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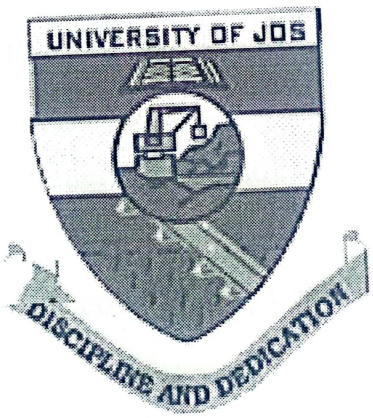


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CREATIVITY AND ACHIEVEMENT MOTIVATION AS PREDICTORS OF SENIOR SECONDARY SCHOOL STUDENTS' ACADEMIC ACHIEVEMENT IN KWARA STATE, NIGERIA

BY

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ABSTRACT

The study assessed creativity and achievement motivation as predictors of achievement of Senior Secondary School Students in Kwara State, Nigeria. Correlational research design was adopted for the study. Stratified random sampling technique was used to select twelve (12) public and private schools while simple random sampling technique was used to select four hundred and two (402) senior secondary school students (111) across the State. The research instruments used were creativity assessment scale and achievement motivation scale adapted from Sunday (2000). Academic achievement test was also adopted from NECO past questions ranging from 2009-2012. The instruments were validated by an expert in education and were found to have reliability coefficient of 0.64, 0.72 and 0.68 respectively. Research questions were raised and answered using descriptive statistics in form of frequency counts and percentage and null hypothesis generated was analyzed using multiple regression analysis technique respectively. The findings of the study revealed average academic achievement, high creativity and high achievement motivation among secondary school students in Kwara State.

Findings of the study also, revealed that both creativity and achievement motivation significantly predicted students' achievement in mathematics, the result revealed multiple regression analysis of 5.2% (R^2=0.052), with F.ratio = 10.957 ($p<0.05$), with degree of freedom (df) of 399, significant at 0.05. conclusion, based on the findings the researcher recommended that Students especially at the Secondary School level should be given opportunities to carry out creative activities capable of developing their creative talents by a way of allowing them to put into practice what they acquired theoretically in the class. Teachers and instructors should endeavor to get students actively involved in teaching learning activities and give them freedom of expression. It was also recommended that appropriate teaching methods such as discovery methods in teaching creativity among secondary school students should be employed. Similarly, it was recommended that students should be provided with feedback on their actions and good responses from them should be reinforced to develop internally generated motives in order to perform excellently in their academic endeavour.

Key worlds: Creativity, Achievement Motivation, Academic Achievement, Mathematics, Kwara State, Nigeria

INTRODUCTION

Education remains the most powerful tool in liberating people from poverty. It is widely recognized as the bedrock of individual and national development. It is also seen as an essential tool for quick, effective and sustainable growth and development. All types of education constitute the major force in transforming human potential into effective and efficient resources. This buttresses the statement in the national policy on education (2013) that "education is an instrument for national development and social change" (p.13). However, the major concern centres on the low academic achievements of students especially in mathematics. Valencia (2002) stated that low academic achievement of students is a great concern to both educators and researchers, because the problems in the achievement of students predict school dropout. In order to find solutions to low academic performance, many studies have been conducted. Okooboh, Afolabi and Asilika (2004) revealed that negative attitude of students to studies brings about low academic achievement. Creativity as a psychological factor has also been investigated and reported to have a remarkable contribution to academic achievement (Lobel and Agami, 1993).

Creativity is a fundamental element in education. Creative thinking helps students to try different concepts, new methods, different perceptions, and different points of views toward a given problem (Cave, 2001). Creativity is described by Eggen and Kauchak (2001) as the ability to identify and provide original and varied solutions to the problem. Creativity is a psychological construct that is difficult to pin down to a single definition because of its complex nature. Every day, we face new changes in all aspects of life and creativity is not only a means for adapting with changes but also a stimulus for producing knowledge in different fields of study. Simpson (2012) claimed that creativity is a human mental capacity which assists people to apply their thinking and originate opinions and resolution. According to Walberg (1991), creativity is the capacity to have a new thought and to create expression unlike any other. Also, Okoye (1989) defined creativity as a multi-component

