ANALYSIS OF BIOLOGY STUDENTS' MATHEMATICS PERFORMANCE IN BASIC GENERAL MATHEMATICS V IN SHEHU SHAGARI COLLEGE OF EDUCATION, SOKOTO, FROM 2011 T0 2018 ACADEMIC SESSIONS

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Abstract

This study Analyzed Biology Students' Mathematics Performance In Basic General Mathematics V In Shehu Shagari College Of Education, Sokoto, From 2011 T0 2018 Academic Sessions. The design was Ex-po factor design. All science NCE students from 2011 to 2018 formed the population of the study. This study was guided by one objective. The analysis indicated that for five years that is in 2011, 2012, 2014, 2016, and 2017; NCE science students performed wonderfully then the 2013, 2015 and 2018 academic sessions. Based on the findings of the study the researcher recommends that 1. Government should organised workshops and seminars on the implications of contents coverage. 2. Government should provide conducive learning environment that could accommodate mathematical laboratories activities. 3. Proper monitoring and supervision and constant monitoring should be put in place to insure proper deliberation.

Introduction

The knowledge of mathematics in our day to day's activities cannot be over emphasize. This is why Musa and Eya (2014), stated that, "it is undisputable that education is a key to economic growth of a country as well as in science and technology. Therefore, science and technology education are very important and crucial factors for the development of any nation. There is no doubt that what distinguishes the developed nations from the developing nations of the world is the degree of science and technology prevalent in these nations and mathematics is the fulcrum on which science and technology rotate. Different researchers in the field of education have acknowledged the place of mathematics in Scientific and technological developments"

According to Isah (2021) Mathematics may be part and parcel of human development and integral to attempts at understanding the world and ourselves. Researchers know that mathematical knowledge is fundamental, but alas, it is poorly taught in elementary schools and ultimately mathematical performance remains down to mark leading towards lower ability of individuals in accordance with their actual abilities (DeCaro, Rotar, Kendra, 2010). Students, particularly girls away from mathematics. This difficulty reaches at its peak when it is taught by un-qualified, non-professional and absence of qualify Mathematics female teachers in the teaching and learning of Mathematics (Jameel, and Ali 2016; & Isah 2021). Attractive and impressive are not used to teach mathematics and ultimately its results are shown in the failure of students. Several factors such as learner's interest, lack of qualified teachers, improper curricula and school environment are responsible for the poor achievement in the mathematics by the students. This is buttress with the assertion of Isah (2021) that some of the factors attributed to poor performance of students in mathematics in Sokoto State include: Poor method of teaching, lack of interest, poor motivation, un qualify teachers among others. According to Grouws and Cebulla (2000) Teaching mathematics is a complex matter while lack of student's interest on the other hand probably overwhelms the abilities of adults and ultimately causes as one of the most important factors for poor performance in mathematics.

By developing and raising level of student's interest and involvement means how much time, energy and effort they devote towards achieving high goals in mathematics as learning process is fast and instinctual on one

hand while on the other hand the belief that supports the idea based on working without strategy and planning for the sake of improving mathematical abstract and logical fundamental concepts works efficiently in most situations (Aikins, Duel and Hutter, 2005).

Parents and government both agree that the investment on education especially on adults is not giving desired output due to their lacks in understanding mathematical terms and its concepts along with deficiencies in representing and retrieving fundamental numerical facts and figures that ultimately hinder in the way of gaining improvement in mathematics by the perspective of adult students and acquiring high standards in mathematics by the perspective teachers and its country as well (Geary, 2011)

Low performance in mathematics may be dealt with special instructions and programs designed to meet the special or additional needs of individual's for developing essential mathematical skills (Chiesa and Robertson, 2010).Teachers of mathematics are also not satisfied with the performance, retention and attitude of students in the mathematics, particularly here in Sokoto State, due to the poor results students produced in the internal and external examinations. Low achievement in mathematics is a great matter of disappointment (Ramírez, 2006). Poor mathematical academic performance is also seen in secondary school students in. Failure in mathematics at elementary and secondary levels is really frustrating for all. Most of the students at all levels find mathematics as a difficult and boring subject and develop feelings of inferiority, hesitation and complex (Jameel, and Ali 2016).

They have outright fear when they confront mathematics. Such a situation directly hinders in the way of their learning progress as they actually do not actually learn the stuff meant of mathematics while motivational studying environment and level of interest play vital role in achieving high goals especially in mathematics. Student's learning environment and the way of stimulating them in accordance with their interests and tendencies will automatically lead them towards their performance based destination that will surely reduce the level of frustration amongst all (Aunola, Leskinen and Nurmi, 2016). The main reason for failure in mathematics is directly related to the development of curriculum and the ways teachers teach mathematics in the classes. Different teaching approaches, techniques, methods and ways can influence the outcomes in mathematics. The students who study through boarding schools perform better in mathematics than those students who study non boarding schools in spite of having adequate facilities with enough resources (Nyatanga and Ndudzo, 2015).

