# CHALLENGES IN THE IMPLEMENTATION OF THE TRANSFORMED SECONDARY SCHOOL PHYSICS CURRICULUM IN FCT, ABUJA, NIGERIA

**[1] OLUWATADE, Ojo Oluwadare & [2] CELINA S. GANA**
[1] FCT College of Education, Zuba-Abuja Physic Department ,speak2tade@gmail.com
[2]Federal University of Technology, Minna,Departmet of Science Education
Gana.celina@futminna.edu.ng

**Abstract**
*This study investigates the Challenges in the Implementation of the Transformed Senior Secondary School Physics Curriculum in FCT, Abuja, Nigeria. In this study, descriptive design method was adopted. The target population for the study comprises all the Physics Teachers in 56 Government Senior Secondary School in FCT Abuja. The sample of the study comprised of available 32 Physics Teachers from 20 randomly selected schools. The questionnaire of 18 items was used for trial testing, data collected was analysed using Cronbach Alpha to obtain 0.72 reliability coefficient after validation. To guide the study, two research questions and one hypothesis were formulated. Data collected were statically analysed using mean rating responses to answer and analysed the research questions, the t-test statistic was used to test and analysed the research hypotheses. The findings showed that government inadequate provisions of resource materials and lack of much period in the time table among others constitute challenges toward effective implementation of the transformed physics curriculum. In the light of the findings and their implementations, recommendations were made to eliminate the challenges of resource materials and time allocation in the time table among other challenges.*

**Keywords:** Curriculum, Challenges, Transformed curriculum, Implementation, Physics

## Introduction

Physics curriculum was originally organized under the units: Mechanics, Properties of Matter, Heat, Waves, Sound and Light, Electricity and Magnetism and Modern Physics. Under this guide and form, each unit was exhausted before starting a new or next unit. The general objectives of the curriculum as stated in the curriculum document of 1985 by the Federal Ministry of Education and revised in 1998 were;

1. To provide basic literacy in physics for functional living in the society.
2. To stimulate and enhance creativity
3. To acquire essential skills and attitudes as a preparation for technological application of physics.
4. To acquire basic concept and principles of physics as preparation for further studies.

It is based on the National Policy on Education, NPE guidelines of 1981 that there has been need for curriculum transformations in order to take into consideration the changes taking place in the nation. Nigerian government in its responsiveness to this aged long problems in education sector embarked on curriculum reform process in 2008 which cut across many disciplines. Nigeria Educational Research and Development Council (NERDC) with the few stakeholders in education saddled with the responsibilities of designing, reviewing and planning the nation's education curriculum came up with the nascent curriculum. This document has enjoyed a lot of accolades from professional in the field of education. Unachukwu (2009) affirms that for school learning to be meaningful, there is the need for constant change of school curriculum. In a similar view, Agbionu (2010) maintained that curriculum should be a dependent variable, changing with the needs of the learner.

The outcome of the reform ushered in a new curriculum which cuts across many disciplines including physics. New secondary school physics curriculum has its structure changed shifting the paradigm from the conceptual approach or spiral approach to the thematic approach(Nwoye&Okafor, 2019). The new approach to the content organization has six themes unlike the previous that had five. This implies that there were inclusion of additional topics, contents and a new theme (physics in technology) to the old physics curriculum. These giant strides by NERDC were according to Obioma (2008) for the best interest of the country and to ensure compliance with the national and global issues as well as further strengthened the objectives of physics education as enshrined in the National Policy on Education (2004) without necessary overloading the content of the new document. Expressing his optimism was Adeyemo (2010) who opined that the gap on similarities and differences

between physics and technology has been closed. The programme was made to be student-activity oriented with emphasis on experimentation, questioning and discussions as well as problem-solving (Daramola&Omosewo, 2012). This was to stimulate creativity and developed process skills and correct attitudes in students. The introduction of the theme; physics in technology, provided opportunity for the construction and operation of workable devices as well as acquaintance with some products of modern technology (NERDC, 2008). It will be worthy to note that the advantages of the transformed curriculum out-weighed the original physics curriculum.

