FACTORS AFFECTING PHYSICS PERFORMANCE AMONG STUDENTS AT SELECTED SENIOR SECONDARY SCHOOLS IN GURI LOCAL GOVERNMENT, JIGAWA STATE.

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ABSTRACT

The study was aimed at investigating the factors affecting physics performance among students at selected senior secondary schools in Guri local government, Jigawa state, Nigeria. The study adopts a descriptive survey research design. Specifically, the study sought to find out the student academic performance in physics, factors affecting teaching of physics among students, availability of physics laboratory equipment, and strategies used in teaching physics. Four research questions were posed to guide the study, and three hypotheses were formulated and tested at the 0.05 level of significance using ANOVA. A population was 1532, with respondents consisting of 3 principals, 71 teachers, and 1458 students. The instrument for data collection was a structured questionnaire with 47 items. The questionnaire was validated by three experts from the faculty of Science Education at USCOEGA. The data collected were analysed using Cronbach's alpha (α) method to establish the internal consistency of the questionnaire. The results revealed that laboratory equipment is available; teaching strategies used by physics teachers have been identified, as have factors affecting the teaching of physics in senior secondary schools. It is unethical for the proper teaching of physics when it is neglected; this will lead to poor performance of students. It was recommended the physics teachers should be encouraged to make use of the adequate laboratory equipment provided for teaching physics practical, encouraged to use available teaching strategies in teaching physics concepts at the secondary school level as it is empirically established that it enhances students' academic

performance, school heads and laboratory technicians to ensure adequate storage and protection of laboratory equipment, and relevant monitoring bodies are adequately funded to carry out routine supervision to minimise major factors affecting teaching physics based on the findings of the study.

***Keywords**: Performance, Teaching, Physics, Laboratory, Guri*

Introduction

The world and life have been shaped by science, technology, and developments. Science is a dynamic human activity concerned with understanding the workings of our world. This understanding helps man know more about the universe. Without the applications of science, it would be difficult for man to explore the other planets of the universe. Science education and its benefits can be seen clearly in a description of science by the famed quantum physicist Richard Feynman (2004), where he described "science as a way to teach how one gets to know, to what extent things are known." Trefil, (2006) presents a set of grand ideas that could be used to form the basis of this scientific literacy, which are firmly rooted in concepts of physics.

Friedl, (2015) defined Physics as the fundamental science which creates a foundation for other natural sciences. It is usually defined as the study of matter and energy and the interactions between them. It helps in solving societal problems, ranging from the various known environmental pollutions to maintenance of personal hygiene, generation of power, effective and efficient exploration of natural resources like crude oil as in the case of Nigeria, and other important mineral resources and the maintenance of such. It's important to note also that science in form of Physics is the basis of all technology and its advancement is a major key to both economic and social well-being as well as military superiority of any nation.

Physics like any other science oriented subject can be taught and learnt by various teaching methods, some by listening and some other methods are by doing. The selection of the most suitable teaching strategy is a basic condition for a successful teaching/learning process. Teaching of science requires more understanding and conceptual linkage of various scientific representation (Anis, 2016). The teaching/learning techniques must have necessary provision for students' active engagement with explanatory ideas, theories and evidence so as to enable the connection of scientific concepts to real purposes and practices in the world they live. Important to note also, is that the most recommended strategies for teaching science are problem solving,

enquiry-based teaching, laboratory-based activities and project-based teaching/learning approaches also known as activity based learning strategies or innovative teaching method. But unfortunately, teachers teach classes the same way they were taught, typically using lecturing method (Mazur, 2015). This unfortunately leaves the learners to the fate of depending on rote learning without having an in depth understanding of scientific phenomenon, concepts and theories and hence losing interest in the whole phenomenon. Teaching strategies will surely influences student's academic performance in Physics.

Academic achievement or performance is the extent to which a student's has achieved their short or long time educational goals. According to Akinbobola and Ikitde (2008) the achievement of students in the classroom teaching and learning of physics varies according certain factors such as: student's background, learning environment and developmental level in terms of chronological and cognitive maturity. Oxford bibliography (2014) defined academic achievement as performance outcome that indicate the extent to which a person has focus accomplish specific goals that were the focus of activities in instructional environment, specifically in schools, colleges, and universities.

