study examined the rationale for curriculum reform in agric. education for peace and national development. Three specific objectives, three research questions and three null hypotheses guided the study. The descriptive survey research design was adopted for the study. The proportionate simple random sampling technique was used to select a sample size of 188 respondents (from a target population of 376 respondents), comprising 40 male 36 female agric. lecturers,; 54 male and 58 female postgraduate agric. education students. The instrument used was a 21-item structured questionnaire on a 4-point rating scale of Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1). The instrument was face-validated by three experts and a reliability coefficient of 0.62 was obtained with the use of Cronbach alpha reliability test. 188 copies of the questionnaire were administered to the respondents but 150 copies were returned and used for the analysis; representing 80% rate of return. The obtained data were analysed using weighted mean while t-test was used to test the null hypotheses at 0.05 level of significance. The study identified six (6) reasons adduced for curriculum reform, nine (9) values of peace education in national development and six (6) measures for restoring peace education and national development. There was no significant difference in the mean ratings of the responses of male and female lecturers of agric. education on the measures for restoring peace in educational institutions. Based on the findings, the study recommends among others, that the Nigerian government should employ competent workforce to diligently reform the agric. education curriculum in line with the psycho-productive needs of the nation.

Key words: Agricultural Education, Curriculum, Peace Education, National Development, Rationale.

Introduction

Education has been conceived by various individuals and organisations in various ways. One of such conception is that it is the leading out of the inborn powers and potentialities of the individuals in the society and the acquisition of skills, aptitudes and competencies necessary for self-realization and coping with life's problem. This definition of education connotes two things. The first is that individuals are born with certain innate qualities so that no one could be said to be completely without any human or creative qualities. This individual could however, either be aware or not be aware of these innate qualities and thus has to be helped to their utmost realization in order to be effective within the society and be useful to himself. The individual needs the right environment and activities to let him be aware of and develop them. The second connotation of the definition of education is that despite the individuals' innate potentials, there are still skills and qualities the individual needs but does not have hence has to learn (Ibiye, 2021).

In the traditional societies the business of educating the child was left in the hands of every member of the community and learning was mostly informal and impromptu. In the formal educational set-up however, programmes are carefully and deliberately planned in order to meet the needs of the society (Baker, 2014). This is necessitated by the knowledge that there are diverse people and cultures that make up these modern societies. These people have their various values and beliefs which need to be catered for. Thus, the school system has to be planned in a way that the needs of the various groups of people in the society have to be met; for instance, the Nigerian society is made up of over 250 ethnic groups which have to live together. Development of this society both socially, economically and technologically would depend greatly on how the educational system is planned to meet the needs of these diverse people. This plan is generally referred to as curriculum (Olaitan, 2000).

Curriculum thus, refers to all the planned experiences provided by the school to assist the learner in attaining the designated learning outcomes. It is the planned composite efforts of any school to guide learners towards predetermined learning outcomes (Neagly & Evans, 2016). According to Good (2012) it is a systematic group of courses or sequences of subjects and planned experiences required for graduation or certification of a learner under the guidance of a teacher in a school. To Tyler (2017) curriculum is the planned and guided learning experiences and intended learning outcomes formulated through the systematic reconstruction of knowledge and experiences under the auspices of

the school, for the learners' continuous and willful growth in personal-social competences. Taba (2009) opined that there is an order which must be followed for a more dynamically conceived and planned curriculum. This order according to Taba must be as follows:

1. diagnosis of needs;
2. formulation of objectives;
3. selection of content;
4. organisation of content;
5. selection of learning experiences;
6. organisation of learning experiences; and
7. determination of what to evaluate and the ways of evaluating it.

In the context of this paper curriculum can be considered as a systematic plan of the formal and informal content and process by which learners gain knowledge and understanding, develop skills and alter attitudes, appreciation and values under the auspices of the school.

After the implementation of the curriculum, value judgement is made to decide whether to continue the curriculum, modify it or make a complete change of all or any part of it for a more effective educational system. If the result suggests modifying it or effecting a complete change of all or any part of the curriculum, it is referred to as curriculum reform. Therefore, the process by which a curriculum planner deletes the irrelevant information or knowledge or skill in an existing curriculum and substitute with available improved ones, taking into consideration the required resources for its success is known as curriculum reform. Agric. education according to Obibuaku (1983) is the education and training given in agriculture from primary school through secondary and special schools, to the university. To Egbule (2004), it is the type of education that is employed in training learner in the improved agricultural production processes, as well as in the techniques for the teaching of agriculture. While in the view of Osinem (2008), it is a process of imparting knowledge, skills and attitudes in agriculture to the learner at any level.

The process of systematically obtaining data or information in form of facts, figures, opinion for the purpose of assessing the worth of agric. education programmes, is known as evaluation in curriculum. It entails the entire curriculum process viz: objectives, learning activities, content and their organization. Curriculum reform in agricultural education occurs when a curriculum cycle is completed and a feedback reveals a modification or a review of an existing curriculum. Curriculum reform can also occur when the objectives

of the existing curriculum are achieved and there is need to improve upon it, based on development in technology for the improvement of the needs of the society for better quality of life.

