FACTORS AFFECTING TEACHING -LEARNING PROCESS AND SENIOR SCHOOL STUDENTS' PERFORMANCE IN MATHEMATICS IN EKITI STATE, NIGERIA

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Abstract

The study investigated the factors affecting teaching-learning process and senior school students' performance in Mathematics in Ado local government area of Ekiti-State. It sought to identify the students' and teachers' difficulties in Mathematics readily inside and outside the classroom and to proffer possible solutions to make the teaching-Learning process of Mathematics easier and interesting to both the teachers and students in the school. The research design used was descriptive design of survey type. The population for the study consisted of all students and teachers from the four selected secondary schools in Ado Local Government. The sample size for the study was 200 students which were selected using multi-stage sampling procedure and four teachers which were selected using purposive sampling techniques across the Senior Secondary Schools in Ado Local Government area of Ekiti State. A self constructed questionnaire was used for Data collection. Data collected were analyzed using the chi-square analysis, mean, standard deviation and t-test. The results show that there are shortage of qualified teachers teaching the subject. It was revealed that the students were exposed to only the theoretical aspect of computer science instead of the practical aspect. Based on the findings of this study, it was recommended that government should make necessary provision for teaching resources. Teachers should have positive attitude towards the teaching of Mathematics. Secondary School Students should properly be exposed to the problem-solving activities in Mathematics.

Key Words: Teaching-Learning Process, Senior School Students, Performance, Mathematics Education.

Introduction

Education is a tool to prepare people for a worthwhile living and for the development of the society. In the world over, education is making a tremendous progress in the life of individuals. New ideals and computer technology are emerging. Oyebanji, (2003) defined 'Education as the aggregate of all processes by which a child or adult develops the activities, attitudes and other forms of behavior which are off positive value to the society in which he lives. Mathematics is a core subject in national development. It is very important in the lives of individual and the state at large. The outcome of Mathematics education tends to give all round knowledge to the child and improve computer skills of the Child. Nigeria has realized the importance of functional education for the good and services of mankind. This realization is evidenced in the National Policy on Education (FRN, 2013). Where it is emphasized that, the overall philosophy of education in Nigeria among others should be directed to building a united, strong and self reliant nation by educational activities being geared towards scientific and technological progress.

According to Okorie (2000) students lack interest in learning Mathematics simply because the tools or equipment use in teaching students are not provided and these includes; Lack of qualified teachers, Poor learning environment among others.

Efforts have been made to bring positive results from the teaching and learning of Mathematics education in Senior Secondary Schools since effective learning has not been achieved. Technological achievement and advancement aspired by many nations can be worthwhile if the efforts yielded positive result in Nigeria. It is therefore necessary to ascertain those factors that affect the performances of students in Senior Secondary Schools in Mathematics in Ado Local Government Area of Ekiti State.

For some years now, certain factors have been affecting the performances of computer science education students in junior secondary schools. Njoku (2019) highlighted that non provision of the necessary infrastructure to secondary school student have become a setback towards effective teaching and learning. Ukeje (2016) buttressed the argument by saying that schools are in short supply of classroom teaching resources and also practically everything connected to the teaching and learning and these among other things are contributing factors to student's poor performance in senior secondary school subjects.

Teaching- learning Process of Mathematics in Secondary Schools

In the teaching learning process of Mathematics, it is important to relate teacher's performances to students learning. The factors that affect teaching and student performances includes: teachers qualification measure of teachers attitudes, knowledge of the subject, knowledge of teaching methodology and characteristic of the environment of teaching such as the environment with a good network for browsing which aids e-learning.

Kwacha (2007) remarked that most schools lack computer teachers and experts that would support and manage the application of Mathematics in the teaching learning process. Oyebanji (2003) stated that the performance of student depends to a large extent on the competence of the teachers. Mathematics contributes to the objectives of self realization of an individual. Lack of sufficient practically oriented technical teachers who would arouse and sustain student interest is a serious setback in the progress of Mathematics as a field of study.

Purpose of the Study

The purposes of the study were to:

1. Find out the extent to which teachers' attitude affects the teaching-learning process in Mathematics among senior secondary school students in Ado Local Government Area.
2. Find out the difficulties the students faces in implementing the teaching-learning process of Mathematics.
3. Ascertain the difficulties that the teacher faces in the teaching-learning process of Mathematics.

Research Questions

The following research questions were raised for this study

1. To what extent does teacher's attitude affect the teaching-learning process in Mathematics?
2. What are the students' related difficulties affecting learning of Mathematics in senior Secondary Schools?

3. What are the teachers' related difficulties affecting teaching-learning of Mathematics in senior secondary schools?

Research Hypotheses

1. Shortage of teaching resources will not significantly influence students' academic performance in Mathematics.
2. Teacher's attitude towards the teaching of Mathematics will not significantly influence the academic performance of students.

