EVALUATE THE IMPLEMENTATION OF PHYSICS CURRICULUM IN SENIOR SECONDARY SCHOOL USING TYLER`S OBJECTIVE MODEL IN NORTH- CENTRAL STATES, NIGERIA

[1]Busari TAOFEEQ; [2]C. S. GANA., [3]R. W. GIMBA & [4]K. A. SALAKO

[1, 2 & 3]Science Education Department, School of Science and Technology Education

[4]Physics Department, Federal University of Technology Minna

Corresponding Email: taobush2003@gmail.com Phone:+234-703-229-7557

Abstract: *The study evaluates the implementation of physics curriculum in senior secondary school using Tyler`s objective Model in North- Central States, Nigeria. This study adopted survey design. The population for this study comprised of entire 548 public schools physics teachers in North Central Nigeria. The sample population for this study was 91 physics teachers. A researcher instrument named 'Teachers' Evaluation of Curriculum Implementation Questionnaire (TECIQ) was used for the study. A four-point type Likert scale ranging from strongly agree (SA) to strongly disagree (SD) while 2.5 mean value was the threshold of the instrument. Tested the reliability of the instrument with Cronbach Alpha, the study obtained 0.90 and 0.96 for sections B and C respectively. The findings show that, although there was no significant difference in the evaluation of implementation of physics curriculum by physics teachers based on the year of experience, a significant difference existed in the level of compliance by teachers based on gender. In so doing, student's performance in physics could be influenced through proper evaluation of the physics curriculum implementation by the physics teachers. As a result, interactive method of instruction should be introduced to enhance proper implementation in the North- Central States, Nigeria*

Keywords: Curriculum implementation, level of compliance, performance and evaluation

INTRODUCTION

Science is an area of learning that is absolutely necessary for development because of its linkage to technology and industry (Abubakar, 2015). Scientific development is essential for better quality of life, the sustainable development of the planet, and peaceful coexistence among people (Omwirhiren, 2015). From the immediate basic essentials of life such as access to water, food and shelter, to other issues such as management of agricultural production, water resources, health, energy resources, biodiversity, conservation, environment, transport, communication etc. Science provides the basis for action at local, regional, national and transnational levels (UNESCO, 2015). Science and technology have been identified as the key drivers for growth and sustainable social development and transformation of nations, which could lead to industrialization (Uza, 2013).

Science education aims at helping individual learner to gain a functional understanding of scientific concepts and principles linked with real life situations and acquire scientific skills, attitudes and values necessary to analyze and solve day-to-day problems (Batomalaque, 2015). This portends the reason why basic sciences are core subjects in the elementary and secondary schools world over. It emphasizes the fact that all citizens should achieve some degree of scientific literacy to enable them participate effectively as citizens in the modern societies.

In accordance to this, Ogunleye and Fasakin (2011) emphasized the importance of scientific knowledge in boasting the national prestige, national income and even international rating

of a country like Nigeria. Science and technology are key drivers to any nation development, because technological and scientific revolutions underpin economic advances, improvements in health systems, education and infrastructure (Lee-Roy, 2012). Science provides a body of knowledge for use in addressing various forms of human, material and environmental problems. It can also be viewed as composed of two major complementary modes: accumulation of knowledge through exploration and discovery efforts about the natural world, and the use of such knowledge for human and material development through science teaching.

The deficiencies in science teaching range from; non coverage of contents in schemes of work, non-giving and marking of assignments, non-supervision of instruction, non-application of improvisation knowledge in instruction to non-taking out of students to field experiences (Ajaja, 2009).

Again, all these tend to suggest that teachers are to be held responsible for the lack of interest of students in science which results in poor learning outcomes among the science students. Among these science subjects: biology, chemistry, integrated science and physics taught in Nigerian secondary schools.

Specifically, physics is one of the bedrock of scientific and technological development worldwide. Physics is an academic discipline in Nigerian schools that serves both as an essential ingredient as well as bedrock of all technology (Busari, 2014). For the proper understanding of technical and indeed technological subjects, physics plays a major role. Physics is in fact "science in action". Physics in action focuses on physics in everyday life as its application in sports and medicine are vivid and often revealing (Usman, 2008). According to Busari (2014), the increasing importance and attention given to physics stem from the fact that without physics, there is no science, there is no modern society. In other words, physics is the soul of technology and an indispensable single element in modern societal development.