Education according to Gague (2011), is a crucial factor for Africans to enter into modern technological world. It is thus, axiomatic that the control and planning of education is an issue of crucial magnitude. In fact, the type of education suited for Nigerian population is peace education (Eze, 2001). The integration of peace attributes into all aspects of education and at all levels of education is of utmost importance because no nation can attain national growth and security in the atmosphere of war, crises, rancour among its citizens. It was on this premise that Allen (2013) averred that "in a modernizing society…only education can open the door to political control, economic advantage and peaceful coexistence". Peace education is being considered as a panacea for social reconstruction and national security in Nigeria. There is no gain saying the fact that peace education is the hub of conflict management that can proffer proactive measure to Nigerian current insecurity challenges (Mager, 2011). This is because the incessant communal and tribal boundary conflicts as well as ethnic/religious conflicts in Nigeria have, in large extent, marred the social and economic development of the nation.

National development is the extent to which a nation is able to overcome her complex socio-economic, political and cultural issues to ensure progressive change in the quality of life of all her citizens. It is a positive change and growth that takes place in a nation. Education is a potent force that can be utilized for national development. National development, to a large extent, hinges on social, economic, political and cultural changes (Achimugu, 2020). Economic development is concerned with increase in productivity and natural wealth measured by increase in the quality of life of people. On the other hand, social development is concerned with how to mobilize the human capital for enhancement of the quality of life of the majority and also to ensure maximum interaction and co-operation among the members of the society (Ivowi, 2001). Political development is concerned with conducive atmosphere necessary for all other phases of development to take place including emancipation, awareness and political stability.

It is no longer news that Nigeria is being threatened scientifically, economically, technologically as well as in governance by sister countries for the purpose of exploitation of available untapped natural resources. It has also been observed that the agric. education system in institutions of learning in Nigeria is too bookish and theoretical hence have fallen short of peoples' psycho-

productive needs. Besides, the agric. education curriculum is unable to meet up the set target time of ten (10) years in achieving the educational objectives. The educational system also witnessed paucity of qualified manpower and resources, economic recession and menace of technological war-fare (such as wanton destruction of lives and properties, cattle rustling, itinerant herders versus farmers clashes, sea piracy, kidnapping, pipeline vandalism) that had adversely affected the Nigerian educational system. The cumulative effect is unemployed youths that are orchestrating anti-social vices and criminality. It becomes necessary thus, to investigate measures for restoring peace in the nation through the educational system, specifically through agic.education. Specifically, the study sought to:

1. find out the reasons adduced for curriculum reform in agric. education;
2. ascertain the role of peace education in national development through agric. education; and
3. determine measures for restoring peace in the educational institutions through agric. education.

Research Questions

The following research questions guided the study.

1. What are the reasons adduced for curriculum reform in agricultural education?
2. What is the role of peace education in national development through agric. education?
3. What are the measures for restoring peace in educational institution through agric. education?

Hypothesis

The following null hypotheses were formulated and tested at 0.05 level of significance.

1. There is no significant difference in the mean ratings of the responses of male and female agric. education lecturers on the reasons adduced for curriculum reform.
2. There is no significant difference in the mean ratings of the responses of male and female lecturers of agric. education on the role of peace education in national development.
3. There is no significant difference in the mean ratings of the responses of male and female lecturers of agric. education on the measures for restoring peace in higher educational institutions.

Methodology

The study was conducted in the South South, Nigeria. The study adopted the descriptive survey research design. Three specific objectives and three research questions guided the study while three null hypotheses were formulated and tested at $P \leq 0.05$ level of significance. The target population for the study comprised 80 male agric. education lecturers, 73 female agric. education lecturers, 108 male postgraduate agric. education students and 115 female postgraduate agric. education students; totaling 376 respondents. The 376 respondents were spread across the five (5) higher educational institutions that are running agric. education programmes in the (2021/2022 academic session) in South South, Nigeria viz: Niger Delta University, Bayelsa (30 respondents), College of Education Sagbama, Bayelsa State (10 respondents), University of Port Harcourt (86 respondents), Rivers State University of Science and Technology (85 respondents) and Ignatius Ajuru University of Education, Port Harcourt (165 respondents); totaling 376 respondents. (Source: Field survey, 2021/2022). The proportionate simple random sampling technique was used to select a sample size of 188 respondents, comprising 40 male agric. education lecturers, 36 female agric. education lecturers, 54 male postgraduate agric. education students and 58 female postgraduate agric. education students.

The instrument for data collection was a 21-item questionnaire, structured on a 4-point response option of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) with a corresponding numerical value of 4, 3, 2 and 1 respectively. The instrument was face-validated by three experts. For purposes of determining the internal consistency of the instrument, the instrument was trial tested on 20 similar respondents in University of Uyo, Uyo and the collected and collated data were analyzed using Cronbach Alpha reliability technique which yielded a reliability coefficient of 0.65.

To ensure quality data collection, four trained research assistants joined the researcher, totaling five enumerators in collecting the data from the respondents. Each of the research assistant covered their respective higher educational institutions in Bayelsa State and Rivers State, Nigeria. One hundred and eighty-eight copies of the questionnaire were administered to the respondents but 150 copies were completely filled and returned which were used for the analysis; representing 80% rate of return. The collected data were analyzed, using weighted mean while the t-test statistics was used for testing the null hypotheses at 0.05 level of significance. The cut-off point of 2.50 on 4-point

rating scale was used to interpret the result as Agree or Disagree. This implied that any item with a mean value of 2.50 and above, was regarded as Agree, while any item with a mean value of 2.49 and below was regarded as Disagree. Also, any item with a standard deviation between 0.00 and 1.96 affirmed to the fact that the respondents were closed to the mean and the opinion of one another, in which case, the statement was adjudged valid.