Nevertheless, the aims and objectives of any level of education cannot be achieved if the planned program for such level is not well implemented. Observing this, Onyeachu (2008) asserted, "no matter how well a curriculum of any subject is planned, designed and documented, implementation is important". It is at the implementation that excellent curriculum plans and other educational policies are married without any trace(Mkpa, 2005). The main problem of this study is to primarily look at the level of transformed physics curriculum implementation in relation to the challenges toward its effective implementation in Senior Secondary Schools in FCT Abuja.

**Research Questions**

1. What are the factors affecting effective implementation of the transformed physics curriculum in Senior Secondary Schools in FCT Abuja, Nigeria?
2. To what extent do school locations influence physics teachers' mean scores on factors affecting effective implementation of the transformed physics curriculum in Senior Secondary Schools in FCT Abuja, Nigeria?

**Research Hypothesis**

The following null hypotheses was made for this study:

HO: There is no significant difference in the mean scores of the urban and rural physics teachers on factors affecting effective implementation of the transformed physics curriculum in Urban and rural Senior Secondary Schools in FCT Abuja, Nigeria?.

**Methodology**

A descriptive survey research design was adopted. All the physics teachers in the fifty-six (56) Government Senior Secondary Schools of FCT, Abuja constituted the target population for the study. Twenty Secondary Schools were randomly selected which constituted about 40% of the secondary school in the FCT, Abuja, with thirty-two (32) available physics teachers in the selected schools as the respondent.

The instrument that was used for the study was a questionnaire tagged " Challenges toward the Effective Implementation of the Transformed Physics Curriculum in Senior Secondary Schools". Designed and generated by the researcher for the study and validated by an expert in measurement and evaluation and two professional physics teachers.

The questionnaire was a 4 – point rating scale consisting 18 items forthe teachers. The reliability coefficient of the instrument was found to be 0.72 after a trial test of the instrument using 2 secondary schools with 5 physics teachers from two schools. The instrument was given to the subjects and collected from them on the same day. A total of thirty-two questionnaires were collected back from the subjects and used for data analysis.

The data collected were analysed using means, standard deviation and ranking statistical tools to answer research questions and t-test at 0.05 level of significanceto test the hypothesis.

**Results**

**Research Questionone:** What are the factors affecting effective implementation of the transformed physics curriculum in Senior Secondary Schools.

**Table 1:Means, Standard Deviation and Ranking of the Factors Affecting Effective Implementation of the Transformed Physics Curriculum.**

| S/N | ITEMS STATEMENTS | Mean ($\overline{X}$) | Standard Deviation | RANK | REMARK |
|---|---|---|---|---|---|
| 1 | Voluminous nature of physics curriculum | 3.13 | 1.00 | 6 | Agreed |
| 2 | Overwhelming numbers of activities demanding by the curriculum | 2.82 | 1.19 | 12 | Agreed |
| 3 | Lack of adequate time to cover physics curriculum | 3.13 | 1.00 | 5 | Agreed |
| 4 | The pressure of external examination | 2.57 | 1.15 | 16 | Agreed |
| 5 | Inadequate funding | 3.42 | 0.96 | 1 | Agreed |

| | | | | | |
|---|---|---|---|---|---|
| 6 | Inadequate physics teachers | 3.30 | 1.00 | 3 | Agreed |
| 7 | Inadequate infrastructure facilities | 2.80 | 1.18 | 13 | Agreed |
| 8 | Inadequate development of teachers | 2.78 | 1.20 | 14 | Agreed |
| 9 | Poor motivation of physics teachers | 3.38 | 0.90 | 2 | Agreed |
| 10 | Poor utilization of the available instructional materials | 2.57 | 1.25 | 16 | Agreed |
| 11 | Poor management of physics laboratory | 2.84 | 1.18 | 10 | Agreed |
| 12 | Poor training of physics teachers | 2.71 | 1.12 | 15 | Agreed |
| 13 | Ineffective use of innovative teaching method | 2.53 | 1.15 | 18 | Agreed |
| 14 | Lack of qualified laboratory assistance | 3.08 | 1.09 | 9 | Agreed |
| 15 | Lack of current physics text books | 3.12 | 1.00 | 8 | Agreed |
| 16 | Lack of effective supervision and monitoring of physics teachers | 2.84 | 1,14 | 10 | Agreed |
| 17 | Lack of well-equipped modern physics laboratory | 3.29 | 0.93 | 4 | Agreed |
| 18 | Large class size | 3.13 | 1.00 | 6 | Agreed |

