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AVAILABILITY AND USE OFINSTRUCTIONAL MATERIALS IN TEACHING BASIC SCIENCE IN SECONDARY SCHOOLS IN IGBO ETITI LOCAL GOVERNMENT AREA OF ENUGU STATE

By

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Abstract

The study investigated on the Availability and Utilization of Instructional Materials in Teaching Basic science in Secondary Schools in Igbo Etiti Local Government Area of Enugu State. Three research questions guided the conduct of the study. The design of the study was descriptive survey. The population of the study comprised all teachers in secondary schools in Igbo Etiti L. G. A of Enugu State. The sample consisted of 41 Basic Science teachers from the study area. The instrument used for the study was tagged "Availability and Utilization of Instructional Materials in Teaching Basic Science Questionnaire". The researcher adopted descriptive statistics involving mean and standard deviation in analyzing the data collected. The findings from the study revealed that computer, slide projector, television, tape recorder and video player are to a low extent available for the teaching of basic science in secondary schools. Another finding revealed that computer, slide projector, television, tape recorder and video player are not utilized by teachers for the teaching of basic science in secondary schools. Based on the findings of the study, the following recommendations were made: government and other stakeholders in education should provide instructional materials especially the projected and manipulative types like the computer, slide projectors, video recorders to enhance the teaching and learning of Basic Science in secondary schools.

Keywords: Poor Performance, Basic Science, Secondary Schools

Introduction

Education is the bedrock for survival, growth and development of any society. In Nigeria, education is perceived as an instrument for achievement of national objectives. According to the National Policy on Education (NPE, 2013), education is an "instrument per excellence" for achievement of national development. According to Ugwu, (2011) state that education generally forms the backbone of any nation's development and a reliable source of empowerment in the acquisition of skills and knowledge. He also notes that education may be regarded as a method of teaching people out of ignorance. It is a means of socializing human beings. An understanding and appreciation of the nation's enterprise system demands a level of economic literacy sufficient to enable the individual analyse alternatives, make reasonable judgment and decisions, and take intelligent actions as citizens.

Basic science is designed to enable the learners develop interest in science and technology, acquire basic knowledge and skills in science and technology, and also apply their scientific and technological knowledge and skills to meet societal needs(Danmole, 2011). If these objectives will be achieved, then efforts will be made to provide adequate instructional materials to Nigeria Junior secondary schools in teaching of Basic science and to encourage its effective use. Despite the emphasis placed on the usefulness of instructional materials in teaching and learning process, most students still find it difficult to cope with the subject of basic science in schools. This may have resulted from lack of underutilization of instructional materials by teachers(Duada, and Udofia, 2010).

Basic science formerly known as Integrated Science is the first form of science a child comes across at the secondary school level. Basic science is a core subject in the National curriculum at the upper basic level (Kim, 2011). All students from upper basic I-III classes must offer and study the subject. Basic science is considered the bedrock of all science subjects at the senior secondary school (SSS) level. The subject prepares students at the upper basic level for the study of core science subjects which are (biology, chemistry and physics) at the senior secondary school level (Olarewaju in Oludipe, 2012). According toOludipe, (2012) further emphasized that student can be able to study single science subjects at the senior secondary level successfully; such student has to be well grounded in Basic Science at the upper basic level before proceeding. Based on this, it is generally taught as a single science

subject, until in the SSS level, and then split into specialized science subjects (biology, chemistry and physics). It is expected that those students who achieved well in basic science should be given the opportunity to study the separate science subjects at the SSS level.

According to Trustees of Princeton University, (2013)state that basic Science is a revolutionary new introductory science curriculum developed at Princeton intended for students considering a career in science. Basic science emphasizes scientific literacy and research-oriented learning (Eyles, 2012). The subject encourages exploration of student's immediate environment. As a result, basic science teachers continue to learn along with their students. The teaching of basic science is therefore, based on the philosophy of active learner-participation in the process whereby, students are encouraged to learn by constructing their own knowledge based on what they already understand as they make connections between new information and old information, guided or facilitated by the teacher (Emaikwu, 2012). Under this philosophy, students are encouraged and led to discover concepts and generalizations based on their experiments.Odu, (2011)stated that children learn science using the process and activity approaches, they improve their ability to apply intellectual skills to solve problems, improve their language development, become more creative, master science content better and develop positive attitude towards science and scientists. According toOchu, and Haruna, (2014) shown that the above desires are not being achieved as expected. The learning environment is expected to be democratic, the activities are interactive and student-centred and the teacher facilitates the process of learning in which students are encouraged to be responsible and autonomous.