In testing the hypotheses, the hypotheses of no significant difference were accepted for peace restoration measures whose p-values were greater than 0.05 level of significance. In contrast, the hypothesis of no significant difference was rejected for restoration measures whose p-values were less than 0.05 level of significance with 148 degrees of freedom.

Results

The results for this study were obtained based on the research questions answered and hypotheses tested.

Research Question 1: What are the reasons adduced for curriculum reform?

Table 1: *Mean ratings and t-test analysis of the reasons adduced for curriculum reform.*

Item No.	Reasons adduced for curriculum reform	$\overline{X}_1$	SD_1	$\overline{X}_2$	SD_2	t-cal	Remark
1.	Ineffectiveness and inability of the agric. education curriculum to meet peoples' needs.	2.65	1.16	2.83	1.18	0.97	NS
2.	Inability of the Nigerian agric. education curriculum to contend technologically (either in war -fare, business, invention, discovery, diplomacy, governance) with other countries that are far ahead.	3.08	0.87	3.11	0.93	0.18	NS
3.	Due to the scientific, economic, technological or governance threat to Nigeria by sister countries for exploiting available untapped resources.	2.67	1.22	2.70	1.30	0.16	NS
4.	Paucity of qualified manpower and resources for effective implementation.	2.62	1.19	2.68	1.33	0.19	NS
5.	Inability of the agric. education curriculum to meet the set target time of ten (10) years in achieving the objectives.	2.54	0.14	2.53	0.12	0.37	NS
6.	Partial implementation of the agric. education curriculum occasioned by the economic recession.	3.18	0.87	3.40	0.69	0.37	NS

Key: $\overline{X}$ = Mean; SD = Standard Deviation; t-cal = Calculated t-value; t-tab = Tabulated t-value ±1.96; DF = Degrees of Freedom (148); NS = Not Significant; S= Significant

The data presented in Table 1 revealed that the mean ($\overline{X}$) values for all the six (6) items

ranged from 2.53 to 3.18 and were all above the cut-off point value of 2.50. They are thus, interpreted as agree. This implied that all the respondents agreed that the six (6) statements were reasons adduced for curriculum reform in agric. education. The standard deviation values ranged between 0.12 and 1.33 which were below 1.96, indicating that the respondents were close to one another in their responses; meaning that the statements were valid.

Table 1 shows further that all the six (6) statements had their calculated t-values ranged between 0.16 and 1.91, which were less than the tabulated t-value of ±1.96 with 148 degrees of freedom at 0.05 level of significance. This means that there was no significant difference in the mean ratings of the responses of male and female lecturers of agric. education on the reasons adduced for agric. education curriculum reform. Therefore, the postulated null hypothesis of no significant difference was upheld for all the six (6) statements.

Research Question 2

What is the role of peace education in national development?

Table 2: *Mean ratings and t-test analysis of the responses of male and female lecturers of agric. education on the role of peace education in national development.*

Item No.	Role of Peace Education in National Development	$\overline{X}_1$	SD_1	$\overline{X}_1$	SD_2	t-cal	Remark
1.	It enhances economic development through trained and skilled workforce.	3.08	0.87	3.11	0.93	0.18	NS
2.	Peace education through her agencies (schools, polytechnics, universities, research institutes) impart vo cational skills to learners which help them to sustain themselves and the society.	3.32	0.73	3.20	0.95	0.81	NS
3.	Peace education fosters proper harnessing of natural resources that enhances national development.	3.38	0.49	3.29	0.71	0.90	NS
4.	It eliminates obstacles to social development and apparently enhances social development.	3.68	0.47	3.68	0.47	0.07	NS

5.	It enhances an individual to combat social problems like population explosion, poverty, sex/drug abuses, crime, and diseases.	2.74	0.37	2.63	0.48	1.43	NS
6.	It creates awareness in people of their civil rights and obligation which promote their active participation.	3.21	0.46	3.17	0.42	0.79	NS
7.	Peace education contributes to virile national integration.	3.93	0.25	3.81	0.39	0.06	NS
8.	It has broken the chain of cultural heritage that encouraged clashes, feud, tribalism and nepotism.	3.87	0.84	3.72	0.54	1.73	NS
9.	It has enabled the Nigerians to join the rat race of technological development.	3.20	0.76	3.19	0.62	0.09	NS

Key: $\overline{X}$ = Mean; SD = Standard Deviation; t-cal = Calculated t-value; t-tab = Tabulated t-value ±1.96; DF = Degrees of Freedom (148); NS = Not Significant; S= Significant

Data presented in Table 2 revealed that all the nine items had their mean values ranging from 2.63 to 3.93 and were all above the cut-off point of 2.50. Therefore, they are interpreted as agree. This implied that, all the nine statements were role of peace education in national development. The standard deviation values ranged from 0.25 to 0.95 which are below 1.96, meaning that the respondents were close to one another in their responses; meaning that the statements were valid.

The Table 2 further revealed that all the nine statements had their calculated t-values ranged from 0.06 to 1.73 which are less than the tabulated t-value of ±1.96 with 148 degrees of freedom at 0.05 level of significance. This implied that there was no significant difference in the mean ratings of the responses of male and female lecturers of agric. education on the role of peace education in national development. The stated null hypothesis of no significant difference was thus, accepted for all the nine items.

Research Question 3: What are the measures for restoring peace in the educational institutions?