Table 1 shows that all the factors listed above challenges the effective implementations of the transformed physics curriculum to certain extent. The table shows that all the means are greater than the expected mean of 2.50 an indication that all the respondent agreed to all the listed items as the factors challenges the effective implementation of the transformed physics curriculum.

**Research Question two**

To what extent do school location influence physics teachers' mean scores on factors affecting effective implementation of the transformed physics curriculum in Senior Secondary Schools

**Table 2**: **Overall Mean and Standard Deviation Scores of Factors Affecting Effective Implementations of Transformed Physics Curriculum in urban and rural Secondary Schools in FCT Abuja, Nigeria.**

| S/N | School Location | Number of subjects | Mean ( $\overline{X}$ ) | Standard Deviation |
|---|---|---|---|---|
| 1 | Urban | 18 | 3.06 | 1.09 |
| 2 | Rural | 14 | 2.84 | 1.18 |

Table 2, above compared urban and rural physics teachers mean response scores on the challenges affecting the effective implementation of the transformed physics curriculum, with urban teachers havea highermean of 3.06 and that of rural teachers is 2.84.

**Null Hypothesis**

There is no significant difference in the mean scores of the urban and rural physics teachers on factors affecting effective implementation of the transformed physics curriculum in Senior Secondary Schools.

**Table 3:t – test Analysis on the Mean Responses of Urban and Rural Teachers on Challenges Towards the Effective Implementation of the Transformed Physics Curriculum.**

| Group | N | Mean ( $\overline{X}$ ) | Standard Deviation | df | t-cal | t-tab |
|---|---|---|---|---|---|---|
| Urban physics teachers | 18 | 3.06 | 1.09 | | | |
| Rural physics teachers | 14 | 2.84 | 1.18 | 30 | 0.326 | 1.98 |

From the table, the calculated value of t at 0.05 level of significance with 30 degree of freedom is 0.326. This value is less than the table value of 1.98. Thus the null hypothesis is accepted. Therefore, there is no significant difference between urban and rural physics teachers on challenges toward the effective implementation of physics curriculum. This implies that urban and rural teachers responded in a similar way to the questionnaire items.

**Discussions of Results**

The results on table 1 showed that all the factors to a great extent challenge the effective implementations of the physics curriculum. The result shows that the respondent (physics teachers) used in this study agreed with all the factors affecting the effective implementation of physics curriculum The finding presented on table 1 as it affects inadequate funding, lack of adequate time to cover the curriculum; large class size and lack of infrastructural facilities are supportive of previous studies ofAyodele (2009) and Lawrence (2016) especially the finding that paucity of funds supplied to schools by government is the major causes of the problems in the implementation of science curriculum and this corroborates with the present findings. Also the findings of this study concerning over loaded curriculum, lack of well equipped laboratory, lack of qualified teachers, inadequate science teachers, poor utilization of available science teaching materials and large class size are in agreement with the findings of Uzoechi (2006) who noted that above factors greatly affect effective implementation of science curriculum

The results were in support of the assertion of Adeyemo (2010) who noted that curriculum transformation would consider the availability of teaching and learning resources and support facilities as laboratories and computer facilities. This according to Daramola and Omosewo (2012) is because ample opportunity for laboratory activities and discussions were provided which are student-activity oriented with emphasis on questioning and problem-solving. The participation of students in teaching and learning would help them a great deal even in life after school. This is as NERDC (2008) emphasized that the introduction of themes as physics in technology provides opportunity for construction and operation of workable devices for students.

