



Evaluating Status of Mathematics Laboratory in Secondary Schools in Ekiti State

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Abstract: The purpose of this study was to evaluate the status of mathematics laboratory in secondary schools in Ekiti State. To achieve these objectives, six research questions were developed and answered. A 6 item-structured questionnaire was developed and used in collecting the data survey research design was used for the study. The questionnaire was administered on 200 respondents and 180 copies were found worthy for data analysis. The findings of the study revealed that not all secondary schools in the selected senatorial Area have Mathematics laboratory and all the students like attending Mathematics laboratory classes. Probably because of equipment and instructional materials in the laboratory which assisted the students to solve mathematics as a visible phenomenon rather than abstract entities. The study also found out that there are problems of inadequate equipment, inadequate professional mathematics teachers and epileptic supply of electricity. It was recommended that Government should provide all the secondary schools with enough mathematics laboratory equipment and provide electricity to the schools to enable students have more interest in mathematics. Mathematics laboratory specialist should be employed to assist students to learn mathematics better.

Keywords: Evaluating, Status, Mathematics, Laboratory, Secondary School.

INTRODUCTION

According To Akinbobola and Afolabi (2010), a productive laboratory environment is a student-centered classroom, which is interactive, comfortable, and collaborative learning is encouraged. NABT (2004) sees a laboratory learning environment as a place where students work individually, or in a small group to solve a problem. The teaching laboratory involves both an illustrative and investigative function. Akinbobola, (2011a). A good laboratory environment promotes students curiosity, rewards creativity, encourage a spirit of healthy questioning avoids dogmatism and promote meaningful understanding. Laboratory work is an integral part of most science courses and offers an environment different many ways from that of traditional classroom setting. A laboratory technique in mathematics teaching is a mathematical activity carried out by a student or group of students so as to make personal observations of processes, products or events. The Mathematics laboratory is a specially equipped room in a building where mathematics lessons or activities hold on a regular basis, or a corner of the regular classroom with tables and apparatuses, or a room containing a collection of teaching aids for students' manipulation (Odili 1990). According to Ezike and Obodo (1991), the mathematics laboratory is a room where things can be counted, ordered, recorded, packed, grouped, arranged, rearranged, measure, joined, partitioned, constructed, and experimented, among many other activities. It is also a remedial environment where the advantaged or disadvantaged, the poorest or the best gifted students may have active sensory experiences from which concepts emerge. It is based on the principle of learning by doing, learning by observation and proceeding from concrete to abstract. The mathematics laboratory is a place where anybody can experiment and explore patterns and ideas. The materials are meant to be used both by the students on their own and with their teachers to explore the world of mathematics, to discover, to learn and to develop an interest in mathematics. In



spite of the fact that mathematics laboratories are established in some of the schools, still the method of teaching in mathematics laboratory is at large teacher centered. Mathematics laboratory can act like a concomitant between teacher and students and provides an opportunity to understand and discover the beauty, important and relevance of mathematics as a discipline. Oluwatusi et al (2004) made mention of tools box in mathematics laboratory as a box which contains all or most of the laboratory materials or equipment in a mathematics laboratory. Generally, the tools box or boxes should contain both perishable (consumable) and unperishable (hard, meta/wood or plastic) materials for use in the laboratory. According to Ohuche (1989), he classify tool box materials under each class as listed below:

- Counting computation, Drawing and measuring devices and these include abacuses, coins, sticks, calculator, rulers, metres, drawing boards, triangles, T-square, chalkboard, cubes etc.
- Games and Puzzles: These include ludo, draughts, Ayo (Yoruba), Azigo (Igbo) number games, monopoly, money games, number line games, geobaord game etc.
- Models for Geometry: These includes models of plane figures (rectangle, square, kite etc) models of three dimensional figures (cubes, cone, cylinder, prisms)
- Tools: These include cutter (saw, blade, pen knife etc) turners, an overhead projector, hammers
- Reading Materials: These include textbook, reference books, newsletters, Journal etc.
- Supplies: Supplies include paper (duplicating, drawing, graph, empty packets, etc)

RESEARCH QUESTIONS

To guide this study, the following research questions were asked about some secondary schools in Ekiti State.