Table 3: *Mean ratings and t-test analysis of the responses of male and female agric. education lecturers on the measures for restoring peace in the educational institutions.*

Item	Peace Restoration Measures	$\overline{X}_1$	SD_1	$\overline{X}_1$	SD_2	t-cal	Remark
1.	Use of Community -Based Natural Resource Management (CBNRM).	3.60	0.81	3.53	0.89	0.47	NS
2.	Use of force by government (Ministry of Education) to restore peace.	3.20	0.76	3.19	0.62	0.09	NS
3.	Use withdrawal app roach by avoidance of volatile confrontation.	3.40	0.36	3.26	0.35	0.71	NS
4.	Apply consensus to avoid trade -offs altogether, to achieve a 'win -win' outcome.	3.48	0.35	3.44	0.31	1.10	NS
5.	Apply compromise to a contending party to forgo some of her demands.	2.78	1.12	2.92	1.11	0.75	NS
6.	Adopt accommodation that values a strong and continuing relationship with one or more of the other parties.	3.73	0.44	3.78	0.76	1.38	NS

Key: $\overline{X}$ = Mean; SD = Standard Deviation; t-cal = Calculated t-value; t-tab = Tabulated t-value ±1.96; DF = Degrees of Freedom (148); NS = Not Significant; S= Significant

The data presented in Table 3 shows that the mean values for all the six items ranged from 2.78 to 3.78 and were all above the cut-off point value of 2.50. Therefore, they are interpreted as agree. This means that all the respondents agreed that the six statements were measures for restoring peace in educational institutions. The standard deviation values ranged between 0.31 and 1.12 which are below 1.96, an index that the respondents were close to one another in their responses; meaning that the statements were valid.

Table 3 further revealed that all the six statements had their calculated t-values ranged from 0.09 to 1.38, which were less than the tabulated t-value of ±1.96 with 148 degrees of freedom at 0.05 level of significance. This means that there was no significant difference in the mean ratings of the responses of male and female lecturers of agric. education on the measures for restoring peace in educational institutions. Thus, the postulated null hypothesis of no significant difference was upheld for all the six statements.

Discussion of Findings

The discussion of the findings of the study followed the order of the research questions. From the analysis of the data in Table 1, the study identified six reasons adduced for curriculum reform. The findings of this study are in line

with the report of Olaitan and Ali (2001) who decried on the inability of the agric. education curriculum to meet the set target time of ten years in achieving the objectives of agric. education. Hence Taba (2009) advocated for curriculum reform by adding shortfalls or shedding off overloading in the curriculum for the purpose of effectiveness of the agric. education programmes.

It was also found from the t-test analysis in Table 1 that there was no significant difference in the mean ratings of the responses of male and female agric. education lecturers on the reasons adduced for curriculum reform. The findings of this study agree with the submission of Schaffarzick (2010) who opined that the report of male and female agric. educators on the reasons for curriculum reform is one and the same.

The findings of the study in Table 2 shows that all the nine statements were role of peace education in national development. The findings of this study in Table 2, are in tandem with the works of Ezegbe (2013) who averred that peace education enhances economic development and national integration. Hence, Achimugu (2020) advocated that peace education should be integrated into the Nigerian education curriculum through her agencies like schools, polytechnics, universities, research institutes, to impart vocational skills to youths which will help them to sustain themselves and the society.

It was also evident from the t-test analysis in same Table 2 that there was no significant difference in the mean ratings of the responses of male and female lecturers of agric. education on the role of peace education in national development. This finding is in harmony with the view of Good (2012) who asserted that the opinion of male and female lecturers of agric. education on the role of peace education in national development, is one and the same. Hence, Ritta (2016) urged the Nigerian government to incorporate peace components into the Nigerian educational system, to enhance socio-economic, political and technological development as well as virile national integration.

The findings of the study in Table 3 found six proactive measures for restoring peace in the Nigerian educational system. The findings of this study are in congruent with the report of Olaitan (2000) who advocated for the introduction of government force, withdrawal approach, compromise, consensus and accommodation approaches to restore peace in educational institutions that are bedeviled with volatile confrontation. It was also evident from the t-test analysis in Table 3 that there was no significant difference in the mean ratings of the responses of male and female lecturers of agric. education on the measures for restoring peace in Nigerian educational system. The findings of this study agree with the evidence given by Neagly and Evans (2016) who averred that the

submissions of male and female lecturers of agric. education on peace restoration measures, were same measures opined by female lecturers of agric. education in restoring peace in Nigerian educational system. It was on this premise that Egbule (2004) and Osinem (2008) maintained that the incorporation of peace components in the agric. education curriculum of the Nigerian educational system is a sine qua non panacea for sustainable national development. The findings of the researchers cited in this study corroborates the findings of this study and had further improved the validity and reliability of the results.

Conclusion

Agricultural education in educational institutions of learning had fallen short of peoples' psychoproductive needs due to the inability of agric. education curriculum to meet up the set target time of ten years in achieving the educational objectives. Consequently, there is unemployment, hunger, youth restiveness, crime and criminality in the nation. The study therefore, identified six reasons adduced for agric. education curriculum reform, nine values of peace education in national development and six measures for restoring peace in educational institutions of learning in Nigeria. There was no significant difference in the mean ratings of the responses of male and female lecturers of agric. education on the measures for restoring peace in educational institutions of learning. Therefore, if the findings of this study are developed into a training manual and packaged for students, agric. educators, administrators, policy makers in education, curriculum planners and stakeholders in the education industry, it will restore peace and ultimately sustainable national development.