Methodology

Research Design

This study employed a descriptive research design of the survey type of the secondary school teachers and the students on the factors affecting the teaching-learning process on senior school student's performance in Mathematics in Ekiti state.

Population

The population for this study consisted of all secondary schools in Ado- Ekiti. The whole population was however represented by students and teachers from all secondary schools in Ekiti state.

Sample and Sampling Procedure

The sample consisted of 204 respondents from the selected secondary school. The schools were selected using simple random sampling, the students' were selected using multistage random sampling procedure while the teachers were selected using purposive sampling techniques.

Multistage sampling is the form of sampling which involves dividing the population into groups or clusters. Then, one or more clusters are chosen randomly and everyone within the chosen cluster is sampled.

Research Instrument

Self-constructing questionnaire was used to gather data on the factors affecting teaching-learning process and senior school students' performance in computer science along with the teachers and students difficulties they are facing respectively.

Validity of the Instrument

The questionnaire was validated using face and content validity. To achieve this, an expert from mathematics education was also provided with a copy for assessment and scrutiny by taking necessary corrections.

Administration of Instrument

The question was administered directly by the researcher on both the teachers and students with the cooperation of the principals of each of the schools concerned. The performance of the students in their last examination was also taken through the schools registrars. In the process of administration, verbal explanation was given to the respondents and they were also assured of confidentiality of all the information supplied. The questionnaire was successfully administered and were duly completed and returned to the researcher.

Data Analysis

The data generated from the instrument were analyzed using descriptive and inferential statistics. Mean and standard deviation was used to answer the research questions and analysis of co-variance (ANCOVA) was used to test the entire hypothesis at 0.05 level of significance.

Results

Research Question 1: To what extent does Teachers' Attitude Affect the Teaching-Learning Process of Mathematics?

Table 1: Descriptive Analysis Showing the Extent at which Teacher's Attitude Affect the Teaching-Learning Process of Mathematics.

S/N	Items	SA		A		U	
		Freq	%	Freq	Freq	%	Freq
1	The topic I teach are relevant to Mathematics	1	25%	3	75%		
2	Teaching Mathematics is simple and interesting	2	50%	2	50%		
3	All the learners have the ability to learn	1	25%	3	75%		
4	I have adequate mastery and knowledge of the content	2	50%	2	50%		
5	Refresher course helps the teachers improve their skills or teaching Mathematics			3	75%	1	25%
6	Learners are self driven and willing to learn			4	100%		
7	I am confident in teaching Mathematics	3	75	1	25		

Table 1 shows that 3(75%) of the total respondents agreed that the topic they teach are relevant to Mathematics while 1(25%) respondents strongly agreed. In item 2, 2(50%) of the total respondents strongly agreed that Mathematics is simple and interesting to teach while 50% agrees with the option. Item 3 shows that 1(25%) of the total respondents strongly agreed that all the learners have the ability to learn Mathematics while 3(75%) agrees. Item 4 shows that 2(50%) of the total respondents strongly agreed and at the same time 2(50%) agreed that they have adequate mastery and knowledge of the content. Item 5 shows that 3(75%) of the total respondents agreed that the refresher course helps the teachers improve their skills or teaching Mathematics while 1(25%) was undecided. Item 6 shows that all the respondents 4(100%) agreed that learners are self driven and willing to learn. Lastly, item 7 shows that 3(75%) of the total respondents strongly agreed that they are confident in teaching Mathematics while 1(25%) agreed.

Research Question 2: What are Students-Related Difficulties Affecting Learning of Mathematics in Senior Secondary Schools?

Table 2: Students Related Difficulties Affecting Learning of Mathematics in Senior Secondary Schools

S/N	Items	Yes		No	
		Freq	%	Freq	%
1	Are teaching-learning materials adequate in your school	84	42	116	58
2	Do you find the learning materials available relevant	80	40	120	60
3	Do you have a standard Mathematics laboratory	100	50	100	50
4	Do you always have practical classes in your school	92	46	108	54

Table 2 shows that 84(42%) of the total respondents agreed that teaching-learning materials are adequate in their school while 116(58%) disagreed. Item 2 shows that 80(40%) of the total respondents agreed that they find the learning materials available relevant while 120(60%) disagreed. In item 3, 100(50%) of the total respondents agreed that they have a standard Mathematics laboratory while 100(50%) disagreed. Item 4 shows that 92(46%) of the total respondents agreed that they always have practical classes in their school while 108(54%) disagreed.

Research Question 3: What are the Teachers Related Difficulties Affecting Teaching-Learning of Mathematics in Senior Secondary Schools?

