Survey of Secondary School Students Views in the Teaching and Learning of Mathematics in Enhancing their Entrepreneurship Opportunity in Nigeria

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Abstract: This study aimed at surveying the secondary school students' views on teaching and learning of mathematics for enhancing their entrepreneurship opportunity in Nigeria. The study were carried out in Zamfara state covering three Senetotiral zones of the state. The target population is all the secondary schools in state. A sample of one thousand (1000) students which is made up of six hundred (600) male and four hundred (400) female students were randomly selected schools from the three senatorial district. Four hundred (400) samples were from the central zone while three hundred (300) samples from each north west and north south zones respectively. The design for this study is survey where three (3) research questions and three (3) hypotheses were raised to guide the study. The instruments used for the data collection is structured questionnaire. The three research questions were analysed using mean and standard deviation to answer the questions and two hypotheses were tested using t- test statistic. The results showed that male students views was better than their female counterparts. There is also significant difference between the mean of male studentsviews with female studentsin enhancing entrepreneurship opportunity.

Keywords: Students, Teaching, Math's learning, Math's, Secondary school, Entrepreneurship

Introduction

The role of mathematics plays in commercial, scientific and technological institutions for proper development of any nation and the overall acceptance of mathematics method as central to the solution of all kind of problem has highly enhanced the importance of mathematics (Galadima, 2002 in Suleiman, 2010). Mathematics consists of activities such as formation of concepts, abstraction, generalization, theorem building and problem solving which is basic to mathematics activities. Thus learning to solve problems is a primary goal of mathematics teaching in schools and an integral part of mathematics (Fakuade, 1980 in Suleiman 2010).

Okigbo and Okeke (2011) posited that, interest is an important variable in learning because when one becomes interested in an activity, one is likely to be more deeply involved in that activity. Other researchers like Prendergast (2011) and Lazarides and Ittel (2012), asserted that interest has a powerful influence on academic performance and they demonstrated the functions of interest in fostering, remembering and understanding material, and stimulating students' positive behaviour towards the topics.

Akonbowa (2005) opined that entrepreneurship is the creation of new organization and that it is the process of creating new ideas through devotion of time and efforts. Therefore, promoting entrepreneurship is an act of encouraging economic growth of the society. The process of new ideas and innovations involves much critical thinking which is one of the features or characteristics of mathematical ideology. Suleiman and Abdullahi (2015) states that a good entrepreneur should be characterized by the following; quality initiative, leadership, organizing, decisiveness, perseverance, industriousness, curiosity, self-confidence, willingness to take risks and ability to learn from mistakes made by one self or others. All of these qualities help the entrepreneur to think, analyse, solve problems and take action or decision (Suleiman and Abdullahi, 2015).

Mathematics has always been perceived as the most difficult subject in the school curriculum. Students continue to record high rate of failure in mathematics (Ajani and Papoola, 2013). A number of scholars outlined most of the factors that hinder the proper perception of mathematics content and also which leads to the constant failure of mathematics in both internal and external examination [Ebele and Abigail (2008); Ajani and Papoola (2013)]. The factors include the following:
- Dissatisfaction with the syllabus
- Experience and disposition on the part of the students
- Lack of appropriate mathematics textbook
- Lack of mathematics laboratory and its facilities
- Mathematics teachers' attitude to work
- Teachers-students relationship
- Mathematics anxiety in teaching and learning mathematics
- Students' previous experience knowledge of instruction

Kajuru and Papoola (2010) stated that effective teaching method and use of teaching aids allows students to enjoy services of ownership and direct involvement in judging the quality of students' performance in mathematics. Olayede, Adebowale and Ojo (2013) reported that teaching method of mathematics teacher is based on the students' performance in the subject. Ebele and Abigail (2008) indicated that learners' approach assist in reducing abstractedness of the subject and facilitate understanding and consequently lead to improvement in attitude and academic performance.