construct, comprising ideative fluency, flexibility and originality. Similarly, San'chez (2011), described creativity as a multidimensional phenomenon with many influential factors comprises personality characteristics, cognitive capacities, cognitive methods and motivation. Creativity and innovation generate wealth and success, thus creativity plus innovation equals success (Akinboye, 2003). Creativity produced actionable ideas, new methods and opportunities, while innovation adds value to the creative outcomes. It was stated further that without creativity, man would not be able to make full use of innovation and resources available, but remained in the existing paradigm and set standard. Many research studies (Morris, 2006; Qotami, 1995; Patrick, 2000) have examined and highlighted importance of creativity especially in educational areas. The relationship between creativity and academic achievement has been examined by a number of investigators. In a research conducted by Sunday (2000) at University of Ilorin, it was revealed that there is a significant relationship among Creativity, Achievement Motivation, locus of control and students' academic performance in science. Also, Runco (2007) found positive relationship between creativity and academic achievement. Similarly, Ijanaku (2007) investigated the relationship among creativity, intelligence, achievement motivation and academic performance at University of Ilorin and reported that there is positive relationship among the four variables. Similarly, Nori (2002) used an Abedi questionnaire on Creativity and Cumulative Grade Point Average for academic achievement of Malaysian undergraduates. The results revealed positive relationship between creativity and academic achievement.

Closely related to creativity is achievement motivation. Achievement motivation is a widely researched topic in both the fields of psychology and education. Achievement motivation can best be understood by examining the meanings of "achievement" and "motivation" separately. Achievement typically stresses the importance of accomplishment and attainment with effort involved (Mandel & Marcus, 1988). Motivation relates to an individual's reason for engaging in an activity, the degree to which an individual pursues the activity and the persistence of the individual in such activity in order to attain the desired goal (Graham & Weiner, 1996). Dörnyei (2001) also claimed that motivation explains why people decide to engage in something, how hard they are going to pursue it and how long they are willing to sustain the activity. Gesinde (2000) described Achievement motivation as self-determination to succeed in whatever activities one engages in, be it academic work, professional work, sporting events, among others.

Motivation as an academic engagement is also described as cognitive, emotional, and behavioural indicator of student determination in and attachment to education (Tucker, Zayco, & Herman, 2002). Long (2007) believed that students with high achievement motivation perform better in school work, value their schooling, have academic goals, possess academic self-efficacy and tend to have positive feelings of self-worth which is necessary in improving academic performance. In the effort to improve students' cognition and affective outcomes in school learning, researchers especially educational psychologists have continued to search for variables (personal and environmental) that could be manipulated in favour of academic gains. Of all the personal and psychological variables that have attracted educators and researchers in this area of educational achievement, motivation seems to be gaining more popularity and leading other variables (Tella, 2003). Wentzel (1998) stated that interest in activities tends to increase the likelihood that individual formulates goals relating to that activity and invest time and effort to achieve

them. Nolen (2003) believed that achievement motivation is one of the salient predictors of students' performance. Research conducted by Sunday (2000) revealed that there is a significant relationship among Creativity, Achievement Motivation, locus of control and students' academic performance in science. Also, Runco (2007) found positive relationship between creativity and academic achievement.

Rapid decline in students' academic achievement has been a major concern to educators, researchers and those that have something to do with education. In an attempt to address the problems of low academic achievement of students, a lot of factors have been investigated. Some of these factors include class size (Crosnoe, Johnson & Elder, 2004), learning styles (Aripin, Mahmood, Rohaizad, Yeop, & Anuar, 2008) etc. In a research conducted by Adeola (2011) on Emotional Intelligence, Creativity and academic achievement of students, it was reported that EI and creativity significantly influenced the students' academic achievement. Wang (2011) carried out studies on American students to demonstrate the relationship between cognitive creativity and academic performance in physics. The results showed that the two variables are positively related. Several other researchers have also reported that creativity is positively related to academic performance (Asha, 1980; Karimi, 2000; Mohamad, 1998; Marjoribanks, 1976). Also, a study carried out by Ajayi (1998) on achievement motivation involving 276 students revealed that there is significant relationship between academic performance and achievement motivation. In a similar studies, Johnson, (1996), Broussard and Garrison (2004), Skaalvik and Skaalvik, (2004) and Sandra (2002) revealed significant relationship between academic performance and achievement motivation.

