CREATIVITY AND ACADEMIC PERFORMANCE: EXPLORING GENDER DIFFERENCES AMONG SENIOR SECONDARY SCHOOL STUDENTS IN KATSINA STATE, NIGERIA

AUWAL AMINU JIBIA, PROF. BAGUDU ALHAJI ADAMU & DR UMAR MAMMAN
[1&3] Department of Educational Psychology and Counselling,
Faculty of Education, Federal University Dutsin-Ma, Katsina State, Nigeria.
Department of Educational Psychology and Counselling,
Faculty of Education, Ahmadu Bello Univeristy Zaria.
bagudu315@gmail.com; aajibia@fudutsinma.edu.ng; umamman@fudutsinma.edu.ng

Abstract

This study investigated the relationship between creativity and academic performance among senior secondary school students in Katsina State, Nigeria, with a focus on gender difference. Descriptive correlational design was used by the researchers. The population of the study consists of 12 senior secondary schools in Katsina metropolis with a total population 10,780 students. Research Advisors (2006) was used to sample 357 students drawn from SS II of 6 selected senior secondary schools using simple random sampling. The method for the collection of the data were the adopted Ibadan Creativity Assessment Scale (ICAS) to measure creativity with a reliability coefficient of $\alpha = 0.85$, and the designed Biology Academic Performance Test (BAPT) to measure academic performance with a reliability coefficient of $\alpha = 0.74$. Data collected were analyzed using PPMCC and t-test analysis. Findings of the study showed that there is significant relationship between creativity and academic performance in Biology ($r = .807$; $p < 0.05$); there is significant difference in the creativity of male and female senior secondary school students ($t = 14.62$; $p < 0.05$). Based on the findings of this study, it could be concluded that significant relationship exists between creativity and academic performance among senior secondary school students in Katsina. Additionally, significant difference exists in creativity of male and female senior secondary school students in Katsina as the gender performs differently in creativity tests. Therefore, the study recommends that curriculum planners and teachers should integrate creativity-enhancing activities into classroom instruction in order to promote both innovation and academic performance.

Keywords: Creativity, Academic Performance, Gender Difference

Introduction

Creativity often thought of as the generation of new ideas, has been a particular focus of research since the middle of the 20th century. Because it is a broad construct, there are many competing definitions. It is generally defined as the ability to generate original and valuable ideas (Runco & Jaeger, 2012). In the educational context, creativity involves divergent thinking, problem-solving, and the application of innovative approaches to learning tasks (Gajda et al., 2017). Studies have shown that creativity enhances learners' ability to process information, engage deeply with content, and develop critical thinking skills (Beghetto & Kaufman, 2014). Several studies have examined the relationship between creativity and academic performance, for instance, Olatoye (2010) reported a significant positive relationship between creativity and academic achievement among Nigerian secondary school students. Similarly, Said-Metwaly, Van den Noortgate, and Kyndt (2017) found that creativity contributes to enhanced problem-solving skills, which in turn positively affect students' performance.

However, some studies suggest that the relationship is not always straightforward, as creativity may be undervalued in education system that emphasize rote memorization and standardized testing (Sternberg, 2018). The role of gender in creativity and academic performance has also attracted scholarly attention. For example, some studies found that boys tend to score higher on creativity tasks involving divergent thinking, while girls often perform better on tasks requiring elaboration and detail (Karwowski et al., 2016). In some studies, it was reported that girls often outperform boys in language-based subjects, while boys sometimes perform better in mathematics and science (Vantieghem et al., 2014). In Nigeria, Adeyemi and Adeyinka (2019) reported gender differences in creativity among secondary school students, linking the disparities to socio-cultural expectations and classroom dynamics. Evidence remains inconsistent with other studies showing no significant gender differences in creativity (Abraham, 2016).