Study of Sa'ad and Adamu (2014) states that teachers who teach mathematics have no or little training in mathematics and the school managements either lack funding or do not spend their budgets wisely considering mathematical trainings for their mathematical teachers a matter of utmost importance and ultimately mathematical teachers neither come to know the underlying meanings behind mathematical terms nor teach them when their students confront with the mathematics. According to Jameel, and Ali, (2016) Mathematics is not taught by giving proper understanding of reasoning and logics to the students and it is because of shortage of mathematical equipment in the class rooms.

No wonder, Sa'ad, Adamu and (2014) assert that most of the mathematics teachers do not make the teaching of mathematics practical and exciting as they do not have competencies to teach mathematics dynamically which leads towards negative attitudes amongst pupils implying improper guidance by the teachers as well. This agrees with Isah (2021) who states that students in ability to have trained and competent mathematics teacher could lead to negative attitude toward learning the subject.

Parent's desire of seeing their children with prosper understanding and application of mathematical concepts does not come true because they directly put all the responsibility of teaching mathematics on the shoulders of teachers and they themselves do not make much of their efforts to develop and draw their kid's interests towards learning of mathematics either by using analogies or by magical activities thus kids automatically find mathematics as a daunting subject. This may significantly related to mathematical caricature from the parents and the society in general (Isah, 2021).

Study of Tshabalala and Ncube (2013) showed that Lack of fundamental mathematical conceptual based play materials, lack of basic guidelines, typical teaching methodologies, poor mathematical background sand excessive use of advanced computation systems lead student's down to mark achievement in mathematics. This is agrees with the study of Isah (2021) the results of the study indicated that there is still poor performance of students in mathematics in Sokoto State. This is some of the reasons enticed the researcher to investigate the poor performance of students in mathematics in Sokoto State.

Statement of Problems

Despite the relative importance of Mathematics in Science and information based courses, as well as in Medicine and Social Sciences, students' [attitude, retention and] performance in Mathematics in both internal and

external examinations have remained consistently poor (Aburime, 2007; Isah, 2015; and Idowu, 2018). Most students cannot comprehend mathematics problems couple with students' negative attitude and low retention ability in learning the subject (Idowu, 2018). These cause tremendous consequences on the students understanding and performance. Thus, it has become necessary to search for a teaching method which is proficient of improving students' attitude level, retention and academic performance in mathematics.

Consequently, some researchers have tested the impact of STAD and Inquiry methods on students' attitude, retention and performance in mathematics in the different schools in Nigeria, specifically in Sokoto state, the researcher have not yet come across any study that have been done in this area. Hence, the researcher carried out this study to see whether there is poor performance of students in mathematics in Sokoto State. Percentages of students' performance for ten years have been calculated in this study, and the results indicated that yes there is still poor performance of students in mathematics in Sokoto State.

Hence there is the need to develop a strategy or approach that might enhance students' active participation, positive attitude, high retention ability and academic performance in mathematics at JSS levels. This is the problem that prompted the researcher to conduct this study

Objective of the study

The study sought to investigate the Performance of NCE III Biology Students of Shehu Shagari College of Education in Basic General Mathematics V from 2011 to 2018 academic sessions.

Research Questions

What is the Biology students' performance in Basic General Mathematics V in Shehu Shagari College of Education?

H_0: Biology Students Performance in Basic General Mathematics V in Shehu Shagari College of Education from 2011 to 2018 is not significant

Methodology of the study

The methodology of this study is ex-post facto research design. The population of this study includes all NCE III Science students of Shehu Shagari College of Education Sokoto in the year 2011 to 2018 academic sessions with four thousand five hundred and ten students 4510. The following Table showed the population of the students in their respective educational zones during the period under study.

Sample and sampling procedure, all NCE III science students in the years 2011-2018 academic sessions were considered in this study. The researcher used all NCE science combinations from 2011/2018 academic session. Procedure for data collection; the data was collected through Exams unit of School of General Studies SSCOE, Sokoto. All the moderated and compiled results for the NCE III science students from 2011 to 2018 were collected and categorised in to A-C as credits, and D-F as pass. Data analysis, the data was analysed using descriptive statistics of frequency and percentage.