In Nigeria, entrepreneurship education is a gateway for self-reliant and economic development. Entrepreneurship is often defined as the process of innovating ideas to establish a living different from being employed. Othman, Othman and Ismail (2012) identified entrepreneurship as a potential catalyst for expanding economic growth and to maintain competitiveness in facing global challenges. Umar (2010) also defined entrepreneurship education as the education that provides skills acquisition in the process of providing individuals with concepts and skills to recognize opportunities that others have over looked and to have the insight, self-esteem and knowledge to act where others hesitated.

The need to teach entrepreneurship in mathematics is imperative as to which entrepreneurship in mathematics education will help equip the students in other to meet the socio-economic requirement in the world of work. It helps in orienting the students on how to be self-reliant after their stay in their respective institutions (i.e. after graduation) as they can explore the business and economic opportunities that surrounds them in order to be self-employed and also help create jobs for others.

Statement of the Problem

Students often express cold feet in understanding mathematical concepts being taught by their teachers which leads to the massive failure in both internal and external examinations. Secondary school mathematics education in Nigeria needs frequent improvement to meet the aspirations of individual and Nigeria as a nation. It was recently observed that poor performance in mathematics external examinations is on the increase (Akinsola, 2013; Ajani and Papoola, 2013). This may be due to lack of the knowledge of relevance of the subject to human day to day living especially on entrepreneur espiretion individual and the nation at large.

Purpose of the Study

Therefore the study investigated the secondary school students' views on the teaching and learning of mathematics as a pivot of enhancing entrepreneurship opportunity in Nigeria. Also the study highlighted ways in which students can learn mathematics in a serene and joyous environment.

Research Questions

The following are questions raised in line with the research topic.
1. What is the views of students in the ways mathematics is being taught at secondary school level?
2. What is the view of students on their learning of mathematics at secondary school level?
3. Do the students reliase that knowledge of mathematics can enhance their entrepreneur opportunity?

Research Hypothesis

The following hypothesis are drawn to guide the research
1. There is no significant difference in the view of male and female students on the ways mathematics is being taught at secondary school level.
2. There is no significant difference in the view of male and female students on their learning of mathematics at secondary school level.
3. There is no significant difference in the opinion of male and female students on the use of mathematics in enhancing entrepreneur opportunity.

Research Methodology

The study was a descriptive survey type. The researchers designed questionnaire which was used to collect data from the three senatorial districts. The target population comprised of six (6) randomly selected secondary schools that comprises two (2) schools from each senatorial district with a sample of 1000 students that were systematically sampled from the selected schools. The sample comprised of six hundred (600) male and four hundred (400) female students.

Research Instrument

In this research, the designed questionnaire tagged "Questionnaire on Students' views towards Mathematics in Enhancing their Entrepreneurship Opportunity in Nigeria" was used to gather the data from the students that were randomly selected from the three senatorial districts. The questionnaire comprises of twelve (12) items that sought the students' views/perceptions/interests towards the teaching and learning of mathematics as a pivot/tool in enhancing entrepreneurship opportunity in Nigeria.

Validation of the Instrument

The instrument was validated by experts in the field of Mathematics Education in Department of Science Education, Faculty of Education, Federal University Gusau to ensure that the appropriateness or otherwise of the questions in the instrument for the purpose of the research. In this way, the instrument was validated to ensure that it measures what is supposed to measure. The reliability value for the instrument is 7.21 using test re-test method.

Method of Data Collection

One thousand (1000) copies of questionnaire were administeredto the students in the three senatorial districts. The questionnaire was systematically distributed to four hundred (400) samples from the central zone while three hundred (300) samples each from north west and north south zones respectively. The questionnaire was distributed by the researchers and collected the answered questionnaire immediately.

Method of Data Analysis

The three research questions generated were answered using descriptive statistics. The researchers administered 1000 copies of the questionnaire forms to the students whom participated in the research study. All administered questionnaire forms were later obtained and used for analysis.

Research Question 1

What is the views of students in the ways maths is being taught at secondary school level?

Table 1.Mean and Standard Deviation Responses of Students views on Teaching Mathematics

Gender	N	X	SD
Male	600	16,50	3.27
Female	400	15.90	2.91

From Table 1, it is clearly observed that Male students had mean score of 16.50 while the female students had a mean score of 15.90 This shows that male students views teaching of mathematics higher than the female students.