From the foregoing, it can be inferred that there is a dearth of studies on the identified variables in the present locale and that most of the available studies reviewed are foreign based. Hence, there is a gap to fill in term of examining Creativity and Achievement Motivation as predictors of students' Achievements in Mathematics in Kwara State, Nigeria.

Purpose of the Study

(a) The main purpose of this study is to investigate Creativity and Achievement Motivation as predictors of Secondary School Students' Achievement in Mathematics in Kwara State, Nigeria. Specifically, the study examines: the profile of Creativity, Achievement Motivation and Academic Achievement of Senior Secondary School Students in Mathematics in Kwara State, Nigeria.

Research Questions

The following research questions were raised and answered to sharpen the focus of this study:

a. What is the profile of Academic Achievements of Secondary School Students in Mathematics?

b. What is the profile of Achievement Motivation among Secondary School Students in Kwara State Nigeria?

c. What is the profile of Creativity of Secondary School Students in Kwara State, Nigeria?

d. Do Creativity and Achievement Motivation predict Secondary School Students'

Achievement in Mathematics?

Research Hypothesis

H_{o1}: Creativity and Achievement Motivation do not significantly predict Secondary School Students' Achievement in Mathematics?

Methodology

A descriptive survey design of correlation type was adopted for this study. Stratified sampling technique was used to select 4 schools (2 public and 2 private) from each senatorial district within the entire population bringing the total number of schools to twelve (12). Simple Random Sampling Technique was used to select four hundred and two (402) senior secondary students (III). To measure creativity and achievement motivation level of the respondents, an adapted version of Ibadan Creativity Assessment Scale (I.C.A.S) (Akinboye, 1977) and Achievement Motivation Scale (Bakare, 1976) were used. Each of the two tests contains 30 items. The two tests were rated on five likert scale of Very true of me (5), True of me (4), almost true of me (3), Untrue of me (2), Very untrue of me (1). The scores obtained from the test were interpreted using these categories; High, Average, Low. Academic Achievement Test in Mathematics was adopted from NECO past Questions ranging from 2009 to 2013 taking into consideration table of specification and ten (10) items were selected across the years selected to obtain academic achievement of the respondents. The test contains 50 items and the scores obtained were interpreted as High, Average and Low. To analyse the data obtained the researcher used descriptive statistics in form of frequency count and percentage to answer research questions a, b and c while inferential statistics in form of multiple regression was used to answer one formulated null hypothesis.

Results

Descriptive statistics were used in form of frequency count and percentage to answer the three raised research questions for this study.

Research Question One: *What is the profile of academic achievement of Senior Secondary School Students in Kwara state?*

TABLE 3a: Distribution of Respondents by their Profile of Academic Achievement

Variable	Frequency	Percentage (%)
ACADEMIC ACHIEVEMENT:		
HIGH	192	47.8
AVERAGE	199	49.5
LOW	11	2.7
TOTAL	**402**	**100**

The results in Table 3 revealed that among 402 students, 192 (47.8%) have a high academic achievement, 199 (49,5%) fall within average while 11 (2.7%) low in their academic achievement.

Research Question 2: *What is the profile of achievement motivation of senior science secondary students in kwara state?*

Table 3b: Distribution of Respondents by their profile of Achievement Motivation

Variable	Frequency	Percentage (%)
ACHIEVEMENT MOTIVATION		
HIGH	315	78.4
AVERAGE	83	20.6
LOW	4	1.0
TOTAL	**402**	**100**

Result in table 3b indicated that out of 402 respondents, 315 (78.4%) were with high Achievement Motivation, 83 (20.6%) scored average while only 4 (1.0%) scored low in the Achievement Motivation test.

Research Question 3: *What is the profile of creativity of senior science secondary school students in Kwara State?*

Table 3c: Distribution of Respondents by their Profile of Creativity

Variable	Frequency	Percentage (%)
CREATIVITY		
HIGH	311	77.4
AVERAGE	86	21.4
LOW	5	1.2
TOTAL	**402**	**100**

Key:a. Acad. Achievement: High=B_3-A_1, Average=C_6-C_4, Low= f9-D_7

b. Creativity: High=120-180, Average=90-119, Low=1-89

c. Ach. Motivation: High=120-180, Average=90-119, Low= 1-89

On the basis of creativity the result in table 3c revealed that 311 (77.4%) of respondents scored high in the Creativity test, 76 (21%) scored average while 5 (1.2%) scored low in the test.