Results

Table 1.1 Mathematics Performance of JSS III Students in Sokoto State 2007-2017

Summary of Sokoto State Junior Secondary School III Basic Education Certificate Examination (BECE) in Mathematics from 2007-2017

Years	Total	Credit Percentage (A1-C6)	Percentage with pass and bellow (%) (D7-F9)
2011	408	56.3	40.8
2012	904	50.8	30.5
2013	264	34.1	65.9

2014	308	62.7	37.3
2015	496	28.4	71.6
2016	914	62.8	37.2
2017	602	60.3	39.7
2018	542	33.4	66.6

Source: School of General Studies, Shehu Shagari College of Education, Sokoto (2022)

Based on the analysis on the Table 1.1, the researcher discovered that in 2011 out of 480 students, 56.3% scored credits and 40.8% students scored pass. In the 2012 results the researcher found that out of 904 students, 50.8% scored credits while 30.5% scored pass. In the year 2013, the researcher discovered that out of 264 students 34.1% scored credits and 65.9% scored pass. In the year 2014, out of 308 students 62.7% scored credits and 37.3% scored pass. In the year 2015 out of 496 students, 28.4% students scored credits while 71.6% students scored pass. In the year 2016, out of 914 students, 62.8% students got credits and 37.2% students scored pass. In the year 2017, out of 602 students, 60.3% students got credits while 39.7% scored pass. In the year 2018, out of 542 students, 33.4% students got credits and 66.6% scored pass respectively.

Discussion of Results

Based on the analysis on the Table 1.1, the result shows that in 2011 out of 480 students, 56.3% scored credits and 40.8% students scored pass, this shows that students with credit outnumbered the students with pass. This showed in the year 2007 there was no poor performance of students in Mathematics in among science students in SSCOE Sokoto; this is agrees with the findings of Aburime (2007). In the 2012 results the researcher found that out of 904 students, 50.8% scored credits while 30.5% scored pass. The results showed that students with credit outnumbered students with pass this results support the earlier findings of Isah (2022)

In the year 2013, the researcher discovered that out of 264 students 34.1% scored credits and 65.9% scored pass. This showed that students with pass were more than those with credits in mathematics, hence there is poor performance of students in mathematics in Sokoto State, this agrees with the results of Jameel, and Ali (2016). In the year 2014, out of 308 students 62.7% scored credits and 37.3% scored pass, this results agrees with the results of Isah, (2015), who found that there was good performance in Sokoto State BECE in 2012 academic session.

In the year 2012, out of 7957 students, 34.372 students scored credits while 53. 312 students scored pass. This showed that students with credits were less than students with pass, this also indicated that in the year 2012 there was poor performance of students in mathematics in Sokoto State, this is agreed with the findings of Jameel, and Ali (2016). In the year 2013, out of 39 118 students, 23.301 students got credits and 76.699 students scored pass, this study buttressed the study of Isah (2015). In the year 2014, out of 22 335 students, 48.368 students got credits while 52.160 scored pass. In the year 2015 out of 496 students, 28.4% students scored credits while 71.6% students scored pass. This shows that in the 2015 there was poor performance of mathematics among science NCE students in Shehu Shagari College of Education Sokoto. In the year 2016, out of 914 students, 62.8% students got credits and 37.3% got pass. In the year 2017, out of 602 students, 60.8 got credits and 39.7 got pass; In the year 2018, out of 542 students, 33.4% students got credits and 66.6% scored pass respectively. These studies concretised the earlier study of Jameel, and Ali (2016) and Isah (2021).

Summary of the Study

The Study Examines The Analysis Of Biology Students' Mathematics Performance In Basic General Mathematics V In Shehu Shagari College Of Education, Sokoto, From 2011 T0 2018 Academic Sessions. The analysis indicated that for five years that in 2011, 2012, 2014, 2016, and 2017; NCE science students performed wonderfully then the 2013, 2015 and 2018 academic sessions.

Conclusion

The findings of this study indicated that in the following years, 2013, 2015, and 2018 there were poor performance of NCE science students in mathematics; and in the years 2014, 2015, 2016, and 2017 students' performance were improved compeer to the previous years. During the process of this study, the researcher noticed

that some of the problems attributed to the poor performance of students in mathematics include students in ability to answer more questions in the examinations, and the researcher relent this to the teachers in ability to cover the course contents completely, there by preclude students to have more opportunities to choose and answer different questions in the examinations.

Recommendations

Based on the findings of this study, the following points are recommended:

1. Government should organised workshops and seminars on the implications of contents coverage.
2. Government should provide conducive learning environment that could accommodate mathematical laboratories activities.
3. Proper monitoring and supervision and constant monitoring should be put in place to insure proper deliberation.

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