Scholars Journal of Arts, Humanities and Social Sciences **ISSN 2347-5374 (Online)**
Sch. J. Arts Humanit. Soc. Sci. 2014; 2(1):137-140 **ISSN 2347-9493 (Print)**

(An International Publisher for Academic and Scientific Resources) DOI : 10.36347/sjahss.2014.v02i01.023

Evaluation of the Implementation of the Senior Secondary School Physics Curriculum in Ekiti State

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Abstract: The study evaluated the implementation of the Senior Secondary School Physics curriculum. The purpose was to determine whether the physics curriculum is being implemented the way it should be or not. The survey type of descriptive research design was adopted. The sample for the study consisted of physics teachers that implement the physics curriculum in 25 senior secondary schools in the state. Two research questions were raised; the data collated were analysed using descriptive statistics. The results from the teachers' response revealed that none of the section of the physics curriculum content was fully implemented. The result also showed that most physics teachers introduce their students to physics practical works at the certificate class while they are preparing for the Senior Secondary School Physics Examination.
Keywords: Evaluation, Implementation, Senior Secondary School Physics Curriculum and Physics Teachers

INTRODUCTION

The development of a nation leans greatly on the kind of education put in place. The needs and values of such nation determine their educational policy. The Nigerian National Policy on education by the Federal Republic of Nigeria pointed that the need to train the Nigeria Citizens to be able to manipulate their environment towards the development of the society [1]. There is no doubt that quality education vastly increases the productivity and potentials of individuals and by extension, the societies they are part of Curriculum is a means of bringing the objectives of education into reality. The mastery of any subject is determined by the method of implementing he curriculum especially at a prescribed examination. The evaluation procedure put in place after the implementation and the students response is expected to yield effective learning outcomes in the students. When such curriculum is faulty stated or not well implemented then it affects the purpose of National policy on education. Then, there can be problem.

The objectives of any level of education cannot be achieved if the planned curriculum for such level of education is not well implemented. Onyeochu asserted that no matter how well the curriculum of any subject is planned, designed and documented, if not properly implemented the curriculum may not achieve its goal and objectives [2].

Physics, as one of the physical science subjects included in the new curriculum sent to secondary schools as an educational objective from NPE by (FGN 2007) plays an important role in the technological advancement and industrial revolution of a nation. It is concerned with the behavior of matter and therefore related and applicable to all aspects of life [1].

The evaluation procedure on how the physics curriculum content is being implemented to ascertain better goals and objectives is a major concern to tests experts. A number of reasons can be identified to be accountable for the in effective implementation of physics curriculum. These include instructional materials, teacher' method of implementation and government [3]. Survey from schools revealed that inadequacy of good instructional materials; equipment and laboratory facilities in the secondary schools also negatively affect the effective implementation of physics curriculum in schools [4]. According to Ango, Students' poor performance in physics globally in basically due to the inadequate involvement of students in the physics practical learning activities right from the beginning of any new concept to be implemented which could stimulate them to perform better [5]. The effect of this can also be integrated by unavailability of/ and insufficient laboratory materials and unavailability and / or insufficiency of materials in the laboratories. Also, Babalola noted that as Ingredient is to soup, so also is instructional material to physics curricula implementation [6].

The impact of the teachers in the performance of the students in germane. The teachers are the implementers who are to impact into the students the concepts expected to be learnt. However, Owolabi *et al* were of the opinion that ignorance of the teachers or neglect of guided-discovery method by the teacher grossly contributed to the low performance of the students in physics [7].

When considering growth in technology, the development of human capital is paramount [8]. The problem of industrial development in Nigeria appeared to be that of inadequacy of judgmental value procedure put in place on curriculum implementation in our secondary schools by the government and this has been a major constraint on the rate of technological and economic development of the country. Teachers, who are the implementers of this curriculum are the major manpower saddled with the responsibility of impacting the concepts considered fundamental to technology through the teaching of the basic concepts, both theory and practical give notes to the students to serve as feed back and evaluate them on the topic taught. This is why Alonge said through evaluation, teachers gain insights into the progress of the students. However, evaluation is inevitable in teaching and in implementing a set of topic taught in physics [9]. Also, Oluwatayo and Adebule noted that Evaluation is a human activity designed to determine the effectiveness of a programme [10].

Statement of the Problem

Physics is one of the major subject meant to provide the basic concepts needed to enhance the development of technology in the country as stipulated in the Nigerian National policy on education [1]. There appears to be inadequate evaluation procedure put in place to ascertain whether the Senior Secondary school physics curriculum is being implemented the way it should be or not. Hence, calls for attention.

Purpose of the Study.

The study evaluated the implementation of Senior Secondary School Physics curriculum at the secondary level. The study investigated the extent at which physics curriculum content is being implemented, and investigated the level at which physics teachers introduce their students to practical works.

Research Questions

1. To what extent in the physics curriculum content being implemented?
2. At what level do physics teachers introduce students to practical works

METHODOLOGY

The study employed a descriptive research of survey type. The population consisted of all the physics teachers teaching in all the public secondary schools in Ekiti State, Nigeria. The sample for the study consisted of 25 physics teachers. The data were analysed descriptively using frequency counts and percentages.

