

TEST ANXIETY AS PREDICTOR OF ACADEMIC ACHIEVEMENT OF GEOGRAPHY STUDENTS IN COLLEGES OF EDUCATION IN NORRTH-WEST, NIGERIA

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Abstract

The study investigated the relationship between Test Anxiety and Academic Achievement of Geography Students in Colleges of Education in North-West, Nigeria. Two research objectives, two research questions and two tested hypotheses were raised. The target population for this study comprised of 2871 N.C.E II Geography students of 2024/2025 academic session in 10 colleges of education in North-west Zone Nigeria, out of which 1822 are males and 1058 are females. The sample size of this study was 346 NCE II Geography students consisting of 199 male and 147 female selected using multi-stage sampling procedure. The Geography Students' Test Anxiety Questionnaire (GSTAQ) was validated by two experts and reliability coefficient of 0.84 was established indicating that the instrument was reliable. However, students' academic achievement was measured using their first and second semester NCE I results, from which the Cumulative Grade Point Average (CGPA) was computed on a five-point scale. Descriptive Statistics and Pearson Product Moment Correlation Coefficient was used to answer research questions while the hypotheses were tested using Linear Regression, and Fisher's Z test. The findings revealed that there is a significant negative relationship between students' test anxiety and academic achievement in colleges of education North-west, Nigeria. The result also disclose that there is no significant gender difference in the relationship between test anxiety and academic achievement of Geography students in colleges of education in North-west, Nigeria. The study recommended among others that lecturers handling Geography students in colleges of education should improve their professional competence through seminars and workshops in order to enhance the quality of teaching and learning that will strengthen students' academic achievement.

Key words: Test anxiety, Predictor, Academic Achievement, Geography, Students.

Introduction

Geography is the study of location and distribution of phenomena and natural resources on the earth's features (Salisu, 2021). In essence, Geography is concerned with the location, spatial and distribution of living and non-living things patterns and relations, regional characteristics of these elements on human life and settlement, the forces that change the earth's features and processes, preparation of thematic maps for planning and development, analyses of satellite images for various purposes.

Geography is therefore an interdisciplinary field of study that influences agriculture, industry, commerce, economic development, space craft and anthropology. Environmental studies, navigation, security and national development (Iidiawati, Nurwahidun & Widodo, 2022). The objectives Geography focuses on the interrelationship among occurrences on the earth surface and those in the atmosphere (Mogbo, Ibrahim, & Tukura, 2021). The knowledge

of geography according to Olaniyi and Oladokun (2021) has been meaningfully linked to national integration and infrastructural development.

Despite the significant role of teaching and learning of geography in Nigerian colleges of education which are established to produce competent and qualified geography teachers, it was observed that, the problem of teaching and learning of geography in these colleges still persist with geography students continue to exhibit negative attitude level and low academic grade (Olaniyi, & Oladokun, 2021). Previous research by (Aun, Adaga, Ajala, Odunayo, & Adaaku, 2020; Eze, 2020; Solem, Vaughan, Savage, & De Nadai, 2021; Makowsky & Martin, 2021; Falode, & Mohammed, 2023) reported that, the teaching and learning of Geography at higher institution particularly colleges of education is currently faced with a number of challenges which include but not limited to low students' academic achievement, reduced enrolment at tertiary education level particularly colleges of education,, government unstable educational policy among others.

Low student's academic achievement was considered as the most critical problem among colleges of education geography students. These problem has been linked to challenges related to psychological factors such as Test anxiety self-efficacy, and grit mindset among others (Vivian, 2020; Qin, Liu, Yang, Wang, Xia, Tian, & Chen, 2021; Shyamaraj, 2023; Harpaz, Tal Vaizman & Yosi Yaffe, 2023). Previous researches disclosed that, students who were reported having low academic grades in semester examination possessed high level of test anxiety (Adjei (2022). A critical review of colleges of education geography students' results through a period of five years have shown that, the colleges of education geography student's academic achievement has not been impressive. It has been revealed that majority of geography students are battling with low academic grades in their semester examination. Supporting this, Falode and Mohammed (2023) revealed that Low grades point average ("D" or "F") was considered to be the major problems affecting the teaching and learning of geography in Nigerian colleges of education. Thus, these could leads to academic probation, academic burnout, producing of low quality teachers, difficulty in securing admission into university among others (college examination officer report, 2022).