The phenomena of poor academic performance among Nigeria students especially those in senior secondary school is a matter that become source of worry to successive government and major stakeholders in education sector in the country. Over the years, the majority of students that sat for May/June West Africa Examination Council (WAEC) and June/July National Examination Council (NECO) have been recording mass failure especially in Science with Physics being the worst hit with percentage low enrolment and passed. Characteristically, the statistical real out by WAEC and NECO each time result were released point to the fact that students have not been performing up to the require standard (Adeyemo, 2011).

Poor academic performance in physics could be attributed to many factors, these include the challenges facing the teaching and learning of science education, especially physics. Ajayi (2007) outlined inadequate teaching, a lack of learning resources, learners' attitudes, government policy, and parental background, a lack of learners' preparation, poor management style, and a lack of adequate competent teachers as factors that influenced physics teaching-learning outcomes over time. According to Obioha (2006), there are insufficient resources for teaching science topics in Nigerian secondary schools. He went on to say that if there are few resources,

they are frequently in poor condition, and the few that are in good condition are insufficient to cover everyone who needs them. Adebola (2007) listed poor teacher preparation, shortage of quality teachers, poor methods of teaching and non-usage of instructional materials which also include laboratory equipment as challenges to science instruction. In his study, Omosewo, (2008) considered the human factors as the teacher's professional commitment, creativity, mechanical skills, initiative and resourcefulness. He found that many of Nigerian science teachers were aware of possibility of improvisation in tackling the problem of inadequate or unavailability of laboratory equipment but many exhibited poor attitudes towards improvisation. Alamina (2008) reiterated that despite the fact that the world is in the age of technological advancement, the fact still remain that developing countries of the world are still lagging behind with regard to obtaining adequate standard science resource materials and laboratories.

Laboratory is an area equipped with scientific apparatus and equipment where scientists perform experiments based on scientific theories. Thus, the laboratory provides resource materials for teaching and learning of science, the laboratories allow students to have experiences that are consistent with the goals of scientific literacy, so if the laboratories are well equipped and the teachers are experts, the students will be motivated to learn Physics which will then lead to an excellent performance. In a situation where there are no equipments in the laboratories, the teachers can improvise; improvisation plays an important role in science experimentation. According to Science Teachers Association of Nigeria- STAN (1976), ‘’true improvised equipment are those made by the teachers”.

Although observation shows that there has been low performance in physics at the ‘’O’’ level Senior Secondary Schools Certificate Examination (SSCE), West African Examination Council (WAEC), National Examination Council (NECO), etc. These observations have raised problems, which have captured a lot of attention from many individuals and organizations. These problems are viewed from various perspectives, and blames are shared in various proportions among students, teachers, the examination body, the curriculum planners, and even the state and federal governments. The basis of this project is to investigate the factors affecting physics performance among students at selected senior secondary schools in Guri local government, Jigawa state.

THEORY

Edward Lee Thorndike (1874 - 1949) Laws of learning and its educational implications

First primary law of learning, according to him, is the 'Law of Readiness' or the 'Law of Action Tendency', which means that learning takes place when an action tendency is aroused through preparatory adjustment, set or attitude. Readiness means a preparation of action. If one is not prepared to learn, learning cannot be automatically instilled in him, for example, unless the typist, in order to learn typing prepares himself to start, he would not make much progress in a lethargic & unprepared manner.

The second law of learning is the 'Law of Exercise', which means that drill, or practice helps in increasing efficiency and durability of learning and according to Throndike's S-R Bond Theory, the connections are strengthened with trail or practice and the connections are weakened when trial or practice is discontinued. The 'law of exercise', therefore, is also understood as the 'law of use and disuse' in which case connections or bonds made in the brain cortex are weakened or loosened. Many examples of this case are found in case of human learning. Learning to drive a motor-car, typewriting, singing or memorizing a poem or a mathematical table, and music etc. need exercise and repetition of various movements and actions many times.