Physics as one of the branches of science its important subject that must be well known and passed before any science student could further in the line of science in any tertiary institution. The importance of Physics cannot be over emphasized as it forms the basis for technological advancement of any nation. Physics is applied to almost every human activity, and virtually every profession involves some element of physics (Omiola *et al*. 2012). However, students need to be encouraged to know the importance of Physics in national development, government and educational practitioners should also play major role in employing qualify personnel to teach the subject.

Curriculum is a particular form of specification about the practice of teaching; it is a way of translating any educational idea into hypothesis testable in practice (Blenkin, 2012). In Nigeria, secondary school curriculum is designed to encourage all students to achieve their spiritual, intellectual and social potential as well as to understand the relevance of learning in their daily lives (Ali & Ajibola, 2015). It is important to note that, it is one thing to design curriculum, it is another thing to implement it effectively.

Curriculum, according to Ali and Ajibola (2015), is defined as the planned experiences provided by the school to assist the pupils in attaining the designated learning outcomes in the different school subjects' pupils choose to study in the school. Another dimension to curriculum is that the learning of content may not result in achieving an objective if both contents and objectives are not closely related. The achievement of the objectives is partly determined in terms of how well the curriculum is implemented.

The implementation of the curriculum is the aspect that concerns the nature and scope of classroom teacher and evaluation of learning achieved by students who were taught. Specifically, the process of curriculum implementation entails interaction between the curriculum planner, the teacher, the learners and the learning environment. The teacher is the major implementer of the curriculum since what the teacher does with it in the classroom determines whether the set goals would be achieved or not. Though such factors as students' interest and readiness and more

importantly physical environment (for example availability and adequacy of learning materials and equipment) may be constraining, a knowledgeable and competent teacher would always be able to make the best out of any situation.

The implementation of curriculum is facing some challenges, one of which is the lack of teachers' participation in decision making and curriculum planning. Teachers are not involved in curriculum planning, whereas, Danbatta (2013) asserted that teacher efficiency could make or mar curriculum implementation since the responsibility of interpreting and putting the curriculum into use solely rests with the teacher. Another issue is that the Nigeria curriculum covers too much information and suggests redesigning its content to remove unnecessary and irrelevant facts. What aggravates the situation is that teachers are unprepared to cope with growing curricula, which means that instruction becomes ineffective, inappropriate and often inaccurate. Over the years, the issue of policy changes in the educational system which started with the 6-3-3-4 system, 6-5-4 system also came and now the 9-3-4 system among others which has led to confusion in learners as to which subjects are to be offered in certificate examinations because subjects offered at certificate examination changes alongside the changes in educational system. Implementation in this study is the teaching of physics curriculum content to secondary school students.

However, in the present study, the Tyler's goal attainment model or sometimes called the objectives-centered model which is the basis for most common models in curriculum design, development and evaluation will be used. The Tyler model comprised of four major parts. These are:

i. Defining objectives of the learning experience;
ii. Identifying learning activities for meeting the defined objectives;
iii. Organizing the learning activities for attaining the defined objectives; and
iv. Evaluating and assessing the learning experiences.

In this, the researcher intends to use the evaluation component of the model. The Tyler Model begins by defining the objectives of the learning experience. These objectives must have relevancy to the field of study and to the overall curriculum (Abdulkarim, 2012) in order to bridge the gender gap among physics teachers.

Gender has been defined as those characteristics of men and women, which are socially determined in contrast to those which, are biologically determined (Busari, 2014). What this means in effect is that gender roles for men and women vary from culture to culture and even within the same culture, from one social group to another. In our daily parlance, gender is used to discuss social and psychological respects that are regarded appropriate to men and women thus terms as 'gender-role', 'gender-stereotype' and 'gender-identities' implies that these are subject to social and cultural influences (Adolphus & Mumuni (2016). Another variable that can influence curriculum implementation in physics is year of experience.

Teacher years of experience have to do with the increased awareness of diversifying search for new ideas, new commitments and new challenges. Teachers' year of experience and knowledge of using digital technology for teaching of sciences effectiveness. It is worth noting that experience gained over time, enhances the knowledge, skills, and productivity of teachers. Nevertheless, (Ilomaki & Lakkala, 2018). Therefore, researcher intend to carry out evaluate the implementation of Physics Curriculum in Senior Secondary School using Tyler`s objective Model in North- Central States, Nigeria.

