DEVELOPING ENTREPRENEURIAL SKILLS AMONG SECONDARY SCHOOL STUDENTS THROUGH EFFECTIVE GEOMETRY LEARNING IN OBUDU LOCAL GOVERNMENT AREA OF CROSS RIVER STATE

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Abstract
This paper focused on developing entrepreneurial skills among secondary school students through effective geometry learning in Obudu Local Government Area of Cross River State. Two research questions and one hypothesis were posed to guide the study. The study adopted the descriptive survey research design. The sample for the study consisted of three hundred and sixty (360) Senior Secondary School two (SS2) students from a population of One thousand two hundred and twenty four (1,224) SS2 students in Obudu Local Government Area of Cross River State. The findings revealed that there was a significant relationship between geometry knowledge and students' entrepreneurial skill development. Based on the findings, it was recommended that (i) There is need to enhance the geometrical background of students (ii) Teachers with strong mathematical background should be used in teaching entrepre-neurship education.

Introduction
Mathematics is pivotal to the development of any nation. It can be defined as a branch of science that deals with numbers and their operations. It involves calculation, computation, solving of problems etc. Its dictionary meaning states that, 'Mathematics is the science of numbers and space' or 'Mathematics is the science of measurement, quantity and magnitude'. The importance of Mathematics to human existence cannot be overemphasized especially as regards its application on everyday human endevours (Sunday, Akamu & Fajemidagba 2014). Mathematics is an essential discipline that is recognized as tool for solving daily problems faced by individuals.

Mathematics is an important subject as its knowledge enhances a person's reasoning, problem-solving skills, and in general, critical thinking. Oviawe (2010) observes that Nigeria like most developing nations of the world is faced with myriad of problems which include unemployment, poverty, conflicts and diseases. These situations pose great challenges to the very existence of individuals in most developing nations thereby, calling for the training of educated men and women who can function effectively in the society in which they live in. The massive unemployment of Nigerian graduates from various institutions of higher learning is traceable to the disequilibrium between labour market requirement and lack of essential employable skills by the graduates (Diejomal & Orimolade 2011).

The existing gaps in skills hamper youth development and in turn national development. Arogundade (2011) opined that the need for entrepreneurship education started emerging in the mid-1980s. This is because, before this period, unemployment and poverty were not a national concern as it is currently. However, he added that political instabilities and inconsistencies in the socio-economic policies of successive government lead to emergence of high level of unemployment in Nigeria. In the mid 80s, the Nigerian economy collapses while youth and

graduate unemployment escalated (Bakere, 2013). There was large-scale lay off of workers and early retirement as a result of structural adjustment policies and bad economy in the country (Arogundade, 2011).

In the face of this situation, entrepreneurship which should have salvaged the situation was not encouraged. It has been observed that tertiary education has not adequately included the philosophy of self-reliance such as creating a new cultural and productive environment which will promote self-discipline and productivity for the general welfare of individuals and society at large. Hence the place of mathematics in the development of entrepreneurship skills for attainment of self-reliance holds the potency to everyday problems being encountered by individuals in the nation.

Entrepreneurship Education

According to Abubakar (2010), entrepreneurship has been identified as a means of providing employment and income generation to individuals and a panacea to poverty reduction and pathetic unemployment situation. The concept of entrepreneurship is vast and many academic disciplines have contributed their perspective on the concept, including psychologist and economist. An economist views entrepreneurship in the context of the combination of resources, such as: labour, materials and other assets such that their value is greater as a group than individually. Omolayo (2016) defines entrepreneurship as the act of starting a company, arranging business deals and taking risk in order to make profit through the education skills acquired.

The operational definition of an entrepreneurship is the willingness and ability of a person or persons to acquire educational skills to explore and exploit investment opportunities, establish and manage a successful business enterprise. The concept of entrepreneurship education to Anho (2011) is associated with various activities here instated but not limited to the following: Innovation, creativity, risk taking, initiative, visionary, focus, determination, team spirit, resourcefulness, financial control, self-confidence, versatility, knowledgeable, dynamic thinking, optimum disposition, originality, people oriented, flexible indecision, responses to suggestions and criticism, need achievement driven, profit oriented, persistent and preserving, energy for hardwork, adjustment to challenges and future looking.

Entrepreneurship education becomes necessary in view of the preset realities and the need to develop and empower particularly the youth in the society. There is seeming consensus on the importance of entrepreneurship in ameliorating some socio economic problems especially unemployment, poverty and all sort of social vices in the society (Oviawe, 2010). One of the trusted instruments for solving problems is mathematics widely regarded as the science of all sciences and art of all arts. In developed societies, mathematics is the bedrock of transformation. Rapid national development can be achieved through application of mathematics on the national economy. Mathematics can be used in finding solutions to everyday life problem such as power supply (Electricity). These life problems pose a challenge to effective daily living. It stands to reason therefore that mathematics can be applied to every aspect of human existence including the economic development of any country like Nigeria.