The third law is the 'Law of Effect', according to which the trial or steps leading to satisfaction stamps in the bond or connection. Satisfying states lead to consolidation and strengthening of the connection, whereas dis-satisfaction, annoyance or pain leads to the weakening or stamping out of the connection. In fact, the 'law of effect' signifies that if the response satisfies the subject, they are learnt and selected, while those which are not satisfying are eliminated. Teaching, therefore, must be pleasing. The educator must obey the tastes and interests of his pupils. In other words, greater the satisfaction stronger will be the motive to learn. Thus, intensity is an important condition of 'law of effect'.

This theory of learning postulated by Thorndike will greatly support this research, this is because, there's a very clear relationship between readiness, satisfaction, practice and performance. The study will determine the factors that influence the academic performance of the students in Physics. Specifically;

1. To investigate the student academic performance in Physics among senior secondary school in Guri local government area, Jigawa State.
2. To determine the factors affecting physics performance among students at selected senior secondary schools in Guri local government, Jigawa state.
3. To determine the availability of physics laboratory equipment among senior secondary schools in Guri local government area, Jigawa State.
4. To determine the strategies used in teaching physics among senior secondary schools in Guri local government area, Jigawa State.

HYPOTHESES

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

Ho_1.There will be no significant difference in the mean record of SSCE result of urban and rural student academic performance in Physics among senior secondary school in Guri local government area, Jigawa State.

Ho_2.There will be no significant difference in the mean responses of Principals, teachers and students in Urban and rural schools on factor affecting the physics performance among students at selected senior secondary schools in Guri local government, Jigawa state.

Ho_3.There will be no significant difference in the mean responses of Principals, teachers and students in Urban and rural schools on the availability of Physics laboratories equipment among senior secondary school in Guri local government area, Jigawa State.

Ho_4.There will be no significant difference in the mean responses of Principals, teachers and students in Urban and rural schools on strategies used in teaching Physics among senior secondary school in Guri local government area, Jigawa State

MATERIALS & METHODS

The study adopted the descriptive survey research design To identify the factors affecting physics performance among students at selected senior secondary schools in guri local government, Jjigawa state. Survey research design is used because the author has no Control over the factors affecting physics performance rather to discover and report what has happened or what is happening. Similarly, descriptive survey research was considered suitable for the

study since the study will solicit the opinion of teachers and students in public and private schools. The process is in order to set certain hypothesis or answer to research questions generated in the study. A survey design is one of the major categories of descriptive design that describes the present condition of a given phenomenon by collecting data from defined population.

The population for the study comprises of all 3 Principals, 71 Teachers and 1458 students. A total of 1532were served as a population for the study. The sample size for the study was 515 respondents. The sample size for the study comprise of four 3 Principals, 9 teachers, 503 students. A total of 515 respondents were used for the study. The instrument used for data collection was a structured questionnaire titled: "The factors affecting Physics performance among students at selected senior secondary schools in Guri local government, Jigawa State" (FAPPAS) was developed by the researchers to collect relevant data on the Performance of Students in Physics in Some Selected Secondary Schools in Guri Local Government Area of Jigawa State. The instrument was validated by experts in the faculty of Science Education USCOEGA. Their observations and correction was incorporated in the final draft which will be subsequently used for the study after a test of reliability. The reliability of the instrument was established using a Cronbach alpha to determine the internal consistency. The test was administered on 12Teachers, from GSTC Gashu'a in Yobe State North-eastern Nigeria. Yobe State was chosen because it has similar characteristics and share boundary with Jigawa State. The teachers and students used to establish the reliability were not involved in the study. However, the reliability of instruments yielded 0.87 reliability coefficient.

The instrument was administered and retrieved from the respondents with the aid of the three research assistants. The administration and retrieval of the questionnaire from the respondents was through personal contact. Through this method, a hundred percent return rate was achieved

The data collected for this was analyzed using means, standard deviation through SPSS Version 20 to answer the research questions. For decision, items with mean responses of 2.50 and above were considered as high. While mean rating of less than 2.49 were considered as low mean rating disagree. The hypothesis was tested using Analysis of Variance at 0.05 significance

level, that is, any item above 0.05 were considered significant while, item below 0.05 were considered not significant, therefore rejected.