Statement of the Problem

One of the foremost goals of science education in Nigeria is to produce scientists for national development Federal Republic of Nigeria (FRN, 2013). In spite of Nigerian government's desire to promote science education programme in the country, the quality of science students, in particular physics students produced by the secondary schools seem to be deteriorating. The teaching

and learning of Physics need serious attention in order to enhance a sustainable technological development in Nigeria. It has been shown that instructional practices depend on what teachers bring to the classroom and that professional competence is a crucial factor in classroom and school practices. Over the years, the problem of under achievement of science students in Physics has been a general problem. One is led to observe that despite the importance of physics as a science subject, evidence have shown that students are not doing well in this subject at West African Secondary School Certificate Examination (WASSCE).

Furthermore, studies also identified low learners' motivation among students, inadequate teaching and learning materials, and limited learning activities in Physics classrooms also poor syllabus coverage as some of the major concerns in physics curriculum implementation (Adeyemo, 2012; Wafula, 2019; Adolphus, 2020),. Unfortunately, fewer studies had focused on evaluation of the implementation of the Physics curriculum in secondary schools in North Central, Nigeria.

The persistent, poor performance and low enrolment in physics had been attributed to the use of regular teaching method, low learners' motivation, inadequate learning material, minimal learning activities and poor syllabus coverage. Thus, investigation into this problem was to provide suggestions on effective implementation of the Physics curriculum.

Consequently, there is need to empirically evaluate the implementation of the senior secondary school physics curriculum in its entirety and to what extent has the implementation of the physics curriculum succeeded in achieving the set objectives of physics education, with regards to achieving aims and objectives, content coverage, teachers' utilization of the available input factors, level of compliance of teachers with the recommended instruction methods and evaluation techniques used by physics teachers among others in assessing their students. Therefore, this study seeks to evaluate the implementation of senior secondary school physics curriculum using Tyler objective models in North-Central States Nigeria.

Aim and Objectives of the Study

The study is aimed to evaluate the implementation of physics curriculum in senior secondary School using Tyler`s objective Model in North- Central States, Nigeria.

Specifically, the study is to achieve the following objectives to:

1. Examine the mean evaluation of teachers on the implementation of performance objectives of senior secondary schools physics curriculum.
2. Find out the mean of evaluation of teachers on the implementation of performance objectives of senior secondary schools physics curriculum based on their years of teaching experiences.
3. Find out the mean of evaluation of teachers on the implementation of performance objectives of senior Examine the mean of level of compliance of learning activities in the physics in the implementation of physics curriculum in the secondary schools.
4. Examine the mean of level of compliance of learning activities in the physics in the implementation of physics curriculum in the secondary schools based on gender.

Research Questions

The following research questions were raised to guide the study:

1. What is the mean evaluation of teachers on the implementation of performance objectives of senior secondary schools physics curriculum?
2. What are the mean of evaluation of teachers on the implementation of performance objectives of senior secondary schools physics curriculum

based on their years of teaching experiences?

3. What is the mean of level of compliance of learning activities in the physics in the implementation of physics curriculum in the secondary schools?
4. What are the mean of level of compliance of learning activities in the physics in the implementation of physics curriculum in the secondary schools based on gender?

Research Hypotheses

The following null hypotheses will be formulated and tested at $p \leq 0.05$.

HO_1: There is no significant difference in the evaluation of teachers on the implementation of performance objectives of senior secondary schools physics curriculum based on their years of teaching experiences

HO_2: There is no significant difference in the level of compliance by teachers on implementation of Physics curriculum in senior secondary school based on gender.