Hypotheses Testing

The hypotheses formulated were tested with the use of multiple regressions at alpha level of 0.05.

Ho_1: *Creativity and achievement motivation do not significantly predict achievement of students in mathematics.*

Table4: Result of Multiple Regression Analysis of Creativity, Achievement Motivation and Students' Achievement in Mathematics

A. Model Summary for the Constructs

R	R square	Adjusted R Square	Std. Error of the Estimate
0.228	0.052	0.047	10.084

a. Predictors (constant), Creativity and Achievement Motivation

b. Dependent variable: Academic Achievement of Students in mathematics

B. Analysis of Variance of the constructs

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2228.358	2	1114.179	10.957	0.000
Residual	40573.113	399	101.687		
Total	42801.475	401			

a. Predictors: (constant), Creativity and Achievement Motivation

b. Dependent variable: Academic achievement of Students in mathematics

C. Coefficient of the Constructs

	Unstandardized Coefficient		Standardized Coefficient		
Model	B	Std. Error	Beta	t	Sig
Constant	17.017	2.849		5.973	0.000
Ach, Motivation	0.051	0.029	0.126	1.972	0.016
Creativity	0.051	0.028	0.122	1.791	0.074

a. Predictors: (constant), Creativity and Achievement Motivation

b. Dependent variable: Academic achievement of Students in mathematics

The results in the table 4a-c showed that Creativity and Achievement Motivation has positive correlation with the students' Achievement in Mathematics by 5.2% (R^2= 0.052). Table 4b represents the ANOVA report on general significance of the model. The p- value is less than 0.05 ($p<0.05$), and this implies that the model significantly predicted achievement Mathematics. Therefore, the combination of the two independent variables predicted the dependent variable ($F=10.957, p<0.05$).

The results of the regression as shown in Table 4c revealed that Achievement Motivation predicted Students' Achievement in Mathematics by 5.7% and significantly correlates with students' Academic Achievement ($t=1.972$, $p<0.05$). Similarly, Creativity predicted students' Achievement in Mathematics by 5.1% ($t=1.791, p<0.05$). On the basis of the results reported, the null hypothesis was not accepted and restated as research hypotheis1 that: H_1 Creativity and Achievement Motivation significantly predict students' Achievement in Mathematics.

Discussion

The finding of this study revealed that students with high Creativity level have high academic achievement. In the same vein, students that have high achievement motivation also have high academic achievement. This indicated that there is positive correlation among the three variables selected in the study.

The finding of this study also revealed that creativity and achievement motivation predicted student's achievement in mathematics. This finding is in agreement with the findings of (Karimi, 2000, & Mohamad, 1998) who reported that creativity is positively related to academic performance and that of Nori (2002) who reported that there is positive relationship between creativity and Academic performance. The findings are also in line with Skaalvik and Skaalvik (2004), Sandra (2002) whose studies revealed significant relationship between achievement motivation and students' academic performance. This shows that the results reported by these foreign researchers are externally valid.

Conclusion

The findings of this study revealed that out of 402 students, 192 (47.8%) have a high academic achievement, 199 (49,5%) fall within average while 11 (2.7%) low in their academic achievement, 315 (78.4%) have high Achievement Motivation, 83 (20.6%) scored average while only 4 (1.0%) scored low in the Achievement Motivation test. On the basis of creativity 311 (77.4%) of respondents scored high in the Creativity test, 76 (21%) scored average while 5 (1.2%) scored low in the test.

The finding of this study revealed that creativity and achievement Motivation predicted students' Achievement in Mathematics but Achievement motivation has higher relative contribution than creativity on students' Achievement in Mathematics.

Recommendations

Based on the findings of this study the following recommendations were made:

1. It was recommended that Students especially at the Secondary School level should be given opportunities to carry out creative activities capable of developing their creative talents by a way of allowing putting into practice what they acquired theoretically in the class.
2. Teachers and instructors should endeavor to avoid imposing on students and give them freedom of expression.
3. It was also recommended that appropriate teaching methods such as questioning techniques and discovery methods in teaching creativity among secondary school students should be employed.

The researcher recommended that students should be provided with feedback on their academic activity such as marking their scripts and reinforcing good responses to develop internally generated motives in order to perform excellently in their academic endeavour.

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