Recommendations

Based on its findings and conclusion, the study recommends that:

1. The Nigerian government should employ competent workforce to diligently reform the agric. education curriculum in line with the psycho-productive needs of the nation.
2. Government should provide adequate educational resources for her workforce to diligently reform the agric. education curriculum.
3. Agric. educator or administrator should select an apt approach, in relation to the nature of conflict, to restore peace in the academic environment.
4. Government should increase the budgetary allocation for vocational agric. education and use her educational agencies to effectively monitor and control the administration and supervision process of vocational agric. education programmes in educational institutions.

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EFFECT OF RECIPROCAL TEACHING METHOD ON ACADEMIC ACHIEVEMENT OF JUNIOR SECONDARY SCHOOL STUDENTS' IN HOME ECONOMICS IN NWANGELE L.G.A OF IMO STATE.

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Abstract

Reciprocal teaching is one of the 21st century teaching methods. RT is an instructional activity in which students become the teacher in small group reading sessions after being exposed to it by the teacher, as the model. Low interest in Home Economics at the Junior Secondary School level is a concern to both the teachers and stakeholders in the field of Home Economics. To this, the researchers thought, could it be from inappropriate teaching methods? could the use of reciprocal teaching method enhance students' academic achievement in Home Economics? Investigating RT on its effect on home economics will enable students read, and aptly interpret, and apply tests, thereby improving their understanding of Home Economics, leading to high academic achievement. This quasi-experimental study investigated the effect of reciprocal teaching on Junior Secondary School students' academic achievement in Home Economics in Nwangele L.G.A. of Imo State, Nigeria. Two research questions and two hypotheses guided the study. The population constitutes all 260 Junior Secondary School students II in Nwangele Local Government Area of Imo state . The purposive and simple random sampling techniques were used to select the school sample and 96 JSS II students drawn from two intact classes in two co-educational secondary schools offering Home Economics in Nwangele Local Government Area in Orlu Education Zone 1of Imo State. An instrument named Home Economics Achievement Test (HEAT), was developed by the researchers and used for data collection, face validated by experts in Measurement and Evaluation, Home Economics and Curriculum Studies. The HEAT was subjected to reliability analysis using test-re-test method and a reliability index of 0.70 was established using, Pearson's Product Moment Statistic. The research questions were answered using mean and standard deviation, while the hypothesis were

tested using Analysis of Covariance at 0.05 level of significance. The findings of the study include that, students taught Home Economics with reciprocal teaching method performed better than students taught with lecture method. Recommendations were made which include, lecture method should be used minimally in the teaching and learning of Home Economics, since male and female students achieved almost equally.
Keywords: Home Economics, Reciprocal Teaching, Academic Achievement.

Introduction

Home Economics is a field of learning that provides necessary skills, knowledge and attitudes to individuals for self-actualization and fulfillment through its various career opportunities. Uzoka (2013), viewed Home Economics is an educational discipline that conglomerates aspect of social and natural sciences. It includes how individuals progress and function in family, work and community settings and how they relate to their physical, social, emotional and intellectual environment. Home Economics as a vocational subject that deals with understanding, aptitudes and proficiencies that fit one wholly for work or business and it offers opportunities for entrepreneurship.

Many countries of the world including Nigeria place much importance to technical and vocational education, The Federal Republic of Nigeria assigned Home Economics a major position in the development of the nation, hence, it clearly stated that technical and vocational education shall give drill and influence the necessary skills to individuals for self-reliance economically (FRN,2013). Home Economics is the unifying of knowledge from many fields in solving personal and home problems and also concerned primarily with strengthening family life. It places emphasis on acquiring techniques and skills of living. It is the science of the home, the education of human and physical powers affecting homes and families and utilization of knowledge for the advantage of mankind, therefore learning Home Economics as well as learning other technical and vocational subjects is very pertinent for the individual's growth and that of the society. The poor enrollment of Home Economics students in the Senior Secondary School Certificate Examination (SSSCE) is so alarming that, immediate action needs to be taken on areas such as teaching methods, instructional materials, teacher competency, and teacher education programme curriculum. Students' poor academic achievement seems to hamper the contributions of Home Economics learning for national development. If students have negative attitudes and perform poorly in Home Economics, there is a limit to which they will maximize the potentials of Home Economics to solve life

problems.

The success or failure of any government is measured by the degree of attainment of human development or the level of poverty predominant among the people Okafor, (2014) asserts. Thus Home Economics sets to achieve with the utilization of participatory and 21st century teaching methods and strategies. Understanding of a concept depends on proper perception and interpretation of the concept. Learning manifests when one is able to read, understand, retain, analyze, and apply what was learnt aptly in practical terms. Thus, reciprocal teaching is an active teaching method that provides learners with an enabling environment to read, interpret and apply knowledge gained in practical situations such as in Home Economics where reading and interpretation of tests are pertinent for a good result.