METHODOLOGY

The research adopted descriptive survey design for this study. The independent variable of the study is evaluation of the implementation of physics curriculum performance and level of compliance with appropriate teaching methods while dependent variable were teachers' implementation of physics curriculum and the moderating variable were gender and year of experience. The population for this study comprised of entire 548 public schools physics teachers in North Central Nigeria, random sampling technique was used to sample 91 senior secondary schools physics teachers in North-Central Nigeria. The sample is in accordance with Krejcie and Morgan (1970) sample size determination table. This method give each member of the population an equal chance of being represented. A researcher instrument named 'Teachers' Evaluation of Curriculum Implementation Questionnaire (TECIQ) Teachers' Evaluation of Curriculum Implementation Questionnaire (TECIQ) is divided into section A, B and C. Section A comprised of bio-data, Section B comprised of items on evaluation of the implementation of physics curriculum performance while section C comprised of items on level of compliance with appropriate teaching methods recommended for use in the physics curriculum. A four-point type Likert scale of Strongly Agree (SA) was awarded 4 points, agree (A) was awarded 3 points, disagree (D) was awarded 2 points and Strongly Disagree (SD) was awarded 1 point. A grand mean score of 2.5 was used to determine the decision mean to each section of the questionnaire. A four-point type Likert scale was used because is a force, which essentially means forcing a respondent to form an opinion, either way without stay neutral.

To determine whether the research instruments was actually relevant to the constructs to be measured and how related they are to the set criteria, the construct and criterion validity of the instruments was carried out by Two senior lecturer from Science Education Department, Federal University of Technology (FUT), Minna, Curriculum expert from Federal University of Technology, Minna, two experienced physics teachers from secondary schools and Test and Measurement department, National Examination Council (NECO). Vital inputs that was made by all the experts, their suggestions and corrections were effect by the researcher and so that the research instruments was finally found fit for the research. The reliability of the research instruments was determined after conducting a pilot study on physics teachers in senior secondary schools two (SSS II) Minna, who were among the population, but not part of the sample for the main study was used.

The data obtained were analyzed using Cronbach Alpha. A reliability computation on evaluation of the implementation of physics curriculum performance 0.90 and level of compliance with appropriate teaching methods recommended 0.96 respectively. Data collected from the main study within four weeks were analyzed using descriptive (mean and standard deviation) and inferential statistics ANOVA. 3.0 was used as decision mean. The significant difference was ascertained at 0.05 alpha level. The Statistical

Package for Social Science (SPSS) version 23.0 was used for the analysis.

RESULTS

Research Question One: What is the mean evaluation of teachers on the implementation of performance objectives of senior secondary schools physics curriculum?

Table 1: Evaluation of Teachers on the implementation of performance objectives of senior secondary schools Physics curriculum

S/N	Items	N	Mean	Sd	Decision
Q1	The performance objectives for learning experience in physics curriculum are adequate and appropriate	91	3.33	.473	Agree
Q2	The performance objectives for learning experience in Physics curriculum do not lead to the attainment of aims and objectives of the curriculum	91	2.85	.893	Agree
Q3	The performance objectives for learning experience in Physics curriculum do not meet the needs of the society	91	3.12	.800	Agree
Q4	The performance objectives for learning experience in Physics curriculum place emphasis on conceptual thinking.	91	2.97	.482	Agree
Q5	The performance objectives for learning experience in Physics curriculum does not recognize learning objectives of the students to be very important	91	2.96	.729	Agree
Q6	The performance objectives leads to the attainment of aims and objectives of Physics curriculum	91	2.92	.806	Agree
Q7	The performance objectives for learning experience in Physics curriculum meet the need of the society.	91	2.98	.577	Agree
Q8	The stated learning activities in the Physics curriculum meet the stated performance objectives	91	2.97	.722	Agree
Q9	The stated learning activities in the Physics curriculum are relevant to the needs of the students	91	3.13	.452	Agree
Q10	The stated learning activities in the Physics curriculum have practical application	91	3.18	.508	Agree
Q11	The stated learning activities in the Physics curriculum provides active learning of concepts in Physics	91	3.18	.550	Agree
			33.57	2.557	

Decision Mean =2.5 from modified Likert scale

Source: Computed from survey data 2022

Table 1 shows the mean and standard deviation of mean evaluation of teachers on the implementation of performance objectives of senior secondary schools Physics curriculum. This indicates that all the items scores more than 2.5 decision mean, which imply that all the items were accepted, an indication that the evaluation of teachers on

the implementation of performance objectives of senior secondary schools physics curriculum was carried out in a positive manner. The implication is that, mean evaluation of teachers on the implementation of performance objectives of senior secondary schools physics curriculum is favourable, since all the items on evaluation of teachers on the implementation of performance objectives show agreed based on decision mean.

