LEARNING FACILITIES AND THE TEACHING OF SCIENCE TOWARDS SUSTAINABLE DEVELOPMENT IN EKITI STATE

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Abstract
Education plays a crucial role in the development of a nation. The socio-political and economic development of a nation is in many ways determined by the quality and level of educational attainment of the citizens. It is upon this background that this study investigated learning facilities and the teaching of science in Ekiti State. The study adopted descriptive design of the survey type. The population consisted of Biology, Chemistry and Physics teachers in Ekiti State. 300 teachers teaching these three core science subjects were selected using multistage sampling procedure .The instrument used was a questionnaire tagged 'The leaning facilities for the teaching of science questionnaire'. It was used to seek information whether the teaching facilities are enough for effective teaching and are well utilized by the teachers. The instrument was validated by experienced science teachers and their corrections were implemented. A reliability coefficient of 0.81 was obtained using test retest method. Two research questions were raised. The data generated were analyzed using descriptive analysis of frequency counts and percentages.The result of the finding showed that the facilities are not adequate enough to support teaching of science subjects. Also, it was revealed that the few facilities available were not utilized regularly by the science teachers due to paucity of power supply. It was recommended that the government should provide enough teaching facilities to the school. Also, teachers should be encouraged by organizing workshop on how to utilize the available facilities for effective teaching.

Key Words: Learning facilities, Teaching, Science, Sustainable development

Introduction

The teaching of science in Nigeria commenced in 1859 with nature study, this later expanded to Physics, Chemistry and Biology. Science has developed into one of the greatest and most influential field of human endeavour in resolving human problems. The application of knowledge, productive skill and sustainable technological development in Nigeria are achieved through meaningful science education. For instance, Badejo (2016) believed that one of the values which exact a nation is education. It is the only legacy a parent can bequeath to a child, which will continue to be with the child forever. As Nelson Mandela once said that Education is the most powerful weapon which can be used to change the world. Education is the bedrock of modern civilization.

Education has been confirmed as the vehicle for the socio-economic and

technological advancement of any people all over the world. Okumu (2008) believed that education is a fundamental human right as well as a catalyst for economic growth and human development. Education plays significant roles in the lives of individuals as well as nations through individual skills, competencies and attitude. Education also contributes to national development through provision of an appropriate human resources that helps to stimulate productivity and eliminate hunger, poverty, diseases and ignorance.

Education is critical for promoting sustainable development and improving the capacity of the people in order to address environmental and developmental issues. Education for sustainable development empowers people to change the way they think and work towards a sustainable future. It also allows every human being to acquire the knowledge, skill, attitude and values necessary to stage a sustainable future. Sustainable development is the organizing principle for meeting human developmental goals while at the same time sustaining the ability of natural systems to provide natural resources. Also, it is a development that meets the needs of the present without compromising future exploitations. Sustainable development has many criteria such as social (e.g growth of public participation and awareness), economy (e.g growth of annual income) and the most important, environment (e.g growth of facilities / infrastructure and ecological management). A teaching approach that centers on the teacher, making the students passive is bad for science teaching and learning .Such approach will soon kills the interest of students in the subject. Biehle (2008) opined that school facilities affect teachers' recruitment, retention, commitment, and effort with respect to students' behavior, engagement, learning and growth in achievement. Thus, facilities quality is an important prediction of teachers' retention and students' learning. Owoeye (2000) submitted a positive relationship between school facilities and school effectiveness. In the same vein, Ahunaya and Ubadudu (2006) supported the provision of adequate facilities for effective teaching and learning in the schools.

Buckley, Schneider and Shang (2004) supported that where facilities and resources are available a qualified and motivated science teacher will deploy methods that center on the learners. Such an approach emphasizes practical activities and has the pupils' experimenting, solving problems, discussing with each other and involved in practical hands – on activities. This approach stimulates curiosity, imagination and critical thinking, thus, improve the performance of the students.