RESULTS

The results are presented in tables according to research objectives and the hypotheses that guided the study.

Table 1: Performance of students in Physics at SSCE level WAEC from 2021 to 2023 in Guri local government, Jigawa State

Grades in percentage												
Subject	**Year**	**Total Reg/Sat**	**No abs**	**A1**	**B2**	**B3**	**C4**	**C5**	**C6**	**D7**	**E8**	**F9**
Physics	2023	150	0	12.6		36.56	36.3	44	34	7.86		
	2022	157	0	25.9	34.5		29.9	25		10.6	24	8
	2021	182	0	16.49	18.2	25.97	40	34.48	36.4	17.6	12	6.34

Source: Education Zonal office, Guri L.G

Table 2: Means and Standard Deviation of Responses of the Respondents on the factors affecting physics performance among students at selected senior secondary schools in Guri local government, Jigawa State

N=515

S/n	Items	Mean	SD	Remark
1	Poor teacher preparation	3.0272	3.0272	Agree
2	Shortage of quality teachers	3.3087	3.3087	Agree
3	Poor methods of teaching	2.5709	2.5709	Agree
4	Non-usage of instructional materials	3.0019	3.0019	Agree
5	Insufficient resources and facilities for teaching Physics education	2.4913	2.4913	Disagree
6	Shortage of computer hardware	2.6505	2.6505	Agree
7	Lack of textbooks for students' use	2.7864	2.7864	Agree

8	Teaching physics by theory without practical	2.9689	2.9689	Agree
9	Inadequate funding of education by the government	2.8058	2.8058	Agree
10	Socio-economic background of the students	2.7398	2.7398	Agree
11	Poor condition of the service of teacher	2.6854	2.6854	Agree
12	ill-equipped laboratories	2.9126	2.9126	Agree

The result presented in Table 2 on the factor affecting physics performances among students at selected senior secondary schools indicates that item 1, 2,3,4, 6,7,8,9,10,11 and 12 recorded a mean of 3.0272, 3.3087,2.5709, 3.00192.6505, 2.7864, 2.9689, 2.8058, 2.7398, 2.6854, and 2.9126 had mean above 2.50. The remaining one item has a mean of 2.4913. The Standard Deviation ranges from 2.4913 to 3.3087 which means that the respondents are not far from each other in their responses on each of the items.

Table 3: Means and Standard Deviation of Responses of the Respondents on the availability of physics laboratory equipment among senior secondary schools in Guri local government area, Jigawa State

N=515

S/n	Items	**Mean**	**SD**	**Remark**
1	Meter Rule	3.0699	0.98578	Adequate
2	Vernier Caliper and Micrometer screw gauge	3.3631	0.90942	Adequate
3	Spring Balance	3.0816	0.87394	Adequate
4	Retort stand and clamp	3.1398	0.80118	Adequate
5	Spiral Spring	3.0971	0.95333	Adequate
6	Rectangular and Triangular Glass Prisms	3.0990	0.98030	Adequate
7	Optical mirrors and Lens	3.4505	0.91835	Adequate
8	Stop Clock / watch	3.1825	0.99887	Adequate

9	Ray boxes	2.8680	0.98926	Adequate
10	Ammeters, Voltmeters and Galvanometer	2.5825	1.15967	Adequate
11	Rheostat and Resistance box	3.1029	1.01309	Adequate
12	Potentiometer	2.8583	0.93843	Adequate
13	Meter bridge, Plug and Jockey	2.3010	1.17889	Adequate
14	Gold-leafs electroscope	2.5806	1.01679	Adequate
15	Thermometer	2.6660	1.29842	Adequate
16	Calorimeter	2.5379	1.14852	Adequate
17	Pendulum Bob with hooks	2.7282	4.53562	Adequate
18	Sonometer	2.7689	1.06547	Adequate
19	Linear expansion Apparatus	2.4757	1.16403	Inadequate
20	Bar and Horse-shoe magnets	3.1301	1.14195	Adequate
21	Capacitors, inductors, transistors and resistors	2.8602	1.15521	Adequate
22	Pulleys (various types)	2.8699	0.98854	Adequate
23	Daniel and Laclanche cells	2.6835	0.89899	Adequate
24	Telescope	2.6738	1.11341	Adequate
25	Electrodes (copper, zinc, carbon etc)	3.0796	1.03230	Adequate