Concept of Reciprocal Teaching

Reciprocal teaching refers to an instructional activity in which students become the teacher in small group reading/activity sessions (Eva, 2015). According to Eva, the teacher model or illustrate, then help students learn to guide group discussions using four strategies- Prediction, Clarifying, Question-generation and Summary. Furthermore, reciprocal teaching is an action where students talk with their teachers about the substance and meaning of text they just read. The teacher illustrates how it is done and ensure that students understand how to summarize, ask questions and make predictions, and gradually reduce teacher's involvement so that students take the lead. Following the teacher's guide, students are made to focus on how the four strategies (PCQS) works, thereby effectively utilizing the strategies during learning sessions. Students are then not only responsible for reading the text, but also for learning and doing it, (Donald, 2014). Learners are steadily stimulated to take on the teacher's role as they develop more confidence and become skillful with this method. Teachers demonstrate to learners how to predict, how to clarify, how to ask teacher questions, and how to summarize. In this regard, 21st Century teachers should recognize that they have three primary responsibilities during reciprocal teaching of Home Economics. They include;

1. Before reading/practical in Home Economics activate prior knowledge of words or ideas that learners are going to encounter during instruction.
2. Monitor, guide and encourage individuals or groups in their use of the four strategies:
   - Predicting motivates learners to read/practice and it helps them to form a purpose for reading/construction in garment making in Home Economics.

- Clarifying words and ideas help learners make connections between different sections of the text/clothing construction rather than skipping unknown words and ideas.
- Questioning promotes learners' comprehension, because learners must be able to understand what they have read/constructed in order for them to start asking their peers high-order questions about complex patterns.
- Summarizing help learners to concentrate on the main idea and supporting details of the text/work done.

3. After reading/construction, encourage learner-reflection and ask the learners to share which strategy they thought had helped them the most and why.

Palinscar and Brown (1984) identifies the following reasons why RT is so effective;

The methods engage students in a set of activities that help them form a new conceptual model of the task of reading.

The activity generated under reciprocal teaching involves students in using the reading strategies and meta-cognitive skills necessary for expert reading. A more critical point is that the teacher model experts strategies in problem context, shares directly, and immediately with students.

The teacher-learner interaction inspires students to observe and then reflect on their own performance comparative to the teachers'. For instance in Home Economics, teaching of basic skirt block pattern. The teacher introduces the procedure for designing a skirt block pattern which the students observe and put into action through self-performance and evaluation.

Reciprocal Teaching Instructional Strategies

Reciprocal teaching refers to the instructional method in which students play the role of the teacher in small groups. The students watch their teacher, model the teaching as a guide to them before they take turns to teach themselves. (Foster & Rotoloni, 2005) opines that reciprocal teaching is a supportive learning instructional method in which natural dialogue models reveals learners' thinking processes about a shared learning experience. The dialogue is organized by use of four strategies: prediction, clarifying, questioning and summarizing

Predicting

Predicting is the ability of the students to guess what the script/text says next: or

the character's next line of action in a story. It requires that they consider what has already taken place and use their imagination to think ahead. (Doolittle et al, 2006) believes that predicting involves the readers to combine their prior knowledge or background knowledge with what they have gathered from the text to say what is likely to come next. It also provides an overall rationale for reading and the rationale is to confirm or disconfirm self-generated hypothesis. For example, here, the Home Economics students can predict what next to prepare with a constructed pattern which is using the drafted pattern to produce clothes (shirt, skirt, gown,etc.)

Clarifying

Clarifying is a situation where readers are able to trace the meaning of the difficult words or other unfamiliar aspects of the text. Doolittle et al ,(2006) asserts that in clarifying, students identify unclear, difficult and unfamiliar aspects of the text. Some of these aspects comprise difficult sentence or passage structure, unacquainted vocabulary, vague references, or obscure concepts. Students can also share their own thought on how they understand the material, if it will help their classmates. Clarifying motivates the reader to re-read the text for better understanding. For instance, during the practical sessions, in any Home Economics practical class, areas that are difficult to understand are cleared. For example, any pattern to be constructed are made clearer to the students for easy understanding and construction.

Questioning: This is simply posing some questions centered on the text to be read for proper guidance as one reads along. Questioning according to Doolittle, Hicks, Triplett, Nichols and Young (2006) involves the identification of information, theme, or concepts that are essential and significant enough to warrant considerations. The questions should be comprehensive enough so as to enable the students identify the major elements in the text. Questioning could also help the reader to monitor or assess his/her own understanding of the text and this assessment of one's understanding and thought process is referred to as meta cognition. The questions may border on the unclear part, puzzling information and connections to concepts already learned. It also allow students to identify areas that are confusing, share their needs for clarifications and ask if there are corrections with material already read. So, questioning enables the student to think critically and to get their classmate to do the same. For example, before constructing a pattern, say skirt, shirt or gown, students ask questions to

clarify areas they are confused.

Summarizing

Summarizing has been defined as "the process of identifying the important information, theme, and ideas within a text and integrating these into clear and succinct statements that links the essential learning of the text (Doolittle et al,2006).Summarizing is a great method to help students get to know that what they read is through summarizing it. Summarizing arms the students with the skills of creating a context for understanding the specific of a text (Doolittle et al, 2006). 1t is best done first at the sentence level and then subsequently at the paragraph and passage levels. In teaching pattern drafting in Home Economics, the students are made to first understand basic functions of a pattern in clothing construction and the different parts of a pattern. With this, students can summarize what is taught by integrating it into construction of a basic pattern such as shirt, skirt, gown or any other pattern as required.