Research Question Two: What is the mean of evaluation of teachers on the implementation of performance objectives of senior secondary schools Physics curriculum based on their years of teaching experiences?

Table 2: Mean and Standard Deviation mean Evaluation of Teachers on the implementation of performance objectives of senior secondary schools Physics curriculum based on their years of teaching experiences

Year of experience	N	Mean	Sd
20 year and Above	53	33.60	2.57
11-20	28	33.61	2.85
6-10	10	33.30	1.703

Source: Computed from survey data 2022

Table 2 shows the mean and standard deviation of evaluation of teachers on the implementation of performance objectives of senior secondary schools Physics curriculum based on their years of teaching experiences? The result revealed that the mean and standard deviation of evaluation of teachers on the implementation of performance objectives of senior secondary schools Physics curriculum based on their years of teaching experiences as follows; 6-10 year $\bar{X}$ = 33.60, SD = 2.57 respectively. Similarly, the mean and standard deviation of 11-20 years $\bar{X}$ = 33.61, SD = 2.85 respectively on the other hand mean and standard deviation of 20 years and above $\bar{X}$ = 33.30, SD = 1.70respectively. The results also revealed that evaluation of teachers on the implementation of performance objectives of senior secondary schools Physics curriculum based on their years of teaching experiences 11-20 had highest number of mean follow by 20 years above and 6-10 years and above experience.

Research Question Three: What are the mean of level of compliance of learning activities in the Physics in the implementation of Physics curriculum in the secondary schools by physics teachers?

Table 3: Mean and Standard Deviation of Level of compliance of learning activities in the Physics in the implementation of Physics curriculum in the secondary schools by physics teachers

S/N	Items	N	Mean	Sd	Decision
Q1	Inquiry Method	91	2.92	.910	Used
Q2	Demonstration Method	91	2.92	.910	Used
Q3	Individualized Method	91	3.02	.906	Used
Q4	Cooperative Method	91	2.81	.906	Used
Q5	Discussion Method	91	2.91	.770	Used

Q6	Simulation and Game Method	91	2.86	.995	Used
Q7	Laboratory Practical Method	91	2.89	.912	Used
Q8	Scaffolding Method	91	2.78	.998	Used
Q9	Project Method	91	2.87	1.098	Used
Q10	Lecture Method	91	2.77	1.116	Used
Q11	Discovery Method	91	2.71	1.014	Used
Q12	Analogy	91	2.85	1.021	Used
Q13	Team Teaching	91	2.81	1.064	Used
Q14	Role Playing	91	2.48	1.026	Not Used
Q15	Excursion/Field Trip	91	2.47	1.015	Not Used
Q16	Programmed Instruction	91	2.37	.985	Not Used
Q17	Teacher led whole class discussion	91	2.51	.923	Used
Q18	Free flowing whole class discussion	91	2.54	.911	Used

Decision Mean =2.5 from modified Likert scale

Source: Computed from survey data 2022

Table 3 shows the mean and standard deviation of level of compliance of learning activities in the Physics in the implementation of physics curriculum in the secondary schools by physics teachers. This indicates that all the items scores more than 2.5 decision mean, which imply that fifteen out of eighteen items were accepted, an indication that the level of compliance of learning activities in the Physics in the implementation of physics curriculum in the secondary schools by physics teachers was observed. The implication is that, level of compliance of learning activities in the physics in the implementation of physics curriculum in the secondary schools by physics teachers show agreed based on decision mean.

Research Question Four: What are the mean of level of compliance of learning activities in the physics in the implementation of physics curriculum in the secondary schools based on gender?

Table 4: Mean and Standard Deviation of level of compliance of learning activities in the Physics in the implementation of Physics curriculum in the secondary schools based on gender

Gender	N	Mean	Sd
Male	56	49.13	8.85
Female	35	50.11	8.13

Source: Computed from survey data 2022

Table 4 shows the mean and standard deviation of level of compliance of learning activities in the Physics in the implementation of physics curriculum in the secondary schools based on gender (male and female). The result revealed the mean and standard deviation responses of male physics teachers are $\bar{X}$ = 49.13, SD = 8.85 respectively. Similarly, the

mean and standard deviation responses of female physics teachers are $\bar{X}$ = 50.11, SD = 8.13 respectively on the other hand. The results also revealed female teachers had the highest level of compliance of learning activities in the Physics in the implementation of physics curriculum in the secondary schools with mean of 50.11compare to male physics teachers.