Instructional materials are essential and significant tools needed for teaching and learning of school subjects to promote teachers' efficiency and improve students' performance. They make learning more interesting, practical, realistic and appealing. They also enable both the teachers and students to participate actively and effectively in lesson sessions. They give room for acquisition of skills and knowledge and development of self-confidence and self- actualization (Abdu-Raheem, 2016). Crist, (2014) defined instructional materials as objects or devices that assist the teacher to present a lesson to the learners in a logical manner. Adedijo, (2012) reported that instructional materials of all kinds appeal to the sense organs during teaching and learning. Isola, (2010) also described instructional materials as objects or

devices that assist the teachers to presenttheir lessons logically and sequentially to the learners.

According to Abolade, (2011) the advantages of instructional materials are that they are cheaper to produce, useful in teaching large number of students at a time, encourage learners to pay proper attention and enhance their interest. Oluwagbohunmi and Abdu-Raheem, (2014) acknowledged that instructional materials are such used by teachers to aid explanations and make learning of subject matter understandable to students during teaching learning process. Abdu-Raheem, (2011) asserted that non availability and inadequacy of instructional materials are major causes of ineffectiveness of the school system and poor performance of students in schools. Ogbondah, (2011) reported a gross inadequacy and under use of instructional materials necessary to compensate for the inadequacies of sense organs and to reinforce the capacity of dominant organs. He noted that school teachers should try their possible best in the provision of locally made materials in substitution for the standard ones to promote their lessons. Enaigbe,(2010) noted that basic materials such as textbooks, chalkboard and essential equipment like computer, projector, television and video are not readily available in many schools. However, Akinleye, (2010) attested that effective teaching and learning requires a teacher to teach the students with instructional materials and use practical activities to make learning more vivid, logical, realistic and pragmatic.

Despite the fact that instructional materials are essential tools that can make learning practical and knowledge acquisition easier, they are not readily available in Nigerian secondary schools, leading to low level of performance of learners in examinations (Abdu-Raheem, 2014).This study therefore sought to investigate the extent of availability and use of instructional materials in the efficient teaching of Basic Science in secondary schools in Igbo Etiti LGA, Enugu State.

The main purpose of this study is to examine the extent of availability and use of instructional materials in teaching of Basic Science in Secondary Schools in Igbo Etiti Local Government Area of Enugu State. Specifically, the study sought to;

- ❖ Identify the extent of availability of instructional materials in teaching of Basic Science
- ❖ Ascertain teachers' use of available instructional materials while teaching.

❖ Ascertain the problems encountered by teachers in using the instructional materials.

The following questions were raised to guide the study:

- To what extent does instructional materials available for the teaching of Basic Science?
- To what extent do teachers use instructional materials in teaching Basic Science?
- What problems do teachers encounter in the use of instructional materials in teaching Basic Science?

Methodology

The research design adopted for this study is descriptive Survey research design. This research design was adopted because the subject of investigation centers on the availability and use of instructional materials in teaching Basic Science. The choice of survey research design is informed by its efficient way to collect information about a large group of people, less susceptible to error if standardized, easy to administer and can be tailored exactly to the phenomena the researcher is studying. This study was carried out in Igbo Etiti Local Government Area of Enugu State. The population of the study comprised all Basic Science teachers in public secondary schools in Igbo Etiti Local Government Area of Enugu State. There are 41 Basic Science teachers in the ten public secondary schools in the study area (Universal Education Board Enugu State, 2017). Since the Population is small, 41, the researcher did not sample. All the 41 Basic Science teachers were used as the respondents.

The instrument used for this study is a questionnaire on the extent of availability and use of instructional materials in teaching of Basic Science in Secondary Schools in Igbo Etiti Local Government Area of Enugu State (AUIMTBSSSQ) was used for this study. The questionnaire was self-structured in nature and consisted of two sections "A" and "B". Section A was designed to elicit responses on demographic variables such as sex, age,class,e.t.c while section B contained 20 items. Section B contained items which were rated on a four point scale of Very High Extent (VHE), High Extent (HE), Low Extent (LE), Very Low extent (VLE).The questionnaire was used by the researcher fur data collection.It was personally administered by the researcher.A total of 41 questionnaires were distributed and collected in

analyzing the data in the study.The Pearson Product Moment Correlation Coefficient (r) was used to determine the degree of reliability. The instrument yielded a correlation coefficient of 0.83. The value was significantly higher than 0.05 coefficient value; hence the instrument was accepted as reliable.Data collected from the study were presented in tables in line with the research questions. Mean scores and standard deviation was used for the analysis and interpretation of the data. Strong Agree (SA)= 4 Points, Agree (A)= 3 Points, Disagree (D)= 2 Points and Strong Disagree (SD)= 1 Point

Thus, $4+3+2+1=^{10}/_{4}$ = **2.50**

Decision rule was based on the premise that any of the mean scores that rated from 2.5 and above was considered as "agree" and therefore accepted. However, any mean score which rated 2.49 and below was termed as "disagree" therefore not accepted.