Everton (2016), did a study on reciprocal teaching as a reading comprehension strategy among first year industrial technology teacher-education majors which include vocational educators at the University of technology, Jamaica. A total of 133 students were involved in the study. The study primarily investigated the effect of reciprocal strategy in improving reading comprehension scores at the tertiary level and its perceived efficacy by the participants. The findings revealed that reciprocal teaching intervention significantly improved the group mean and individual post test scores of the treatment group over those of the control group. They favourably perceived and recommended that reciprocal teaching should be implemented across all faculties preferably among the first year students

In the study of Gbemisola (2015), on reflective-reciprocal teaching strategy on student teacher's achievement and attitude on Economics, the study adopted the quantitative method of inquiry, using specifically a pre-test, post-test quasi-experimental design. The sample for the study consisted of 178 second year Economics student teachers; the participants were randomly assigned to an experimental group or a control group. The pre-test scores of the participants were obtained using achievement test, and numerical ability test questionnaire. Participants in the experimental group were exposed to six weeks of teaching using the reflective-reciprocal teaching strategy while participants in the control group were exposed to the traditional method of teaching. The quantitative data collected was analyzed using descriptive statistics in the form of proportions, frequencies, means and standard deviations, independent t- tests and paired t-tests to compare differences between the two groups, Analysis of Covariance (ANCOVA) and ANOVA for repeated measures. The findings of the study

showed that there exists a significant difference in the achievement of student-teachers in Economics when taught using reflective-reciprocal teaching strategies compared to the conventional method.

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Another study by Agoro and Akinshola (2013) was on differential effectiveness of reflective reciprocal teaching and reflective reciprocal peer tutoring on pre-service teachers achievement and science process skills in Integrated Science in the government owned eleven colleges of education in South West of Nigeria. The pretest- posttest, control groups, quasi experimental design with a 3x2x3 factorial matrix was used. Two hundred and ninety-four pre-service science teachers with high, medium and low numerical ability constituted the sample. The result showed that Reflective-Reciprocal Teaching as well as the Reflective-Reciprocal Peer Teaching Strategies enhanced pre-service science teachers' achievement and science process skills in integrated science when employed by the teachers of the subject.

Again,Obunadike (2011) carried out a study on relative effectiveness of reciprocal peer tutoring and lecture method of instruction on students' achievement in clothing and textiles. It was a quasi-experiment study. Six research questions and six hypotheses formulated to guide the study. The entire population was made up of the entire junior secondary 11 students in the 33 state owned co-educational secondary schools in Anambra State. Findings of the study revealed that although students in both the experimental(RPT) and control(LM) groups were equivalent at the pre-test, the RPT group performed better than those taught with LM. Therefore RPT had relative effectiveness on students' achievement than LM .

Based on the forgoing, and to the best knowledge of the researchers, not much research had been done empirically on reciprocal teaching at Junior Secondary School education level. Thus, the researchers think it is a gap in knowledge which this study intends to fill.

RESEARCH QUESTIONS

Two research questions and one hypothesis guided the study;

1. What are the mean achievement scores of students in Home Economics test when taught using reciprocal teaching and lecture methods?
2. What are the mean achievement scores of male and female students in Home Economics test when taught using reciprocal teaching and lecture methods?

Hypothesis

The following null hypothesis was formulated and tested at 0.05 level of significance:
There is no significant difference in the mean post-test achievement scores of male and female students in Home Economics when exposed to reciprocal teaching and lecture methods.

Method

The study is a quasi-experimental study which used pre-test, post-test , control group design. Group A and B constitutes the experimental and control groups respectively. The population constitutes all 260 Junior Secondary School students II in Nwangele Local Government Area of Imo state .The purposive and simple random sampling techniques were used to select the school sample and 96 JSS II students drawn from two intact classes in two co-educational secondary schools offering Home Economics in Nwangele Local Government Area in Orlu Education Zone 1 of Imo State. An instrument named Home Economics Achievement Test (HEAT), was developed by the researchers and used for data collection, comprising of 50 test items and was validated by experts in Measurement and Evaluation, Home Economics , and Curriculum Studies. The Experimental group was assigned the Reciprocal Teaching Method and the Control group , Lecture method. Using test re-test method, a reliability index of 0.70, using Pearson's Product Moment Correlation Statistic was established. Data collected during the pre-test and post-test administration were statistically analyzed using Analysis of Covariance (ANCOVA) for the null hypothesis and was tested at 0.05 level of significance. The research questions were answered using mean and standard deviation.

Results

Research Question 1:

What are the mean achievement scores of students in Home Economics test when taught using reciprocal teaching and lecture method?

Table 1: Pretest and Posttest Mean Achievement and Standard Deviation Scores of Students in Home Economics Achievement Test.

Teaching Methods	Number of Students	Tests				Mean Gain
		Pre test		Post test		
		$\bar{X}$	SD	$\bar{X}$	SD	
Reciprocal Teaching	46	12.33	2.88	21.87	3.71	9.54
Lecture Method	48	12.56	3.10	17.15	2.63	4.59

The data presented in Table 1, showed that students taught Home Economics using reciprocal teaching method had a mean achievement score of 12.33 and standard deviation of 2.88 at pretest and a mean score of 21.87 and **S**tandard **D**eviation of 3.71 at posttest with pretest posttest gain of 9.54. The data also revealed that students taught Home Economics using lecture method had a mean score of 12.56 and standard deviation of 3.10 at pretest and a mean score of 17.15 and **S**tandard **D**eviation of 2.63 at posttest making a pretest posttest gain of 4.59, indicating a high achievement. This finding indicated that students taught Home Economics using reciprocal teaching method had a higher mean achievement gain score than those taught using lecture method.