Research Hypothesis 1

1. There is no significant difference in the view of male and female students on the ways mathematics is being taught at secondary school level.

Table 2.T-test Analysis on the students view of Mathematics Teaching at Secondary School Level

Gender	N	Df	T-cal	T-critical	Remark
Male	600				
		998	1.28	1.96	Significant
Female	400				

Table 2 shows that the t-cal is 1.28 which lower than t-critical 1.96. consequently, the null hypothesis is rejected. There is significant difference in the view of male and female students on the ways mathematics is being taught at secondary school level.

Research Question 2

What is the view of students on their learning of mathematics at secondary school level?

Table 3.Mean and Standard Deviation Responses of Students on their learning of Mathematics

Gender	N	X	SD
Male	600	15.65	3.32
Female	400	14.45	2.77

From Table 3, it is clearly observed that Male students had mean score of 15.65 while the female students had a mean score of 14.45 This shows that male students view their learning of mathematics higher than the female students.

Research Hypothesis 2

There is no significant difference in the view of male and female students on their learning of mathematics at secondary school level

Table 4.T-test Analysis on the students view of Learning of Mathematics at Secondary School Level

Gender	N	Df	T-cal	T-critical	Remark
Male	600				
		998	1.58	1.96	Significant
Female	400				

Table 4 shows that the t-cal is 1.58 which lower than t-critical 1.96. consequently, the null hypothesis is rejected. There is significant difference in the view of male and female students on the ways mathematics is being taught at secondary school level.

Research Question 3

Do the students release that knowledge of mathematics can enhance their entrepreneur
There is no significant difference in the opinion of male and female students on the use of mathematics in enhancing entrepreneur opportunity.

Table 5.Mean and Standard Deviation Responses of Students on their learning of Mathematics

Gender	N	X	SD
Male	600	17.66	13.32
Female	400	16.56	12.77

From Table 5, it is clearly observed that Male students had mean score of 17.66 while the female students had a mean score of 16.56 This shows that male students view mathematics usagein enhancing entrepreneur higher than the female studentsperformed better than the female students.

Research Hypothesis 3

There is no significant difference in the opinion of male and female students on the use of mathematics in enhancing entrepreneur opportunity.

Table 6.T-test Analysis on the view of Male and Female Students on the use of Mathematics in enhancing entrepreneur opportunity.

Gender	N	Df	T-cal	T-critical	Remark
Male	600				
		998	1.85	1.96	Significant
Female	400				

Table 6 shows that the t-cal is 1.85 which lower than t-critical 1.96. consequently, the null hypothesis is rejected. There is significant difference in the view of male and female students on the ways mathematics is being taught at secondary school level.

Discusion of the Findings

The results presented in table 1 and 3 clearly established the fact that Mathematics teaching at Secondary level was a significant factor in engancing students entrepreneurship at Secondary level. The table 1 shows the mean male students performed better than their counter part with 16.50 was higher than female students with 15.90, so also, table 3 indicates that the mean of male students with 15.65 was higher than those of the female students with 14.45.

To further address the problem, three null hypotheses was formulated and tested at 1.96 level of significant. Therefore, the result in table 2 shows that, with respect to the mathematics teaching at secondary school level an t-cal 1.28 was obtained, with an associated probability value of 1.96. since the t-cal was less than 1.96 level of significance probability, the null hypothesis was rejected. Thus, there was a significant difference between the male and female students.

Summary of Findings

The summary of findings of the study includes:
1. Male students pruduce higher mean than the female students in their views on mathematics teaching and learning.
2. There is significant difference between the mean of male students and female students in enhance ing entrepreneur opportunity.

Conclusion

The study aimed at determining the secondary school students views in the teaching and learning mathematics in enchancing their entrepreneurship opportunity in Nigeria. The results obtained from the data analysis in the study, indicate that, male students views are higher than their female counter part in enhancing their entrepreneurship. teaching and learning

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