Table 3: Teachers Related Difficulties Affecting Teaching-Learning of Mathematics in Senior Secondary Schools

S/N	Items	Yes		No	
		Freq	%	Freq	%
1	Shortage of teaching resources	3	75	1	25
2	Poor computer laboratory	3	75	1	25
3	Poor conducive aesthetic environment	2	50	2	50
4	Shortage of power supply	4	100	-	-
5	Poor funding	3	75	1	25

Table 3 shows that 3(75%) of the total respondents agreed that there is shortage of teaching resources while 1(25%). In item 2, 3(75%) of the total respondents agreed that there is poor Mathematics laboratory while 1(25%) disagreed. In item 3, 2(50%) of the total respondents agreed that they experience poor conducive aesthetic environment while 2(50) disagreed. Item 4 shows that 4(100%) of the total respondents agreed that there is shortage power supply. In item 5, majority of respondents (3(75%) agreed that they is poor funding while 1(25%) disagreed.

Hypotheses Testing

Hypothesis 1: Shortage of teaching resources will not significantly influence students academic performance in mathematics.

Table 5: Chi-Square showing the Shortage of Teaching Resources on the Academic Performance of Students in Mathematics.

Chi-Square	79.600[a]
Df	3
P-value.	.000
Remark	Significant

P<0.05

Table 5 showed that $P_{\text{-value}}$ (0.000) is lesser that the level of significance (0.05). The null hypothesis is rejected. This implies that shortage of teaching resources will significantly affect student's academic performance in Mathematics.

Hypothesis 2: Teachers' attitude towards the teaching of mathematics will not significantly influence the academic performance of students

Table 6: t-test Analysis of Teachers' Attitude Towards the Teaching of Mathematics on the Academic Performance of Student.

Relationship	N	Mean	SD	df	t-cal	P-value	Remark
Teachers Attitude	200	3.441	.738	199	20.034	0.000	Significant
Students Performance	200	1.543	.475				

P>0.05

Table 6 shows teachers attitude towards teaching of Mathematics on the academic performance of students in Ekiti State. The result showed that t=20.034, p=.000<0.05 at 0.05 level of significance. The null hypothesis is rejected. This implies that teachers attitude towards the teaching of Mathematics will significantly affect the student's academic performance. Therefore, teacher's attitude will significantly influence the students' academic performance in Ekiti State.

Discussion of the Findings

The study revealed that majority of respondents agreed that teachers attitude affect the teaching-learning process of Mathematics. Teacher's attitude may be positive or negative as Eugene and John (2014). asserted that teachers' attitude before the treatment could be negative but after the treatment become bold and confidence to teach their students.

The study further revealed that shortage of teaching resources, poor adequate computer laboratory, poor conducive environment, shortage of power supply and poor funding are the teachers related difficulties affecting teaching-learning of Mathematics in senior secondary schools in Ekiti State.

The study revealed that shortage of teaching resources will significantly affect student's academic performance in Mathematics. According to Kalinga (2008) inadequacy of books, references and other academic resources materials are the major problems which accelerate the poor performance in many secondary schools.

Conclusion

The study concludes that there are some basic strategies that could be adopted in order to improve the teaching of Mathematics in secondary schools. The study is of the view that Mathematics should provide sound basis for further training in Mathematics at the tertiary level of education thus should be relied upon to enable students acquire the basic skills and knowledge needed to either secure a job and earn a living or to pursue further studies in the area Mathematics and information science.

Findings from this study show that factors like shortage of teaching resources, poor Mathematics laboratory, poor conducive environment, shortage of power supply and poor funding are affecting teaching-learning of Mathematics in Ekiti State. The finding of the study further revealed that shortage of teaching resources will significantly affect student's academic performance. The finding of the study further revealed that

teachers' attitude towards the teaching of Mathematics will significantly affect student's academic performance.

Recommendations

Based on the findings of this study, the under listed recommendations were made:

1. Government should make necessary provision for teaching resources. Provision of infrastructures, adequate funding of education, and the rewards to the outstanding teachers should be done and organize by the government officials.
2. Teachers should be endeavor to attend workshop and seminar. On the job training for teachers, adequate orientation, induction and regular seminar and conferences relevant to Mathematics fields should be made accessible to the teachers to update their knowledge.
3. Students should have positive attitude towards the learning of Mathematics. Teachers need to have the time to develop ideas, innovations and more friendly in order to create positive mind for the students to develop interest in the subject.
4. Teachers should have positive attitude towards the teaching of Mathematics. There is the need for professional standards in which the teachers can demonstrate their commitment to the teaching-learning process of Mathematics through their professional development. A professional credential system that acknowledges creativity, enthusiasm and commitment of teachers.
5. Government should provide incentives to the teachers. There is the need for the provision of incentives and well equipped Mathematics laboratories. This would go a long way to stimulating learning and making interactions between teachers and students pleasurable and resourceful.
6. Teacher should be encouraged to use students centered method. Students should be gainfully engaged with worthwhile classroom assignment, standard practical's work and encourage group reading.

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