Research Question 2

What are the mean achievement scores of male and female students in Home Economics test when taught using reciprocal teaching and lecture method?

Table 2: **Pretest and Posttest Mean Achievement and Standard Deviation Scores of Students in Home Economics Achievement Test.**

Teaching Methods	Test	Gender							
		Male No of Students			Mean Gain	Female No of Students			Mean Gain
			$\overline{X}$	SD			$\overline{X}$	SD	
Reciprocal	**Pretest**	28	40.43	16.39		18	39.73	15.90	1.77
	Posttest	28	43.13	19.09	2.7	18	41.50	20.82	
Lecture	**Pretest**	20	39.87	21.90	2.27	28	40.13	18.40	1.74
	Posttest	20	42.14	16.74		28	41.87	19.91	

The data in Table 2 above revealed that male students in reciprocal treatment group had a mean score of 40.43 and SD of 16.39 at pretest while in the post-test, mean score of 43.13 and SD of 19.09 with achievement gain score of 2.7. The female had a mean score of 39.73 and SD of 15.90 at pretest while in the post test the females had 41.50 and SD of 20.82 with achievement gain score of 1.77 which is lower than the males in the treatment group. Revealing further, male students in the control group (lecture method) had a mean score of 39.87 and SD of 21.90 and mean of 42.14; SD 16.74 at pretest and post-test respectively with achievement gain score of 2.27. The result went further to show that female

students in the control group had a mean score of 40.13 and standard deviation of 18.40 at pretest and post-test, mean score of 41.87 and standard deviation of 19.91 with an achievement gain score of 1.74 which is lower than the male students in the control group. This inferred that the males recorded a higher mean achievement than their female counterpart.

Hypothesis

HO: There is no significant difference in the mean post-test achievement scores of male and female students in Home Economics when exposed to reciprocal teaching and lecture methods.

Table 3: Analysis of Covariance (ANCOVA) of the Mean Achievement Scores of Male and Female Students in Home Economics using Reciprocal Teaching and Lecture Methods.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	206.568[a]	2	103.284	10.763	.000
Intercept	309.337	1	309.337	32.234	.000
PRETEST	122.509	1	122.509	12.766	.001
GENDER	4.485	1	4.485	.467	.498
Error	412.650	43	9.597		
Total	22620.000	46			
Corrected Total	619.217	45			

The data in table 3, showed p-value of 0.498 which is greater than the alpha-value of 0.05 . This revealed that, there was no significant difference in the mean achievement scores of male and female students taught Home Economics using reciprocal teaching and lecture methods (0.498>0.05). Therefore, the null hypothesis which stated that there was no significant difference in the mean achievement scores of male and female students taught Home Economics using reciprocal teaching and lecture method was accepted.

Discussion of Results

On the effects of reciprocal teaching and lecture method on students' academic achievement in Home Economics as presented in table 1, the result showed that students taught Home Economics using reciprocal teaching method had a better achievement than those taught using lecture method. This is based on the fact that the mean achievement scores of reciprocal teaching is higher than the average mean of lecture method as shown in the analysis of research question 1. It could be concluded that reciprocal teaching with a higher mean of 21.87 resulted in better achievement than the lecture method with a lower mean of

17.15. This was as result of the students' exposure to reciprocal teaching that aided their well understanding and applications of Home Economics, culminating in a high academic achievement. This is in consonance with those arrived at by Everton (2016), Gbemishola (2015), Agoro and Akinshola (2013) and Obunadike(2011) who reported that reciprocal teaching is more efficacious when effectively used by the teachers in applying to new contents and texts, clothing and textile and is better used in the understanding of subjects than lecture method.

By this finding, it is clear that though academic achievement of students taught Home Economics using lecture method is not all that poor, reciprocal teaching method seems to be superior. This is because the systematic nature of reciprocal teaching has been found very rewarding in the teaching and learning of subjects like, Economics, English Language, and clothing and textile, Gbemishola (2013), and Obunadike (2011)

On the effects of reciprocal teaching and lecture method on male and female students' academic achievement in Home Economics, the result revealed that males recorded a higher academic achievement mean scores of 42.14 than the females. On the test of the hypothesis, it showed that there was no significant difference in the academic achievement means scores of male and female students taught Home Economics using reciprocal teaching with p-value of (.498) which is greater than the alpha level of (0.05). Nnamani and Oyibe (2016) found the mean achievement scores of females to be higher than the mean achievement scores of male students in social studies. Furthermore, the findings of Odaboyi (2015) showed a significant difference in the mean scores of the males, meaning that males gained more from Jigsaw method of teaching than the females. Hence, this result indicated that there was equal opportunity given to both male and female students during teaching and learning of Home Economics using reciprocal teaching and that gender was not a barrier in the understanding of the subject.

Conclusion

The result of the study identified that male and female students achieved better when taught Home Economics using and RT than the Lecture method and that male and female students achieved equally when taught Home Economics using Lecture method.

Recommendations

1. Teaching with reciprocal teaching method is different from that of

normal conventional teaching. As a result of this, Home Economics teachers should be trained on how best to develop and use reciprocal teaching method so as to achieve its objectives of attaining a better achievement.

2. Male and female students should be given equal opportunities when using reciprocal teaching methods to enhance a better understanding and utilization of RT method.
3. Lecture method should be used minimally in the teaching and learning of Home Economics since male and female students achieved almost equally.

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