In Nigeria, secondary education is primarily structured around examinations, with emphasis on memorization and reproduction of knowledge. A student may have creative potentials but will go unnoticed throughout his school days because emphasis is given to only what his performance shows on the examination forgetting other creative abilities that he/she may possess. This approach has often been criticized for neglecting the cultivation of creativity, which may limit students' ability to excel academically in more holistic ways (Olatoye, 2010). Although, numerous studies have examined creativity and academic performance, few have investigated this relationship within the northern Nigerian context, particularly in Katsina state. Moreover, the interaction between creativity, academic performance, and gender remains underexplored in this region. Some of the available studies have either focused on one variable in isolation or have been conducted in different socio-cultural environments. Therefore, addressing these gaps is essential for designing educational practices that integrate creativity into academic learning for both male and female students in Katsina state.

Statement of the Problem

One of the goals of National Policy on Education (2013) is development of appropriate skills, mental, physical and social abilities and competencies to empower the individual to live in and contribute positively to the society. When one considers the nature of examinations in our schools where ambition for certificate rather than objectivity have become the main criteria for placement in classes, courses or programs and entry into higher institutions of learning. Therefore, secondary school graduates could not express themselves creatively. As a result of that, majority of students end up with examination results they can neither defend nor put into actual practice the knowledge and skills acquired in the school. Despite the recognized importance of creativity in education, there is insufficient empirical research in Nigeria examining its relationship with academic performance, particularly in northern states such as Katsina. Most available studies have been conducted in southern Nigeria or outside the country, leaving a gap in understanding how creativity relates to academic performance in this context. Additionally, gender disparities in education across northern Nigeria raise important questions about whether boys and girls benefit equally from creativity in relation to their academic performance. Without such evidence, educators and policymakers may lack the insights needed to design teaching strategies and interventions that foster both creativity and academic excellence among students.

Objectives of the Study

The study was guided by the following objectives:

1. To assess the relationship between creativity and academic performance among Senior Secondary School Students in Katsina.
2. To assess the difference in creativity of male and female Senior Secondary School Students in Katsina.

Research Questions

The following questions were formulated to guide the study.

1. What is the relationship between creativity and academic performance among Senior Secondary School Students in Katsina?
2. What is the difference in creativity of male and female Senior Secondary School Students in Katsina?

Hypotheses

Based on the questions posed above, the following hypotheses formulated were tested at 0.05 level of significance:

H01: There is no significant relationship between creativity and academic performance among Senior Secondary School Students in Katsina.

H02: There is no significant difference in creativity of male and female Senior Secondary School Students in Katsina.

Methodology:

This study employed a descriptive correlational design. This is because correlational designs are used to find out the relationships between two or more measured variables for the purpose of making prediction about such relationship. A correlational study can be used to show if a relationship exists between two or more variables but does not indicate causation. Stangor (2004) reported that correlational designs tend to measure complexities of the patterns of relationship that exist among measured variables.

The population for this study consists of all the 12 senior secondary schools in Katsina Metropolis with total population of ten thousand seven hundred and eighty (10,780). The target population is the SSII students of 6 secondary schools. The total population of SSII students in all the six schools is 4,971 students, while Research Advisors (2006) was used to determine the sample size of 357 students. The sample size of the students was proportionately determined across the six schools because their population varies in number so the higher the population of a school, the higher the number of samples the school will have.

The instruments used for the collection of the data were the adopted Ibadan Creativity Assessment Scale (ICAS) to measure creativity with the reliability index of 0.85 as developed by Akinboye (1985), and the designed Biology Academic Performance Test (BAPT) which was extracted from WAEC 2021 past question paper to measure academic performance. The test composes 20 questions of Biology tests items to be solved by the participants in the study. Each question contains 4 options. Any correct answer attracts five marks while wrong answer attracts zero mark. In order to ascertain the validity of the BAPT, it was given to experts in the Department of Educational Psychology and Counselling, Federal University Dutsinma. The experts made corrections which were taken into consideration. At the second look, the experts adjudged the instrument valid. To establish reliability, the instrument was administered on a representative sample of thirty (30) respondents. The scores were subjected to Pearson Moment Correlation analysis which yielded coefficient alpha of 0.74 which shows that the instrument was reliable for the study.