1. Do all secondary schools have mathematics laboratory?
2. Are mathematics laboratory fully equipped with necessary materials?
3. Are mathematics laboratory adequate for students' use?
4. Is there constant electricity for the operation of some equipment?
5. Are their professional mathematics teachers?
6. Do students like attending mathematics lab. Class?
7. What is the status and problems of Math. Lab.?

METHODOLOGY

A descriptive survey design was used for the study. The study was carried out on mathematics teachers from secondary schools in selected schools in Ekiti central senatorial district of Ekiti State. The sample from this senatorial district consisted of 120 teachers. The study was also carried out on secondary mathematics teachers from selected secondary schools in Ekiti North senatorial district. The sample for the senatorial was so mathematics teachers. The total samples was 200 secondary school mathematics teachers. The instrument used for data collection was item structured questionnaire on a 2 point types scale: Agree (A) and Disagree (D). The questionnaire was validated by expert. The



questionnaire were personally administered to respondents. The questionnaire were retrieved immediately after being filled. During data analysis, 20 questionnaire were discarded for inappropriate filling. Hence, one hundred and eighty (180) questionnaire were used for the purpose of the study.

RESULTS

The results of the study were obtained from the answers to the research questions as presented in the table below.

Table 1: Percentage of respondent's responses to items statement

S/N	Item	Agree	% Responses	Disagreed	% Responses	% Total
1	My school have mathematics laboratory	30	17	150	83	100
2	Mathematics lab. is fully equipped with necessary materials	20	11	160	89	100
3	Mathematics lab. is adequate for students use	15	8	165	92	100
4	There is constant electricity	5	3	175	97	100
5	Mathematics teacher in my school is professional	76	42	106	58	100
6	The students like attending mathematics	180	100	0	0	100

Research Question 1:

Do all secondary schools have mathematics laboratory?

The table above indicated percentage response of respondents to all items that constitute the status of mathematics laboratory in secondary schools in Ekiti State. Only 30 respondents agreed that all secondary schools in Ekiti State has mathematics laboratory, which indicated 17% while 150 respondents disagreed which indicated 83%

Research Question 2:

Are mathematics laboratory fully equipped with necessary materials? 160 of the respondents representing 89% disagreed that mathematics laboratory was fully equipped while 20 respondents constituting 11% agreed.

Research Question 3:

Are mathematics laboratory adequate for students use? 165 of the respondents representing 92% disagreed that math lab. Are adequate for students use while 15 of them constituting 8% agreed.

Research Question 4:

Is there constant electricity for the operation of some equipment? 175 of the respondent representing 97% disagreed that there is constant electricity for the operation of some equipment, while 5 of them constituting 3% agreed.



Research Question 5:

Are their professional mathematics teachers? 104 of the respondents representing 58% disagreed that mathematics teachers are professional while 76 of the constituting 42% agreed that they are professional.

Research Question 6:

Do students live attending mathematics lab. class? All the 180 respondents representing 100% agreed that students like attending mathematics lab. classes

Research Question 7:

What is the status and problems of math. lab? From the findings, it was discovered that not all the secondary schools in the selected senatorial district are have mathematics laboratory and all the students like attending mathematics laboratory.

DISCUSSION

The findings of the study show that willingness of the schools to provide mathematics laboratories and the student enthusiasm in attending mathematics laboratory classes should be encouraged by all stake holders in educational sectors. It was also identified from the study that mathematics laboratory is constrained by the following problems namely: Inadequate equipment, inadequate professional mathematics teachers and epileptic plover supply.

CONCLUSION AND RECOMMENDATION

From the research conducted, it was established that not all the secondary schools have mathematics laboratory. Government should provide all the secondary schools with enough mathematics laboratory equipment to enable students have more interest in mathematics. Schools should be provided with electricity and ensured that mathematics specialist are employed to teach effectively.

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