The result presented in Table 3 on the factor affecting physics performances among students at selected senior secondary schools indicates that item 1, 2,3,4, 6,7,8,9,10,11, 12,13, 14, 15, 116, 17, 18, 20, 21, 22, 23, 24, and 25 recorded a mean of 3.0699, .3631, 3.0816, 3.1398, 3.0971, 3.0990, 3.4505, 3.1825, 2.8680, 2.5825, 3.1029, 2.8583, 2.3010, 2.5806, 2.6660, 2.5379, 2.7282, 2.7689, 3.1301, 2.8602, 2.8699, 2.6835, 2.6738, and 3.0796 had mean above 2.50. The

remaining one item has a mean of2.4757.. The Standard Deviation ranges from 0.80118 to 1.16403 which means that the respondents are not far from each other in their responses on each of the items.

Table 4: Means and Standard Deviation of Responses of the Respondents on the strategies used in teaching physics among senior secondary schools in Guri local government area, Jigawa State

N=515

S/n	Items	Mean	SD	Remark
1	Lecture method	2.7476	0.92646	Agree
2	Group discussion method	2.4272	1.14852	Disagree
3	Cooperative teaching strategy	2.4505	1.16155	Disagree
4	Project/Assignments	2.7709	0.78775	Agree
5	Practical work teaching method	3.2563	0.76673	Agree
6	Game/simulation	2.7864	1.00631	Agree
7	Discussion/seminar/workshop	2.4699	1.17553	Disagree
8	Demonstrations method	2.7184	1.07517	Agree
9	Field Trip/excursion	2.5786	1.10320	Agree
10	Computer-Assisted Learning	2.5165	0.95074	Agree

The result presented in Table 4 on the factor affecting physics performances among students at selected senior secondary schools indicates that item 14,5,6,4, 6, 8,9 and 10 recorded a mean of, 2.7476, 2.7709, 3.2563, 2.7864, 2.7184, 2.5786, and 2.5165 had mean above 2.50. The remaining one item has a mean of 2.4272, 2.4505 and 2.4699. The Standard Deviation ranges from 0.76673 to 1.17553 which means that the respondents are not far from each other in their responses on each of the items.

Table 5: Analysis of Variance(ANOVA) of the Mean Responses of the Respondents on the on the factors affecting physics performance among students at selected senior secondary schools in Guri local government, Jigawa State

N=515 Principals 3, Teachers 9, Students 503

	Items	Mean	SD	df	F	Sig	Remark
1	Poor teacher preparation	3.0272	3.0272	2	1.075	.342	S
2	Shortage of quality teachers	3.3087	3.3087	2	0.738	.478	S
3	Poor methods of teaching	2.5709	2.5709	2	0.225	.798	S
4	Non-usage of instructional materials	3.0019	3.0019	2	0.250	.779	S
5	Insufficient resources and facilities for teaching Physics education	2.4913	2.4913	2	2.841	.059	S
6	Shortage of computer hardware	2.6505	2.6505	2	0.224	.799	S
7	Lack of textbooks for students' use	2.7864	2.7864	2	1.659	.191	S
8	Teaching physics by theory without practical	2.9689	2.9689	2	0.356	.700	S
9	Inadequate funding of education by the government	2.8058	2.8058	2	0.072	.931	N
10	Socio-economic background of the students	2.7398	2.7398	2	0.606	.546	S
11	Poor condition of the service of teacher	2.6854	2.6854	2	0.227	.797	S
12	ill-equipped laboratories	2.9126	2.9126	2	0.242	.785	S

S=Significant NS=Significant SD=Standard Deviation

Result presented in Table 5 indicate that the calculated F values for items 1,2,3,4,5,6,7,8,9, 10, 11 and 12 are above 0.05 significant level. Hence, there is significant difference in the mean responses of the respondents on those items. The null hypothesis was therefore rejected for those items and the alternative hypotheses accepted.