Hypothesis Two: There is no significant difference in the evaluation of implementation of performance objectives of senior secondary schools physics curriculum based on their years of teaching experiences

Table 5: ANOVA of Mean Scores of Evaluation of Implementation of Performance Objectives of Senior Secondary Schools Physics Curriculum Based on their Years of Teaching Experiences

	Sum of Squares	**Df**	**Mean Square**	**F**	**Sig.**
Between Groups	.828	2	.414	.062	0.94
Within Groups	587.458	88	6.676		
Total	588.286	90			

Source: Computed from survey data 2022

Table 5 shows the hypothesis that stated that no significant difference in the evaluation of implementation of physics curriculum by physics teachers based on the year of experience was tested. The findings of the table show df = 88, with p = 0.94 Since p>0.05, H02, was accepted. Therefore there was no significant difference in the evaluation of implementation of physics curriculum by physics teachers based on the year of experience

Hypothesis Six: There is no significant difference in the level of compliance by teachers on implementation of Physics curriculum in senior secondary school based on gender.

Table 6: ANOVA of Mean Scores of Level of Compliance by Teachers on Implementation of Physics Curriculum in Senior Secondary School based on Gender

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	21.079	1	21.079	.286	0.59
Within Groups	6551.668	89	73.614		
Total	6572.747	90			

Source: Computed from survey data 2022

Table 6: The hypothesis that stated no significant difference in the level of compliance by teachers on implementation of Physics curriculum in senior secondary school based on gender was tested. The table show df = 89 with p = 0.59 Since p>0.05, H06, was accepted. Therefore, there was significant difference in the level of compliance by teachers on implementation of Physics curriculum in senior secondary school based on gender.

Discussion of Findings

There was no significant difference in the evaluation of implementation of physics curriculum by physics teachers based on the year of experience. This is support the study of Ewetan and Ewetan (2015) who investigated the influence of teachers' teaching experience on the academic performance of public secondary school students in Mathematics and English Language in Ado-Odo/Ota and Ifo Local Government Areas in Ogun State. Findings reveal that teachers' teaching experience has significantly influenced students' academic performance in Mathematics and English Language as measured by their performance in the SSC examinations and as perceived by the respondents. This is in agreement with the study of Olatubosun (2017) who sought to investigate the implementation process of physics curriculum in Ekiti State Secondary Schools. It was revealed that the implementation process of physics in Ekiti State public schools showed differences

between qualified, experienced and less experienced and less-qualified teachers. It was also concur with the study of Nwona and Madu (2018) who carried out the assessment of senior secondary school physics teachers' content knowledge. The results showed that there was no statistically significant difference between the mean content knowledge of the educationally qualified and non-qualified physics teachers.

There was significant difference in the level of compliance by teachers on implementation of Physics curriculum in senior secondary school based on gender. This is in support of the findings of Pepple and Esu (2020) who carried out study on influence of teacher qualification on teachers; effectiveness and student academic performance in Rivers State. It was revealed there is gender balance than gap in the implementation of social studies curriculum, more females offered social studies than their males counter parts, also there are more males than female academics teaching social studies.

CONCLUSION

This study evaluates the implementation of physics curriculum in senior secondary school using Tyler`s Objective Model in north-central states, Nigeria. Using the appropriate method of analysis, there are three positions arising from the findings. First, constructive evaluation of teachers on the implementation of performance objectives of senior secondary schools towards physics curriculum could influence student's performance. Second, a significant difference observed in the syllabus coverage and organization of physics curriculum by physics teachers based on gender deserves policy attention. Finally, the fact that no significant difference existed in the level of compliance and availability of instructional materials used in teaching physics among the physics teachers also requires policy issue to promote quality teaching of physics in the north- central states, Nigeria. So, we invite the curriculum planners and education administrators to make interactive method of instruction a policy for Physics teachers in the north- central states, Nigeria

REFERENCES

Abdullahi, M.A. (2004). Fostering Physics Education Among Females in Nigeria, *Studies in Physics Education,* 7(12), 15-17.