The finding of the study also showed that there is no significant difference between urban and rural physics teachers on the factors affecting effective implementation of transformed physics curriculum. This implies that urban and rural teachers responded in a similar way to the questionnaire items. This also means that the urban – rural dichotomy has no influence on physics teachers' opinion on factors affecting effective implementation of the transform physics curriculum

**Conclusion**

The finding of this work revealed that the persistent problem of implementation of curriculum in secondary schools still persist such as lack of time to cover the content of the curriculum, oversize class for teachers to manage and so on. All these shows that little or nothing has been achieved so far on the curriculum implementation. To meet up with the best global practices in relation to technology, Nigerian government need to come out the her shell and do the needful as a nation.

**Recommendation**

The following recommendations were made based on the findings:

1. Number of subject taught in secondary school should be review so that more teaching period be given to teaching of physics, this will reduce the pressure of teaching to pass by the teachers
2. Physics teachers should always be encouraged and sponsored for workshops, conferences and seminars in the area (field) to keep them abreast of any change in the curriculum
3. Employment of qualified physics teachers should be given serious attention
4. Laboratory facilities and technological equipment should be provided to schools.
5. Recommended ratio of students to teachers in the classroom be seriously considered to avoid overcrowding, this will give the physics teacher to be more effective in his teaching

**References**

Adeyemo, S.A. (2010). Teaching/Learning of physics in Nigeria secondary school: The Curriculum Transformation, Issues, Problems and Prospects*. International Journal of Educational Research and Technology*. (1) June 2010. 99-111.

Ayodele, M. A. (2009). Teachers Perception on environmental education curriculum Delivery in Nigeria: A case study of Federal Capital Territory In N. Udofia (Ed).50th Annual Conference Proceedings of Science Teachers Association of Nigeria, Ibadan, HEBN Publisher PLC. 203 – 208.

Canon C. N. M (2016). Challenges towards Transformation of Secondary School Physics Curriculum in Nigeria*. International Institute of Academic Research and Development. International Journal of Education and Evaluation*. 2(6). 32-42

Daramola, S.O and Omosewo, E.O (2012). An appraisal of the new Nigerian Senior secondary school physics curriculum. *Journal of Education and Practice* 3(8). 190-194

Lawrence A. (2016). Factors Affecting the Effective Implementation of Senior Secondary Education Chemistry Curriculum. *International Journal of Scientific and Research* Publications,6(5), 562-566

Federal Ministry of Education (2008). The New Secondary Curriculum Structure at a Glance. Abuja, NERDC

Federal Ministry of Education (1985). Physics curriculum for senior secondary schools. Lagos

Nigerian Educational Research and Development Council (NERDC) (2008). The new senior secondary school curriculum structure at a glance. Abuja. FME.

Mkpa, M.A (2005). Challenges for Implementing the School Curriculum in Nigeria: Journal for Curriculum Studies 12 (1) 9

Nigerian Educational Research and Development Council (NERDC) (2008). The new senior secondary school curriculum structure at a glance. Abuja. FME.

Nwoye, A.N and Okafor, A.E (2019). Nigerian's Nascent Secondary School Physics Curriculum and its Implementation Problems. *Scientific Research Journal*, 8(6), 62-64. www.scirj.org

Onyeachu, J.A.E (2008).Curriculum Implementation at the Primary Educational Levels Challenges For 21st Century: *Multidisciplinary Journal Research Development* 1(1), 38-49

Uzoechi, B. C. (2006). Teachers Perceptions of the availability and usage of resources for Primary Science Teaching in the Federal Capital Territory, Abuja. In U. Nzewi (Ed), 47th Annual Conference proceedings of Science Teachers' Association of Nigeria, Ibadan, HEBN Publisher PLC. 310 – 314.