What then is the role of mathematics in this idea? Important and standard reasons include the need to produce another generation of scholars to continue developing the discipline of mathematics, the supply of a cadre of scientist and other such engineers who need strong mathematics competence, (Greer, 2008). Mathematics education must therefore, give mental pleasure and develop creativity (Greer, 2008). Creativity leads to scientific innovation,

entrepreneurial development, industrial and economic transformation. This paper therefore is designed to illustrate the fact that mathematics is a potent tool for developing entrepreneurship skills needed to tackle unemployment.

Geometry and Entrepreneurship Development

Mathematics will not be complete without geometry. According to Ezeh and Ugwuanyi (2013), mathematics is a subject that develops critical creative and problem solving mind and skill in the learner which is also essential for the development of entrepreneurship skills needed to tackle unemployment. The branch of mathematics that boosts students' creativity is geometry. Since the basis for most critical activities in mathematics is a deep conceptual and principled understanding of geometry (Batista, 2011), then youths who are friendly with deep reasoning, problem solving and critical learning will find it much easier in their entrepreneurship pursuit.

Statement of the problem

The alarming level of unemployment in Nigeria necessitates that education for self-reliance should be the main thrust of the educational system. Entrepreneurship which required developing skills has been identified as a means of making students self-reliant. These skills need to be developed and their development needs adequate knowledge of mathematics education. This study therefore, is targeted to ascertain if the knowledge of mathematics will enhance the development of the skills. It will determine to what extent the skills required mathematics knowledge. It also investigates if gender of mathematics teacher has anything to do with the development of the entrepreneurial skills.

Research Questions

The following research questions were raised to guide this study

1. What is the mean scores of students on entrepreneurial skill development?
2. How does entrepreneurial development need geometry skills?

Hypothesis

1. There is no statistically significant relationship between geometry knowledge and entrepreneurial skill development

Methodology

Design of the study

A descriptive survey research design was adopted for the study since the opinions of respondents were sought.

Area of Study

The study was carried out in Obudu Local Government Area of Cross River State, Nigeria.

Population of the Study

The population is made up of the one thousand two hundred and twenty four (1,224) senior secondary school two (SS2) students in all the public secondary schools in Obudu Local Government Area. (Source: Post Primary School Management Board, PPSMB Obudu)

Sample

The sample for the study consisted of three hundred and sixty pupils (360) students randomly drawn from the population.

Sampling technique
The simple random sampling technique was adopted for this study. The choice of the simple random sampling technique was to ensure that every member of the population was given equal opportunity of being selected for the study. The same method was used to select twenty (20) secondary schools used in the study.

Instrumentation
The instruments used for data collection were the Geometry Achievement Test (GAT) and Geometry and entrepreneurship skills Questionnaire (GESQ).

Method of data analysis
The Pearson Product Moment Correlation Coefficient (PPMC) was used for data analysis.

Results
Table 1: Means and standard deviations of responses on the variables of the study

S/No	Variable	n	$\bar{x}$	SD
1.	Geometry Achievement Test	360	15.64	2.25
2.	Entrepreneurial Skills	360	15.18	2.15

The results in Table 1 shows that students had a mean Geometry Achievement Test of 15.64 with a standard deviation of 2.25 while their mean responses on entrepreneurial skills stood at 15.18 with a standard deviation of 2.15

Presentation of Result
Hypothesis One
There is no statistically significant relationship between geometry knowledge and entrepreneurial skill development. To test this hypothesis, Pearson Product Moment Correlation Coefficient analysis technique was used to analyze the data. The result is shown in Table 2 below.

Table 2: Summary of Pearson Product Moment Correlation Analysis of the relationship between geometry knowledge and entrepreneurial skill development

N=360

Variables	$\bar{x}$	SD	r
Teacher's motivation	15.64	2.25	
			0.716*
Entrepreneurial Skills	15.18	2.15	

* Significant at .05, critical r = .178, df = 358

Field Code Changed

The result of the analysis is found to be significant (r=0.716; P<0.05). The null hypothesis is therefore rejected because the calculated r-value of the 0.716 is found to be greater that the critical r-value of 0.178 at 0.05 probability level, and with 358 degree of freedom. This result

means that there is a significant relationship between geometry knowledge and students entrepreneurial skill development.

Summary of Findings

From the results of data analyses, the following can be deduced:

1. There is a significant relationship between geometry knowledge and students entrepreneurial skill development.

Recommendations

Based on the findings of this study, the following recommendations were made.

1. There is need to enhance the geometrical background of students.
2. Teachers with strong mathematical background should be used in teaching entrepreneurship education.

Conclusion

This study revealed that knowledge of mathematics is a crucial element in the teaching/learning and development of entrepreneurial skills.

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