Abdulkarim A. A. (2012). Evaluation of the implementation Business Education Curriculum. *Minna Journal of Educational Studies*, 5(1), 105-110.

Abubakar, S.M. (2015). Comparative analysis of prospective of physics teacher problem solving ability and their achievement in Physics. *Journal of Science, Technology and Education JOSTE,* 3 (2), 151-157.

Adeyemo, S. (2012). Teaching/learning Physics in Nigerian Secondary School: The Curriculum Transformation, Issues, Problems and Prospects. *International Journal of Educational Research and Technology,* 1(1), 99-111.

Adolphus, I. A & Mumini, A. A. O (2016) Gender Differentiation in Chemical Thermodynamics Achievement in selected Schools in Akwa-Ibom State. *Journals of Humanities, Arts, Medicine and Sciences,* 2 (1), 11-20.

Ajaja O. P. (2009). Science teaching evaluation in Nigerian secondary schools, the state of resources and materials in Delta State", *International Journal of Research in Education,* 5(1), 190-200.

Ali, A. A. & Ajibola A. L. (2015). Issues and prospects of effective implementation of new secondary school curriculum in Nigeria. *Journal of Education and Practice.* 6(34), 51-66.

Busari, T. (2014). *Effects of comp* *cooperative and individualized instruction on achievement and retention of senior Secondary School Students in physics in Minna*

Metropolis Niger State. An Unpublished MTech Thesis, Science Education Department, School of Science and Technology Education, Federal University of Technology Minna, Niger State.

Blenkin, G. M. (2012). Change and the curriculum. London: Paul Chapman press.

Dambatta, U. (2013). *An evaluation of the Nigeria Certificate in Education Mathematics Programme in the North-West, Nigeria*. Ph.D. Research Proposal Seminar. Mathematics Education Department, Faculty of Education, University of Ilorin. Nigeria.

Ewetan, T.O. & Ewetan, O. O. (2015). Teachers teaching experience and academic performance in Mathematics and English Language in public secondary schools in Ogun State, Nigeria. *International Journal of Humanities Social Sciences and Education*, 2(2), 32 - 45.

Federal Republic of Nigeria, (2013). *National Policy on Education*. Lagos, Nigeria.

Ilomaki, L. & Lakkala, M. (2018). Digital technology and practices for school improvement: innovative digital school model. *Journal* of *Research and Practice in Technology Enhanced Learning*, 13(2 5), 1-10.

Lee-Roy, C. (2012). The Role of Science and Technology in the Developing World in the 21st Century. www.ieet.org/index.php/IEET/more/chetty20121003

Ogunleye, B. O., & Fasakin, A. O. (2011). Everyday phenomena in physics education: impact on male and female students' achievement, attitude and practical skills in urban and peri-urban settings in Nigeria. *Pakistan Journal of Social Sciences,* 8(6), 316-324.

Omiola M., A, Enuwa M., R, Awoyemi S., O, Bada A., S. A. (2012). Effect of developed video instructional package on the performance of senior secondary school physics students in Ilorin metropolis, *British. Journal of Sciences*, 6(1), 45-54.

Omwirhiren, E.M. (2015). Enhancing academic achievement and retention in senior secondary school chemistry through discussion and lecture methods: A case study of some selected secondary schools in Gboko, Benue State, Nigeria. *Journal of Education and Practice*, 6(21), 159-160.

UNESCO (2015). Current challenges in basic science education. *Week Report.* Retrieved May 09, 2021

Uza, D.V. (2013). Science and technology: Key to our national development. Available RetrievedMarch12,2019, from http://www.commonwealthministers.com/special_reports/science_and_technology_key_to our national development.

Wafula, E. N. (2019) *Instructional influences on the implementation of physics curriculum in secondary schools, a case study of Bungoma County, Kenya*. Unpublished PhD Thesis Department of Curriculum Instruction and Educational Media Moi University, Eldoret-Kenya.

This article should be cited as:

TAOFEEQ, B., GANA, C. S., GIMBA, R. W. & SALAKO, K. A. (2022). Evaluate the Implementation of Physics Curriculum in Senior Secondary School Using Tyler`S Objective Model in North- Central States, Nigeria. *Journal of Economic, Social and Educational Issues,* 2(2), 178 -188.