Descriptive statistics; percentage and frequency counts were used to analyze respondents' demographic data, while inferential statistics using Pearson product moment correlation co-efficient (PPMCC) and t-test statistics were used to test the hypothesis at significance level of 0.05. The IBM SPSS Statistics 23.0 version was used to run the analysis.

Results

This section presents the result of the analysis of data obtained from the field. The demographic data was analyzed using frequency counts and percentages, while PPMCC and t-test statistics were used to test the hypothesis at 0.05 alpha levels of significance.

Table 1: Distribution of Respondents Based on Gender

S/N	Gender	Frequency	Percentage (%)
1.	Male	189	52.6%
2.	Female	168	47.4%
	Total	**357**	**100%**

Table 1 shows that 357 respondents participated in the study out of which, 189 (52.6%) were males, while 168 (47.4%) were females.

Hypotheses Testing

Hypothesis One: There is no significant relationship between creativity and academic performance among Senior Secondary School Students in Katsina.

Table 2: r-value of Creativity and Academic Performance

Variables	N	Mean	SD	Df	r-cal	p-value	Decision
Creativity	357	517.57	68.95	355	.807	.000	Rejected
Academic Performance	357	52.55	14.44				

Pearson's r (r=.807, n= 357, p= .000< .05)

Table 2 reveals that secondary school students creativity and academic performance were positively related and significant, Pearson's r = .807, p = .000<.05. This indicates that there is significant relationship between creativity and academic performance among senior secondary school students in Katsina because the p-value of .000 is less than the .05 level of significance. Therefore, the null hypothesis which states there is no significant relationship between creativity and academic performance among senior secondary school students in Katsina was rejected. This means that those that scored high in creativity test also scored high in academic performance test likewise those who scored low in academic performance test scored low in creativity test.

Hypothesis Two: There is no significant difference in creativity of male and female Senior Secondary School Students in Katsina.

Table 3: t-test Analysis for Difference in Creativity Scores of Male and Female

Group	N	Mean	SD	Df	T	P	Remark
Male	189	557.64	68.06				
				355	14.62	0.000	Significant
Female	169	473.13	33.42				

t-test t (t=14.62, n= 357, p= .000< .05)

Table 3 shows that difference in creativity of male (mean = 557.64) and creativity of female (mean = 473.13) secondary school students in Katsina was significant, t = 14.62, p = .000<.05 This indicates significant difference in creativity of male and female senior secondary school students in Katsina because the p-value of .000 is less than .05 level of significance. Therefore, the null hypothesis which says there is no significant difference in creativity of male and female senior secondary school students in Katsina was rejected. This means that there is gender difference in creativity. As such, both sexes

perform differently.

Discussion of Findings

Based on the results of the hypotheses analyzed, it was established that creativity significantly enhances academic performance, aligning with the studies of Olatoye (2010) who reported a significant positive relationship between creativity and academic achievement among Nigerian secondary school students, and Said-Metwaly et al. (2017) who found that creativity contributes to enhanced problem-solving skills, which in turn positively affect students' performance.

Gender differences were observed, consistent with Adeyemi and Adeyinka (2019) who reported gender differences in creativity among secondary school students, linking the disparities to socio-cultural expectations and classroom dynamics, though the moderating role of gender was not supported; suggesting creativity benefits both sexes equally. These results reinforce the need to integrate creativity into teaching practices in Katsina state.

Conclusion

Based on the findings of this study, it could be concluded that significant relationship exists between creativity and academic performance among senior secondary school students in Katsina since those who score high in creativity test also scored high in academic performance test and those who scored low in creativity test scored low in academic performance test. Additionally, significant difference exists in creativity of male and female senior secondary school students in Katsina as the gender performs differently in creativity tests.

Recommendations

Based on the findings of the study, the researchers recommend the following:

1. Curriculum planners and teachers should integrate creativity-enhancing activities into classroom instruction in order to promote both innovation and academic performance.
2. Teachers should be trained in student-centered, creativity-enhancing pedagogy and to provide equal opportunities for both genders to develop creatively.
3. Government should give emphasis to female students' creativity by establishing girls Technical Schools in the state since there is gender difference in creativity of male and female students of senior secondary schools in Katsina.

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