To reduce this menace, some scholars in science education have recently suggested a shift from cognitive factors to non-cognitive factors such as; Test anxiety, self-efficacy and Grit mindset among others, for example Olisaememeka & Solarin, (2019) disclosed that High levels of test anxiety among students can impede concentration, memory recall, and overall cognitive functioning, potentially leading to lower academic achievements. Test anxiety becomes a concern as it is believed to be detrimental to the school success. The expectations of students getting low grades in examinations can lead to high anxiety during test, which can cause worrying psychological reactions such as sweating, shaking, sadness, crying, and fast heartbeats that negatively affects students' test outcomes (Qin, Liu, Yang, Wang, Xia, Tian, & Chen, 2021) high level of debilitating test anxiety could be so complicating as to limit the students' academic achievement (Vivian, 2020).

The problem of test anxiety has been observed among science students who most of the time perceives the subject to be broad, lack the skills for science inquiry (Ihekwoaba et al., 2020). These problems according to Anakwe and Dikko (2017) have just one end result which is poor academic grades. Adjei (2022) conducted a study administering test anxiety scales to 300 teacher training candidates at a college of education and found that over half displayed moderate to high anxiety surrounding teaching practice and certification exams. The test anxiety of students is critical components that can predict students' academic success and their interaction can significantly vary by gender.

Gender difference on performance in science has been long debated issue. Some studies found male students performing on average, better than female counterpart; some found female performing better than male while others found no significance difference. However, few researchers focused on gender differences in teaching in teaching and learning of Geography for instance (Ibrahim & Dalladi 2020: Waziri, Yusuf, & Muhammad, 2023; Salisu 2025) studies revealed significant difference in the achievement of male and female in favor of male.

Statement of the Problem

The colleges of education are tertiary institution in Nigeria established to train competent and qualified teachers for both primary and junior secondary schools and are mandated to award the Nigerian Certificate in Education (NCE) (Kola & Taiwo, 2022), but unfortunately, the academic achievement of geography students particularly at colleges of education has been subject to various challenges (Ntim, Gyamfi, Pomaa & Afari, 2020; Makowsky & Martin, 2021; Solem, Vaughan, Savage, & De Nadai, 2021; Falode, & Mohammed, 2023; Danladi, 2023).

It was observed that, the problems of teaching and learning geography at colleges of education level still persist. Previous researches revealed that, students who were reported having low grades point average (GPA) possessed high level of test anxiety (Adjei, 2022). These therefore, influence colleges of education students' academic achievement and attitudes toward learning. This study is therefore aims to investigate the relationship between test anxiety and academic achievement among north-west colleges of education geography students, Nigeria.

Objectives of the study

The main objective of this study is to investigate the influence of test anxiety as predictor of attitude and academic achievement geography students in colleges of education in north-west, Nigeria. In specific terms, the objectives of the study are to determine:

1. The relationship between test anxiety and academic achievement of geography students in colleges of education in north-west, Nigeria.
2. The gender difference in the relationship between test anxiety and academic achievement of geography students in colleges of education in north-west, Nigeria.

Research Questions

1. What is the relationship between test anxiety and academic achievement of geography students in colleges of education in north-west, Nigeria?
2. What is the gender difference in the relationship of test anxiety and academic achievement of geography students in colleges of education in north-west, Nigeria?

Hypotheses

- H₀₁** There is no significant relationship between test anxiety and academic achievement of geography students in colleges of education in north-west, Nigeria.
- H₀₂** There is no significant gender difference in the relationship between test anxiety and academic achievement of geography students in colleges of education in north-west, Nigeria.

Methodology

The study employed a correlation research design. This design is considered appropriate because it enable the researcher to examine the nature and strength of the relationship among the study variables using quantitative techniques, to numerically analyze the relationship among the variables. The students' academic self-efficacy, Emotional intelligence and grit-mindset were the predictor variables, while the attitude and academic achievement were treated as the dependent (outcome) variables. The design makes it possible to establish associations and predictive relationships among the study variables.