Table 6: Analysis of Variance(ANOVA) of the Mean Responses of the Respondents on the on the factors affecting physics performance among students at selected senior secondary schools in Guri local government, Jigawa State

N=515 Principals 3, Teachers 9, Students 503

	Items	Mean	SD	df	F	Sig	Remark
1	Meter Rule	3.0699	0.98578	2	.259	.772	S
2	Vernier Caliper and Micrometer screw gauge	3.3631	0.90942	2	.206	.814	S
3	Spring Balance	3.0816	0.87394	2	.672	.511	S
4	Retort stand and clamp	3.1398	0.80118	2	.093	.911	S
5	Spiral Spring	3.0971	0.95333	2	.530	.589	S
6	Rectangular and Triangular Glass Prisms	3.0990	0.98030	2	1.006	.366	S
7	Optical mirrors and Lens	3.4505	0.91835	2	1.344	.262	S
8	Stop Clock / watch	3.1825	0.99887	2	2.154	.117	S
9	Ray boxes	2.8680	0.98926	2	.863	.423	S
10	Ammeters, Voltmeters and Galvanometer	2.5825	1.15967	2	.658	.518	S
11	Rheostat and Resistance box	3.1029	1.01309	2	.251	.778	S
12	Potentiometer	2.8583	0.93843	2	.494	.610	S
13	Meter bridge, Plug and Jockey	2.3010	1.17889	2	1.294	.275	S
14	Gold-leafs electroscope	2.5806	1.01679	2	.183	.832	S
15	Thermometer	2.6660	1.29842	2	1.651	.193	S
16	Calorimeter	2.5379	1.14852	2	1.890	.152	S
17	Pendulum Bob with hooks	2.7282	4.53562	2	.044	.957	NS
18	Sonometer	2.7689	1.06547	2	1.768	.172	S
19	Linear expansion Apparatus	2.4757	1.16403	2	1.645	.194	S
20	Bar and Horse-shoe magnets	3.1301	1.14195	2	2.715	.067	S
21	Capacitors, inductors, transistors and resistors	2.8602	1.15521	2	3.187	.042	NS

22	Pulleys (various types)	2.8699	0.98854	2	.368	.692	S
23	Daniel and Laclanche cells	2.6835	0.89899	2	2.471	.086	S
24	Telescope	2.6738	1.11341	2	2.347	.097	S
25	Electrodes (copper, zinc, carbon etc)	3.0796	1.03230	2	1.224	.295	S

Result presented in Table 6 indicate that the calculated F values for items 1,2,3,4,5,6,7,8,9, 10, 11,12,13, 14,15,16,18,19,20,22,23,24,and 25 are above 0.05 significant level. Hence, there is significant difference in the mean responses of the respondents on those items. The null hypothesis was therefore rejected for those items and the alternative hypotheses accepted.

Table 7: Analysis of Variance(ANOVA) of the Mean Responses of the Respondents on the on the factors affecting physics performance among students at selected senior secondary schools in Guri local government, Jigawa State

N=515 Principals 3, Teachers 9, Students 503

	Items	**Mean**	**SD**	**df**	**F**	**Sig**	**Remark**
1	Lecture method	2.7476	0.92646	2	.349	.705	S
2	Group discussion method	2.4272	1.14852	2	.209	.812	S
3	Cooperative teaching strategy	2.4505	1.16155	2	1.083	.340	S
4	Project/Assignments	2.7709	0.78775	2	.411	.663	S
5	Practical work teaching method	3.2563	0.76673	2	.178	.837	S
6	Game/simulation	2.7864	1.00631	2	.932	.395	S
7	Discussion/seminar/workshop	2.4699	1.17553	2	.841	.432	S
8	Demonstrations method	2.7184	1.07517	2	.593	.553	S
9	Field Trip/excursion	2.5786	1.10320	2	3.694	.026	S
10	Computer-Assisted Learning	2.5165	0.95074	2	1.934	.146	S

Result presented in Table 7 indicate that the calculated F values for items 1,2,3,4,5,6,7,8,9, and 10 are above 0.05 significant level. Hence, there is significant difference in

the mean responses of the respondents on those items. The null hypothesis was therefore rejected for those items and the alternative hypotheses accepted.