RESULTS

Question 1: **To what extent is the Physics Curriculum content being implemented?**

Table 1: Frequency Counts and percentage Analysis showing the Teachers' Response on Physics curriculum content implemented

S/NO	CONTENTS	F/% NT	F/% PT
	INTERACTION OF MATTER SPACE AND TIME		
1.	Basic principles and states of Matter	0(0.0%)	25(100.0%)
2.	Fundamental and derived qualities and units	0(0.0%)	25(100.0%)
3.	Position, distance and Displacement	0(0.0%)	25(100.0%)
4.	Time	5(20.0%)	20(80.0%)
5.	Speed, velocity and Acceleration	21(84.0%)	4(16.0%)
6.	Rectilinear Acceleration	21(84.0%)	4(16.0%)
7.	Scales and Vectors	23(92.0%)	2(8.0%)
8.	Motion and equations of Uniform Accelerated Motion	19(76.0%)	6(24.0%)
9.	Projectiles	12(48.0%)	13(52.0%)
10.	Equilibrium of forces	1(4.0%)	24(96.0%)
11.	Simple Harmonic Motion	22(88.0%)	3(12.0%)
	CONSERVATION PRINCIPLES		
12.	Work Energy and Power	10(40.0%)	15(60.0%)
13.	Heat Energy	6(24.0%)	19(76.0%)
14.	Electric Charges	10(40.0%)	15(60.0%)
15.	Linear Momentum	17(68.0%)	8(32.0%)
16.	Mechanical Energy	16(64.0%)	9(36.0%)
	WAVES, MOTION WITHOUT TRANSFER		
17.	Production and propagation of wave	18(72.0%)	7(28.0%)
18.	Types of wave	8(32.0%)	17(68.0%)
19.	Properties of waves	10(40.0%)	15(60.0%)
20.	Light waves	9(36.0%)	16(64.0%)
21.	Sound waves	13(52.0%)	12(48.0%)
22.	Application Light and Sound waves	17(68.0%)	8(32.0%)

23.	Electromagnetic Waves	20(80.0%)	5(20.0%)
	FIELDS AT REST AND IN MOTION		
24.	Description and Property of fields	15(60.0%)	10(40.0%)
25.	Gravitational Field	13(52.0%)	12(48.0%)
26.	Electric field	10(40.0%)	15(60.0%)
27.	Magnetic Field	17(68.0%)	8(32.0%)
28.	Electromagnetic field	21(84.0%)	4(16.0%)
29.	Simple A.C Circuits		
	ENERGY QUANTIZATION AND DUALITY OF MATTER		
30.	Particulate Nature of Matter	4(16.0%)	21(84.0%)
31.	Elastic Properties of Solids	5(20.0%)	20(80.0%)
32.	Crystal structure	8(32.0%)	17(68.0%)
33.	Fluids at Rest and in Motion	19(76.0%)	6(24.0%)
34.	Molecular theory of Matter	7(28.0%)	18(72.0%)
35.	Models of the Atom	9(36.0%)	16(64.0%)
36.	Nucleus	12(48.0%)	13(52.0%)
37.	Energy Quantization	19(76.0%)	6(24.0)%
38.	Waves Particle Paradox	17(68.0%)	8(32.0%)
	PHYSICS IN TECHNOLOGY		
39.	Battery and Electroplating	25(100.0%)	0(0.0%)
40.	Electrical continuity Testing	25(100.0%)	0(100.0%)
41.	Solar Collector	25(100.0%)	0(100.0%)
42.	Solar Energy Panel	25(100.0%)	0(100.0%)

From Table 1; it was discovered that no section was found to be fully implemented by the physics teachers. The section with the highest percentage level was the "Interaction of Matter Space and Time"; followed by "Conservation Principles" followed by "Energy Quantization and Duality of Matter" then "Field at Rest and in Motion" followed by "Waves, Motion without Material Transfer" and none of teachers covered "Physics in Technology". The level of Physics Curriculum implemented fell below the documented standard given by the Nigeria Education Research Development Council [1].

Question 2: **At what level do Physics teachers introduce students to practical works?**

Frequency counts and percentage were used to answer the questions.

Table 2: **Frequency Counts and Percentage Analysis showing the level that Physics teachers introduce student to practical work**

S/N	ITEMS	YES %	NO %
1.	All the practical activities required are carried out in SS1	2(8.0)	23(92.0)
2.	All the practical activities required are carried out in SS2	2(8.0)	23(92.0)
3.	All practical activities required are carried out in SS 3	21(84.0)	4(16.0)

From table 2; it was discovered that most Physics teachers 21 (80.0%) adjudged that they commence Practical works in the certificate class (SS 3). While 2 (8.0%) attests to introducing their students to practical class in SS 1 and SS 2.

DISCUSSION

Findings of this study in table 1 revealed that the contents of physics curriculum implemented in schools fell short of the recommended standard as documented in the National physics curriculum issued by the Federal Government of Nigeria [1]. Findings also showed that the physics curriculum content implemented in schools was not in accordance with the standard given which covered six sections in the new curriculum, and failure to fully implement a section jeopardizes the effective implementation of other sections. More so, findings of this study in table 2 reveals that 21(84.0%) commence the practical activities at the Certificate class and only 2(8.0%) in SS1 and SS2 which contradicts Ango where he said students should be involved in the teaching learning and practical activities in physics right from the beginning of any new concept to be taught [5].

CONCLUSION

From the findings of the study it could be concluded that there is a wide disparity in the physics curriculum content implemented in schools and the new physics curriculum recommended. Also, it was concluded that there is no proper evaluation procedure put in place on implementation of physics curriculum in secondary schools in Ekiti State.

Recommendations

Based on the findings of this study, the following recommendations were made,

1. Physics curriculum content should be fully implemented in schools in accordance with the recommended standard and each section should be implemented to compliment the other
2. Inspections should be routinely carried out on physics teachers' note of lesson, diaries, scheme of work and students' note of lesson to determine the level of physics curriculum content implementation.
3. Physics teachers should make practical activities a priority as the theory aspect so that it stimulates the students and geared them positively towards physics.

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