The target population for this study comprised all N.C.E II geography students of 2024/2025 academic session in 10 colleges of education in north-west, Nigeria. The colleges include both federal and state-owned colleges of education, situated across seven (7) states, namely Kano, Kaduna, Katsina, Kebbi, Sokoto, Jigawa and Zamfara States. The total numbers of N.C.E II geography students in the 2024/2025 academic session in these colleges are 2871 out of which 1822 are males and 1058 are females. The sample size of this study was 346 NCE II Geography Students, as recommended by Research advisors table (2006) for a population of 2871 at a 0.05 alpha levels and 95% confidence interval. The study adopted a multi-stage sampling procedure, at first stage, 3 states were selected from the northwest zone of Nigeria using systematic sampling technique and then geography students were proportionately sampled to obtain a requires sample size.

The study utilizes Geography Students' Test Anxiety Questionnaire (GSTAQ). The GSTAQ instrument consists of twenty four (24) items adapted. The GSTAQ was validated by two experts from Geography department, Bayero University Kano State. The instruments were pilot tested, the scores obtained were analyzed using Pearson Product Moment Correlation (PPMC) and 0.84 was established indicating that the instrument was reliable. However Geography students' academic achievement was measured using their first and second semester NCE I results, from which the Cumulative Grade Point Average (CGPA) was computed on a five-point scale.

Results

Research Question1: What is the relationship between students' test anxiety and academic achievement of geography students in colleges of education in north-west, Nigeria?

Table 1: Descriptive Statistics and Pearson Product Moment Correlation Coefficient between Test Anxiety and Academic achievement of Geography Students in Colleges of Education, Northwest Nigeria

Variable	N	Mean	SD	r-value	Remark
Test Anxiety	346	53.88	10.66		
				-0.590	Moderate Negative Relationship
Academic Achievement	346	2.32	0.88		

Table 1 shows the r-value of -0.590 which indicated a moderate negative relationship between test anxiety and academic achievement of Geography students in the colleges of education in north-west, Nigeria. This indicates that students with higher test anxiety tend to have lower academic achievement. This also illustrates the existence of a moderate negative relationship between test anxiety and academic achievement of Geography students in colleges of education in north-west, Nigeria.

Table 2: Descriptive Statistics and Pearson Product Moment Correlation Coefficients on Gender Difference in the Relationship between Test Anxiety and Academic Achievement of Biology Students in Colleges of Education, Northwest Nigeria

Gender	N	Test Anxiety		Academic Achievement		r-value	Remark
		Mean	SD	Mean	SD		
Male	199	53.14	11.11	2.24	0.91	-0.591	Moderate negative relationship
Female	147	54.53	10.25	2.39	0.85	-0.608	Strong negative relationship

Table 2 indicate that male students ($r = -0.591$) exhibited moderate negative relationship between test anxiety and academic achievement of Geography students in colleges of education north-west, Nigeria, whereas female students ($r = -0.608$) showed a strong negative relationship. This suggests that for both male and female students, higher levels of test anxiety are associated with lower academic achievement, with relationship stronger among female students.

Hypothesis One: There is no significant relationship between students' test anxiety and academic achievement of Geography students in Colleges of Education Northwest Nigeria.

Table 3: Linear Regression Analysis on the Relationship between Test Anxiety and Academic Achievement of Geography Students in Colleges of Education, Northwest Nigeria

Model	N	R	R ²	DF	Beta Value	P –Value	Remark
a. Constant	346	0.590	0.349	345	-0.590	0.001	Sig.

b. Academic Achievement

Significant at $\alpha = P \leq 0.05$

The result of the linear regression analysis presented shows a linear correlation coefficient (R) of 0.590 and a coefficient of determination (R²) of 0.349 with a sample size of 357. This indicates a moderate negative relationship between test anxiety and academic achievement of Geography students in colleges of education, northwest Nigeria. The R² value implies that 34.9% of the variance in academic achievement is explained by test anxiety, while the remaining 65.1% may be attributed to other factors not included in the model. The standardized regression coefficient ($\beta = -0.590$) indicates that a one-unit increase in test anxiety leads to a decrease of 0.590 units in academic achievement. Since the p-value (0.001) is less than the 0.05 level of significance, the null hypothesis which stated that there is no significant relationship between test anxiety and academic achievement of Geography students in colleges of education, north-west, Nigeria is rejected. This implies that test anxiety significantly predicts academic achievement of Geography students in colleges of education, north-west, Nigeria.