Lewin (2000) believed that availability of science laboratory is not a guarantee of students' performance until both the student and teachers actually use science laboratory facilities effectively without any hindrance. Infrastructural facilities could lead to poor learning outcome due to poor learning environment. Ayeni (2014) submitted that schools with adequate and well equipped laboratory have better results in the certificate examinations than those that are ill-equipped.

School libraries are considered as one of the most important resources within educational facilities. A growing body of research found that school facilities affect health, behavior, engagement, learning, and growth in achievement. Thus, research generally concluded that without adequate facilities and resource, it is extremely difficult to serve large number of children with complex needs. Harold (2015) was disturbed with persistent complaints from academics about rundown facilities, ill-equipped (or unequipped) laboratories and lack of inadequate funds. Chuckuemeka (2008) examined the efficiency of utilization of laboratory facilities during teaching Basic science and reported a significant influence on the students learning outcome. The researchers observed that many science teachers did not utilize or manage the unique environment of school laboratory effectively because practical activities cannot be possible without the basic apparatus and the necessary equipment which are not readily available in most of the schools.

Science students need to interact with the facilities in order to have real information about the concepts of science. The researcher found out that the use of laboratory equipments facilitates the teaching and learning of science subjects, inculcates scientific reasoning and enhances academic performance in the subject.

Statement of the Problem

It is unfortunate that education has not really been accorded the priority it deserves despite the fact that section 18 of 1999 constitution stipulates that government should direct its policy towards ensuring that there is equal and adequate educational opportunities at all levels. It also stipulates that government should promote science and technology, and strive to eradicate illiteracy.

Unfortunately, public schools are not what they are supposed to be; anyone with even recent knowledge of what obtains in public school and how things should run would agree that all is not well with the Nigerian educational sector. When funding is grossly inadequate, as it currently is, there is progressive deterioration of infrastructure, with persistence complaints

from both teachers and students about rundown facilities and ill-equipped (or unequipped) laboratories. It appears all these could be responsible for low performance in the final examination by science students in public secondary school as observed by the researcher.

Purpose of the Study

The purpose of the study is to examine whether learning facilities are enough to support effective teaching for science towards sustainable development in Ekiti state .Also to find out if the available facilities are well utilized to enhance leaning.

Research Questions

The following research questions were raised for the study:

1. Are there enough facilities for teaching science in senior secondary schools in Ekiti State?
2. Are the facilities available well utilized by the science teachersin senior secondary schools in Ekiti State?

Methodology

The study employed descriptive research design of the survey type. The population of the study consisted of all science teachers in secondary schools in Ekiti State, out of which 300 science teachers were sampled across the three senatorial districts in the state using multistage sampling procedure. The first stage involved random selection of 5 Local Government areas from the three senatorial districts. This was followed by selection of 5 schools from each Local Government area using simple random sampling technique. All the teachers of Physics, Chemistry and Biology in selected schools were included in the study.

The research instrument employed for the study was a questionnaire titled "The learning facilities for the teaching of science questionnaires" (LFTSQ). It sought information that confirms whether the teaching facilities are enough for effective teaching and if they are well utilized by the teachers. The instrument was validated by experience science teachers who are WAEC and NECO examiners. The reliability of the instrument was ensured by using test retest method using Pearson Product Moment Correlation. The reliability coefficient of 0.81 was obtained. The data obtained were analyzed using frequency count and percentage score.

Results

Research Question 1:

Are there enough facilities for teaching science in secondary schools in Ekiti State?

In order to answer the question, frequency counts and percentage were used to analyze the responses on the items below.

Table 1: Adequacy of facilities for teaching science in secondary schools in Ekiti State.