DISCUSSION OF FINDINGS

The finding of the study were organized and discussed under the following sub-headings: Factor affecting physics performances among students at selected senior secondary schools, Availability of physics laboratory equipment among senior secondary schools and Strategies used in teaching physics among senior secondary schools.

Factor affecting physics performances among students at selected senior secondary schools,

Question one sought to identify information on the Factor affecting physics performances among students at selected senior secondary schools. The findings revealed that 11 items out of 12 items respondents chooses as the most common factor affecting physics performances among students at selected senior secondary schools. It is agreed with Adebola (2007) listed poor teacher preparation, shortage of quality teachers, poor methods of teaching and non-usage of instructional materials which also include laboratory equipment as challenges to science instruction. Similarly, Ajayi (2007) outlined inadequate teaching, a lack of learning resources, learners' attitudes, government policy, and parental background, a lack of learners' preparation, poor management style, and a lack of adequate competent teachers as factors that influenced physics teaching-learning outcomes over time. According to Obioha (2006), there are insufficient resources for teaching science topics in Nigerian secondary schools. He went on to say that if there are few resources, they are frequently in poor condition, and the few that are in good condition are insufficient to cover everyone who needs them.

Availability of physics laboratory equipment among senior secondary schools

Question two sought to identify information on the Availability of physics laboratory equipment among senior secondary schools. The findings revealed that only one item found to be not adequate in schools laboratory. All items outline are adequate agrees with Dinah (2013) concluded that, availability of laboratory apparatus, text books and learning resources contribute significantly to the performance of students in Physics examination. He added that, students with positive attitude towards the subject register better performance than those who had a negative attitude. Those with positive attitude are motivates to work hard and this is reflected in the good marks scored in the examination.

Strategies used in teaching physics among senior secondary schools

Question two sought to identify information on teaching strategies study found that the following are the types of teaching used in teaching physics such as Lecture method, Project/Assignments, Practical work teaching method, Game/simulation, Demonstrations method, Field Trip/excursion and Computer-Assisted Learning. Dunn, (2008) involve activities that occur in the classroom as a means of demonstrating how a phenomena 'works' This technique is slightly more active than lecture because the students are able to get involved and see first-hand how the construct or phenomena presents itself in the real world. Additionally, demonstrations can break up the pace of the classroom while also providing an enjoyable experience for the students (Forsyth, 2003).

CONCLUSIONS

The study conducted and concluded that laboratory equipment is available; teaching strategies used by physics teachers has been identified as well as factors affecting teaching of Physics in senior secondary schools. It is unethical for the proper teaching of physics when it is neglected this will lead to poor performance of students.

Implications

The findings of study have the following implications

Research findings indicate that necessary resources are made available by government and other stake holders, not only for the teachers use in class demonstration, but also for the use of the individual students in their discovery learning tasks failure to utilize it Students are prone to graduate without obtaining the basic knowledge in physics and they may not withstand the challenges in labour market.

Recommendations

The following recommendations were made:

- Finding on the availability of laboratory materials it is important for the School heads and laboratory technicians to ensure an adequate storage and protection of laboratory equipment.
- Physics teachers should be encouraged to make use of the adequate laboratory equipment provided for teaching of physics practical.

- Physics teachers should be encouraged to use available teaching strategies in teaching Physics concepts at secondary schools level as it is empirically established that it enhances students' academic performance.
- Relevant monitoring bodies are adequately funded to carryout routine supervision to minimize major factor affecting teaching Physics base on finding of the study.

Suggestion for Further Research

The following recommendations are made for further research:

1. The same research could be conducted in other fields of sciences, and States
2. Effect of activity-based learning strategies on physics students' interest and academic performance in physics
3. Extent of availability and usage of various laboratory equipment among physics students

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