Results and Discussion

Research Question 1: To what extent are instructional materials available for the teaching of Basic Science?

Table 1: Mean distribution of respondents rating on the extent to which instructional materials are available for the teaching of Basic Science.

S/N	Statementa	SA	A	D	SD	X	S.D	Decision
1	To what extent does computer used as an instructional material in teaching of basic science	2	7	31	1	2.2	0.9	**Low Extent**
2	Does chalkboard used as an instructional material for teaching of basic science	23	15	3	0	3.5	1.2	**High Extent**
3	Does slide projector used as an instructional material for teaching of basic science	5	9	21	6	2.3	1.0	**Low Extent**
4	Is textbooks, workbooks, journals, charts and magazines as an instructional material for teaching of basic science	25	12	0	4	3.4	1.1	**High Extent**
5	Is television utilized in teaching of basic science	5	8	16	12	2.1	0.9	**Low Extent**
6	To what extent does tape Recorder used as an instructional material for teaching of basic science	4	2	12	23	1.7	0.8	**Low Extent**
7	Does video player utilized for teaching of basic science	2	3	17	19	1.6	1.1	**Low Extent**

Source: Field work, 2021

Table 1 shows the extent to which instructional materials are available for the teaching of Basic Science. Questionnaire items 2 and 4 recorded high extent with mean scores of 3.5 and 3.4 indicating that chalk board, textbooks, workbooks, journals, charts and magazines are to a high extent available for the teaching of Basic Science while questionnaire items 1, 3, 5, 6, 7and 8 recorded low extent with mean scores of 2.2, 2.3, 2.1, 1.7 and 1.6 implied that computer, slide projector, television, tape recorder and video player are to a low extent not available for the teaching of Basic Science.

Research Question 2: To what extent do teachers use instructional materials in teaching Basic Science?

Table 2: Frequency and mean distribution of respondents rating on the extent to which Basic Science teachers utilize instructional materials in the teaching of Basic Science in secondary schools.

S/N	Statements	SA	A	D	SD	$\bar{X}$	S.D	Decision
8	To what extent does computer used as an instructional material in teaching of basic science	4	7	11	19	1.9	0.8	**Low Extent**
9	Does chalkboard used as an instructional material for teaching of basic science	30	9	2	0	3.7	1.2	**High Extent**
10	Does slide projector used as an instructional material for teaching of basic science	3	3	15	20	1.7	0.6	**Low Extent**
11	Is textbooks, workbooks, journals, charts and magazines as an instructional material for teaching of basic science	27	10	1	3	3.5	1.2	**High Extent**
12	Is television utilized in teaching of basic science	4	1	8	28	1.5	0.4	**Low Extent**
13	To what extent does tape Recorder used as an instructional material for teaching of basic science	1	4	17	19	1.6	0.5	**Low Extent**
14	Does video player utilized for teaching of basic science	4	0	12	25	1.6	0.6	**Low Extent**

Source: Field work, 2021

Table 2 above shows the extent to which instructional materials are used by Basic Science teachers in the teaching of Basic Science. Questionnaire items 9 and 11 recorded high extent with mean scores of 3.7 and 3.5 indicating that chalk board, textbooks, workbooks, journals, charts and magazines are utilized to a high extent by Basic Science teachers for the teaching of Basic Science while questionnaire items 8, 10, 12, 13, 14 and 15 were low with mean scores of 1.9, 1.7, 1.5, 1.6 and 1.6 indicating that computer, slide projector, television, tape recorder and video player are utilized to a low extent by Basic Science teachers for the teaching of Basic Science.

Research Question 3: What problems do teachers encountered in the use of instructional materials in teaching Basic Science?

Table 3: Frequency and mean distribution of respondents rating on the problems encountered by Basic Science teachers in the use of instructional materials in the teaching of Basic Science in secondary schools.