SN	ITEMS	YES	%	NO	%
1.	There are separate laboratory for science subjects in the school.	43	14.3	257	85.7
2.	There are enough laboratory equipment for teaching in the school.	62	20.7	238	79.3
3.	There are enough books in the school library	81	27.0	219	73.0
4.	There are enough ICT centre in the school.	21	7.00	279	93.0
5	There are enough internet service in the school.	18	6.00	282	94.0
6	The classrooms are enough for teaching	143	47.7	157	52.3
7	There are enough furniture for teachers	148	49.3	152	50.7
8	There are enough instructional materials for teaching science subject	80	26.7	220	73.3
9	There are enough white boards for teaching	91	30.3	209	69.7
10	There are enough entrepreneurship facilities for the teaching.	16	5.33	284	94.7
	Average		23.4		76.6

Table 1 shows that 14.3% of the respondents indicated that there are separate laboratory for science subject, 20.7% believed that there are enough laboratory equipment for teaching science while 27.0% of the respondents indicated that there are enough books in the school library, 7.00% believed that there are enough ICT centre in the school. The table also showed that 6.0% of the respondents agreed that there are enough internet service in the school, 47.7% indicated that the classrooms are enough for teaching while 49.3% agreed that there are enough furniture for the teachers. 26.7% reported that there are enough instructional materials for teaching, 30.3% agreed that there are enough white boards for teaching while 5.33% indicated that there are enough entrepreneurship facilities for teaching.

It was indicated on the average that 23.4% agreed that science teaching facilities are enough which indicate that teaching facilities for teaching science subjects are not enough to enhance

effective teaching that can bring positive changes on the student performance.

Are the available facilities well utilized by the science teachers in secondary schools in Ekiti State?

Research Question 2:

Table 2: Utilization of facilities by Science Teachers in Ekiti State.

S/N	ITEMS	YES	%	NO	%
1.	Do you prefer to use classroom for teaching?	147	49.0	153	51.0
2.	Are you using separate laboratories for each science subject?	47	15.7	253	84.3
3.	Do you visit library for teaching aids to assist in your teaching?	93	31.0	207	69.0
4.	Does the location of the library discourage you from going there?	63	21.0	237	79.0
5.	Do you teach your students with instructional materials?	102	34.0	198	66.0
6.	Do you agree that using instructional materials will make your work fast?	152	50.7	148	49.3
7.	Do you agree that inadequate practical sessions in science affects your students' performance	151	50.3	149	49.7
8.	Do you prefer to write note on white board than black board?	87	29.0	213	71.0
9.	Do you use ICT gadget to teach your students?	25	8.33	275	91.7
10.	Does the quantity of the equipment encourage you to teach	72	24.0	228	76.0
	Average		31.1		68.8

The table showed that 31.1% of the respondents indicated that they utilized the learning facilities while 68.8% do not utilize the facilities available as expected by the teachers.

Discussion

The findings show that in most schools, there were no separate laboratories for science subjects, no adequate laboratory equipment while most of the libraries are without books and teaching aids. Also, 91.7% do not have ICT centres talk less of having access to internet service. This indicates that the facilities are not enough for meaningful teaching of science. This is

in line with Harold (2015) who expressed in his study that the persistent complaints from academics about rundown facilities, ill-equipped (or unequipped) laboratories and lack of adequate funds. We are in the era of ICT. This has made a wealth of knowledge readily available and easy to access. Ultimately, this helps facilitate rapid development in regards to the social, economic and environmental issues. This can be achieved through surfing of internet with the use of ICT gadget available within their reach, implementing ICT gadgets in our workplace, schools and residence. Also, Ayeni (2014) submitted that schools with adequate and well equipped laboratories have better results in the certificate examination than those that are ill-equipped. Ahunanya and Ubadudu (2006) supported the position of adequate facilities for effective teaching and learning to take place. The development of various education facilities contributes substantially to the development of the nation.

The finding also shows that the facilities are not well utilized by the teacher. This is supported by Okonkwo (2013) who observed that many science teachers do not utilize or managed the unique environment of the school laboratory effectively because practical cannot be possible without the use of basic apparatus and necessary equipment.

Conclusion and Recommendations

Based on the findings of the study, it was concluded that the learning facilities of the teaching science are not enough as expected by the researcher. Also, it was concluded that the available facilities were not utilized by the teachers for meaningful teaching of science. It was therefore recommended that government should provide enough facilities for the teaching of science in schools. In addition, teachers should be encouraged by the government through organizing workshop and seminars on how to use learning facilities for effective teachings.

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