

**UTILIZATION OF MATHEMATICS INSTRUCTIONAL MATERIALS IN SENIOR
SECONDARY SCHOOLS IN AKWA IBOM STATE**

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ABSTRACT

The study investigated the utilization of Mathematical Instructional Materials in Senior Secondary Schools of Akwa Ibom State. A total of twenty two (22) schools were sampled using random sampling from the three Senatorial Districts of the state. Random sampling technique was used to select forty (40) Mathematics teachers and two hundred and sixty (260) students from the sampled schools. Three research questions were formulated and three hypotheses were tested. t-test statistics were used to determine the extent of utilization of mathematics instructional materials at 0.05. The research instrument was Mathematics Instructional Materials Rating Scale (MIMRS), with the reliability coefficient of 0.75. The result of the research shows that there is a deficiency in the utilization of Mathematics instructional materials. The result of the research also revealed that there is a significant relationship between utilization of Mathematics Instructional material in the teaching of mathematics in Akwa Ibom State. The recommendation from the study is that Mathematics teachers should endeavour to utilize the available instructional materials for effective teaching of mathematics in secondary schools. Also the government should provide enough instructional materials for mathematics education in secondary schools.

Introduction

Effective teaching and learning of any subject depends on the utilization of suitable instructional materials. This is mostly noticed in many secondary schools subjects such as Mathematics. Aboula (2003) stated that instructional materials are major part of the teaching and learning process and that the aims and objectives of education are achieved primarily on the effective utilization of instructional materials. National Teachers Institute (2002) defined instructional materials as those resources which promote the effectiveness of instruction. Also, Umar (2004) stated that instructional resources which promote the effectiveness of instruction. Also, Umar (2004) stated that instructional resources facilitate the teaching of the subject matter with increasing effectiveness at all levels of learning. In the same vein, Olubor (2008) stated that instructional materials are the resources that both teachers and students use to influence the effectiveness of teaching and learning process. In other words, for teaching of Mathematics to be effective and efficient, it is compulsory for teachers to make use of varieties of instructional materials. Adekuole (2011) emphasized that there was no adequate instructional material in teaching and learning process in Ogun State. Similarly, Liman

(2004) observed that in post primary school in Bida, 70% of students said mathematics teachers did not have instructional materials to utilize in the teaching and learning of mathematics. Thus, mass failure as reported in some research works could be traced to ineffective utilization of the available resources.

Statement of the Problem

The performance of students in mathematics in SSCE over the past few years in the study area has not been impressive. It is still worrisome the level of failure considering the importance of Mathematics to the development of the country. The country is in economic recession and needs mathematician that can stand up to the task of calculating certain economic indices that will help salvage the current economic situation of Nigeria.

The study of mathematics must be taken seriously by students and teachers in secondary schools as mathematics is needed in all facets of life. Consequently, the teaching of mathematics as a subject should be directed to its methods using adequate instructional materials to support teaching process (Silas 2016). It is from this premise that the researcher concludes that there is need to study the utilization of mathematics instructional materials for teaching and learning mathematics.

Purpose of the Study

The study sought to:

1. Find the extent of utilization of available Instructional materials.
2. Find the extent of which the mathematics instructional materials are utilized in private and public schools.
3. Determine the extent of which the mathematics instructional materials are utilized in urban and rural schools.

Research Questions

1. To what extent do teachers utilize mathematics instructional materials in senior secondary schools of the study area?
2. To what extent is the mathematics instructional materials utilized in private and public schools?
3. To what extent is the mathematics instructional materials utilized in urban and rural schools?

Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significant to guide the study.

H₀₁: There is no significant difference between the mean rating of teachers and student of the extent of utilization.

H₀₂: there is no significant difference between the mean rating of private and public schools on the extent of utilization.

H₀₃: there is no significant difference between the mean rating of urban and rural schools on the extent of utilization.

METHODOLOGY

The design of this research work is a descriptive survey that was conducted to find out the utilization of Mathematics Instructional Materials in Senior Secondary Schools in Akwa Ibom State. The researcher used combinations of stratified, simple random sampling as well as purposive sampling techniques to get the sample of respondents for the study. Stratified sample were used to select schools. The categories consist of boys and girls in Senior Secondary Two (SS II) class and Mathematics teacher of the selected schools in Akwa Ibom State. These helped reduced bias in the selection of schools. Simple random sampling technique using balloting method was used to select the 22 secondary schools in the sample area. The researcher selected 40 Mathematics Teachers and 260 students from the sampled schools. This enables both teachers and students' have equal opportunity to participate in the study.

Data Presentation and Results

Hypothesis One

H₀₁: There is no significant difference between the mean ratings of teachers and students on the extent of utilization of mathematics instructional materials.

Table 1: t-test Analysis on the extent of utilization of mathematics instructional materials

Respondents Remarks	N	\bar{X}	SD	t-cal	df	t-crit
Teachers	40	1.99	0.41	3.18	298	1.96
Students	260	1.78	0.17			

Hypothesis Two

H₀₂: There is no significant difference between the mean rating of Private and Public school on the extent of utilization.

Table 2 t-test Analysis of the difference between mean rating of private and public schools on the utilization of instructional materials

Respondents	N	\bar{X}	SD	t-cal	df	t-crit	Remarks
Private School Students	84	2.35	0.23	7.50	258	1.96	significant
Public School Students	176	2.17	0.17				

Hypothesis Three

H₀₃: There is no significant difference between the mean rating of urban and rural secondary schools in the utilization of mathematics instructional material in Akwa Ibom State.

Table 3 t-test Analysis of the difference between urban and rural schools on the utilization of instructional materials.

Respondents	N	\bar{X}	SD	t-cal	df	t-crit	Remarks
Urban School Students	140	2.35	0.29	6.80	258	1.96	significant
Rural School Students	120	2.18	0.21				

Discussion of Findings

- One salient finding was the fact that the extents of utilization of Instructional materials was low. It has also been observed that the condition of the mathematics instructional materials is poor and shabby.
- It was observed that the type of school influences the Utilization of instructional materials. This is because out of twenty two schools, mathematics instructional materials were available in five private schools and only two public schools.
- Also, the result shows that mathematics instructional materials were properly utilize in private schools than in public schools.
- Furthermore, results show that mathematical instructional materials were properly utilized in urban schools then in rural schools.

Conclusions

- Based on the study findings, it was observed that: the utilization of mathematics instructional materials influences students' achievement.
- The extent of teachers' utilization of mathematics instructional materials during lessons with the students influences academic performance of students. This is true because without availability of the required instructional materials for any topic, such topic cannot be taught successfully.

- Finally, it has also been discovered that utilization of mathematics instructional materials has significant influence on academic achievement of students. Actively participating in concrete example are retained longer than abstract symbols.
- Furthermore, for effective learning to take place, learners must have access to adequate instructional materials.

Recommendations

The following recommendations were made.

1. The teachers should to utilized the available instructional materials for effective teaching and learning of mathematics.
2. Government should ensure the adequate employment of dedicated and qualified mathematics teachers to teach the subject in all secondary schools.
3. Recommended textbooks of mathematics should be made available to all secondary schools.
4. Teachers should attend conferences, seminars and workshops on utilization of mathematics instructional materials.

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