S/N	Statements	SA	A	D	SD	$\bar{X}$	S.D	Decision
15	Teachers are faced with insufficient time allocation to accommodate effective instructional materials utilization in business studies instruction	30	9	2	0	3.7	1.2	**High Extent**
16	Lack of opportunities for in-service training course for business studies teachers to update their knowledge on resource development leads to poor utilization of instructional materials in the teaching of the subject	27	10	1	3	3.5	1.2	**High Extent**
17	Lack of finance to acquire needed instructional materials impacts negatively on the teaching and learning of business studies	28	8	4	1	3.5	1.2	**High Extent**
18	Low teacher competence in effective instructional resource utilization negatively affects teaching outcome.	15	20	3	3	3.1	1.1	**High Extent**
19	Poor teacher's professional knowledge and technical know-how to teach practical skill content areas of business studies leads to low utilization of instructional materials.	11	16	10	4	2.8	1.0	**High Extent**
20	Poor maintenance culture of existing instructional materials especially projected and manipulative types hinders the utilization of instructional materials	15	22	1	3	3.2	1.1	**High Extent**

Source: Field work, 2021

Table 3 above shows the problems encountered by Basic Science teachers in the use of instructional materials in the teaching of Basic Science. All the

questionnaire items recorded high extent with mean scores of 3.7, 3.5, 3.5, 3.1, 2.8 and 3.2 indicating that lack of opportunities for in-service training course for Basic Science teachers to update their knowledge on resource development, poor maintenance culture of existing instructional materials especially projected and manipulative types, poor teacher's professional knowledge and technical know-how to teach practical skill content areas of Basic Science amongst others are problems encountered by Basic Science teachers in the use of instructional materials in the teaching of Basic Science in secondary schools.

Conclusion

Based on the result of the findings, the extent of the availability and use of instructional materials in teaching of Basic Science in Secondary Schools revealed among others that Computer, slide projector, television, tape recorder and video player are to a low extent available for the teaching of Basic Science in secondary schools, Computer, slide projector, television, tape recorder and video player are not used by teachers for the teaching of Basic Science in secondary schools, lack of opportunities for in-service training course for Basic Science teachers to update their knowledge on resource development, e.t.c. If the Government can Provide instructional materials and create opportunities for in service training for Teachers and Teachers can use the available instructional materials in their teaching, this will greatly improve the teaching and learning of Basic Science.

Implications of the Study

The study has revealed the extent of availability and use of instructional materials in teaching Basic Science in secondary schools in Igbo Etiti Local Government Area of Enugu State. Therefore, the following are the educational implications of the study.

- Government and other stakeholders in education should provide instructional materials especially the projected and manipulative types like the computer, slide projectors, video recorders etc to enhance the teaching and learning of Basic Science in secondary schools.
- In-service training courses should be occasionally organized for Basic Science teachers to update their knowledge on resource development to enhance the utilization of instructional materials in the teaching of the subject.

- Enough time should be allocated for effective instructional delivery of Basic Science

Recommendations

Based on the findings, the following recommendations are made to improve the extent of availability and use of instructional materials in teaching of Basic Science in Secondary Schools in Igbo Etiti Local Government Area of Enugu State. The findings revealed that the use computer, slide projector, television, tape recorder and video player are to a low extent not available for the teaching of Basic Science in secondary schools. This has serious implications on Teachers and Students because without the provision of adequate teaching materials in schools for teaching Basic Science, the achievement of the Basic Science curriculum objectives might be quite impossible. These resources should be provided in quality and quantity by Government and other stakeholders in schools for effective teaching-learning process.

The findings also revealed that computer, slide projector, television, tape recorder and video player are not utilized by teachers for the teaching of Basic Science in secondary schools. This has implication on Students because appropriate utilization of resources in schools controls dropout rates, maintains student discipline and makes students remain motivated for a longer period which is critical in making teaching-learning more effective. They also help to improve access and educational outcomes since students are less likely to be absent from schools that provide interesting, meaningful and relevant experiences to them. Teachers should be encouraged to use available resources in their teaching to motivate students to learn.

Finally, the study revealed that lack of opportunities for in-service training course for Basic Science teachers to update their knowledge on resource development, poor maintenance culture of existing instructional materials especially projected and manipulative types, and poor teacher's professional knowledge and technical know-how to teach practical skill content areas of Basic Science amongst others are problems encountered by teachers in the use of instructional materials in the teaching of Basic Science in junior secondary schools. This has serious implications on teachers because they play a significant role in educational attainment, teachers are ultimately

responsible for translating curriculum content into action during classroom interaction with the students.

If these measures are taken, there will be a lot of improvement in the availability and use of instructional materials in teaching Basic Science not only in the local government but in the state at large.

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