Table 4: Fisher's Z-Test of Gender Difference in the Relationship between Test Anxiety and Academic Achievement of Geography Students in Colleges of Education Northwest, Nigeria

Gender	N	R	Fisher's z	SE	Z-Cal	Z-Cri(0.05)	Decision
Male	199	-0.591	-0.678	0.107	0.25	+/-1.96	Not Significant
Female	147	-0.608	-0.705				

Significant at $\alpha = P \leq 0.05$

The table 4 indicated that the correlation coefficient (r) for male students is -0.591, while that of female students is -0.608. These correlations were then transformed in to Fisher's Z values of -0.678 and -0.705 respectively. The standard error (SE) of the difference between the two Z values was 0.107, resulting in a calculated Z value (Z-cal) of 0.25. At the 0.05 level of significance, the critical Z value (Z-Cri) is +/-1.97. Since the calculated Z value (0.26) do not exceeds the critical Z value, this indicates the difference between the two correlations is not statistically significant. Therefore, the null hypothesis which says that, there is no significant gender difference in the relationship between test anxiety and academic achievement of Geography students in colleges of education in north-west Nigeria is retained.

Discussion of Findings

The findings of the study revealed a meaningful and consistent relationship among the variables investigated. The result of the analysis revealed a significant negative relationship between test anxiety and academic achievement. This indicates that as test anxiety increases, academic achievement tends to decrease. This finding agrees with the work of Onokpaunu (2020), Alemu and Feyssa (2020), Ifeyinwa and Osuafor (2021), Galle, Sarki and Aisha (2021), Nwuba, Obikezie, Chinwe, Agbo, Mbaegbu and Anyigor (2024), Okoyo and Ocheni, Okeke, Agah, Oguguo, Ene, Ezugwu and Asongo, (2024), Odo and Bilewa (2025) who reported strong negative relationship between test anxiety and academic achievement of students. The result also is in contrary with the findings of Ihekwoaba, Chinweub-eze and Ndurji (2020), Adem, Negano and Taye (2021), Seid, Negawo and Taye, (2021) Onohakpokaiye and Okigbo (2022), Kumo and Hassan (2025), who reported weak or no significant relationship between test anxiety and academic achievement of students.

The results also revealed no significant gender differences in the relationships between test anxiety and academic achievement of Geography students in colleges of education northwest, Nigeria. This finding is in line with the previous studies such as Owan, Bassey and Etuk (2020), Yawa, Balarabe and Mohammed (2021), Obiajuru (2023), Gidado, Kumo and Uchenna (2024) Okeke, Onyegeaba and Ene (2025), Ballah and Hanafi (2025), all of which reported no significant gender disparity in the relationship of test anxiety and academic achievement of students. However, the present finding contradicts earlier studies, such as, Aydin (2019), Okobia and Oji (2021), Esuong and Udo (2022), Altamimi and Altamimi (2025), who reported significant male and female differences in the relationship between test anxiety and academic achievement of students.

Conclusion

Based on the findings of the study, it was concluded that: there exists a significant negative relationship between students' test anxiety and academic achievement of geography students in colleges of education in north-west, Nigeria. However, there is no significant gender difference in the relationship between test anxiety and academic achievement of geography students in colleges of education in north-west, Nigeria.

Recommendations

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

1. Lecturers handling Geography students in colleges of education should improve their professional competence through seminars and workshops in order to enhance the quality of teaching and learning that will strengthen students' academic self concept.
2. College of education authorities should adopt assessment methods that reduce fear of failure and promote positive learning experiences through test anxiety reduction programmes to help students manage their examination anxiety effectively

3. Management of colleges running NCE programmes should implement flexible assessment and evaluation techniques in measuring students' academic success in order to reduce the negative effects of test anxiety.

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