



Students' Research Methodology as Correlate to their Project Scores among Undergraduates in Delta and Edo States

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ABSTRACT

The study examined Students' Research Methodology as Correlate to their Project Scores among Undergraduates in Delta and Edo States. Two research questions were raised and answered and two hypotheses were formulated and tested at 0.05 level of significance. The ex-post-facto research design was employed in this study. 8020 final-year undergraduates in Public Universities of the 2023/2024 academic session in Faculty of Education in Delta and Edo States was the population for this study. 381 undergraduates were drawn from the universities located in Delta and Edo States and this number of undergraduates served as the sample for the study. To select the 2 universities, the study employed stratified sampling technique. This sample size was computed using the Taro Yamane formula at 95% level of confidence. The research instruments were Achievement Exams Scores in Research Methodology and Project (AESRP) which were used as data in the study. To answer the research questions Coefficient of determination was used while linear regression and Fisher Z statistics were employed to test the null hypotheses at 0.05 alpha level. $P > 0.05$, $= 0.05$ or 0.05 . The finding of the study revealed that students' research methodology scores do not significantly correlate their project scores. Secondly the study found out that students' project ratings depending on gender do not significantly correlates their research methodology scores. Based on the findings of the study, the following recommendations were made: School administrators should determine possible factors, such the caliber of mentoring or supervision that could affect project scores. School administrators should examine the techniques employed to assess project work and research methodology. Make sure the tests appropriately represent the required abilities and understanding.

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INTRODUCTION

In the Nigerian higher education system, particularly at the undergraduate level, research projects are a core requirement for graduation across disciplines. Oluwatoyin (2022) reported that research project plays a major role in higher education, both in students' understanding of the course content and the consequent assessment of students' knowledge in the course. A good-quality research project offers healthy and right evidence that revolves around a novel question with a

feasible study methodology guided by systematic planning, time-based or realistic objectives, and sufficient or relevant data that makes a significant contribution to knowledge by solving a problem that existed in the real world (Editage Insights, 2019). It is usually based on a suitable rationale and can propose directions for future study. In conducting, reporting, and publishing good-quality research project, all relevant ethical guidelines should be practiced. Research project of good

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quality benefits society and contributes to the general development of mankind.

Research project writing is an exercise that systematically addresses the solution to an identified problem of study. It is usually guided by an approved format for conducting, writing, and presenting an organized research report. Although the format may slightly differ from one tertiary educational institution to another, The National Open University of Nigeria (NOUN) (2019) maintained that it is designed to guide students and their supervisors on the acceptable standards expected of them in conducting a research project of good quality. The students are assessed based on their performance in their final year project.

Project scores in Nigerian universities typically refer to marks or grade assigned to student's research project (Ossai, 2016). The scoring criteria can vary depending on the university and department, but it generally includes factors such as the quality of research, presentation, organization, and originality of the project. Students are usually assessed by a panel of examiners who evaluate their work and assign a score accordingly. The successful execution of a final-year research project requires a solid foundation in research methodology—typically taught as a compulsory course in most tertiary institutions (Rotimi et al., 2012).

Research methodology equips students with essential skills such as formulating research problems, developing hypotheses, understanding various research designs, data collection and analysis, and effective report writing. A researcher's chosen method for conducting research is known as a research methodology. Research methodology is a science that discusses an activity carried out to solve problems or as a development of science by using scientific methods. Research methodology can be a set of rules, activities, and procedures used by actors in a scientific discipline in observing a phenomenon or conducting a theoretical analysis with a series of scientific activities (Patel & Patel, 2019 & Ekwonna, et al., 2025). The goal of research methodology is to define and evaluate methods, shed light on their constraints and available resources, make their presuppositions and

outcomes clear, and connect their potential to the "frontiers of knowledge" twilight zone (Patel & Patel, 2019 & Ekwonna, et al., 2025)

A student's performance in a research methodology course is generally considered to be a strong predictor of the quality of their completed research projects. Strong performance in research methods courses indicates a solid foundation in research principles, design, and analysis, which directly translates to a more rigorous and well-executed research project. Conversely, poor performance in research methods may indicate a lack of understanding of core concepts and methodologies, potentially leading to flawed research design, inadequate data analysis, and ultimately, a lower quality final project. Students who demonstrate a strong grasp of research methodology are better equipped to design sound studies, select appropriate methods, and analyze data effectively. This strong foundation translates into research projects that are more methodologically sound, with well-defined research questions, appropriate designs, and robust analysis.

Research methodology courses often foster critical thinking skills, allowing students to evaluate existing research, identify potential biases, and interpret findings with greater nuance. Students who struggle with research methods may exhibit weaknesses in their ability to formulate research questions, select appropriate designs, or analyze data. This can lead to research projects with flawed methodologies, weak conclusions, and a general lack of rigor. Students who find research methods challenging also experience a decrease in confidence and engagement with the research process overall. While research methodology skills are important, other factors like motivation, access to resources, and individual learning styles can also play a role in the quality of a research project (Ekwonna, et al., 2025).

The way research methodology are taught can significantly impact student learning and performance. If the course is poorly designed or delivered, it may not adequately prepare students for their research projects. The availability of support and guidance from faculty

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and mentors is crucial for students throughout the research process. Strong performance in research methodology courses is a strong indicator of a student's ability to conduct high-quality research. However, it's important to recognize that other factors can also influence the final outcome. Therefore, a comprehensive approach that includes strong teaching, adequate support, and an understanding of individual differences is essential for maximizing student success in research endeavours

Despite the importance of this foundational course, there has been growing concern among educators, examiners, and academic supervisors regarding the observed disconnect between students' performances in research methodology courses and the quality of their completed research projects. The study carried out by Ugwu, et al. (2015) reveals that the university students have the knowledge of research writing but lacks the skills needed to carry it out effectively. This gap raises critical questions about whether competence in research methodology, as measured through academic scores, translates into the ability to conduct and report a high-quality research project.

In Delta and Edo States—home to several universities and colleges—a wide variation in undergraduate project performance has been noted, even among students who excelled in their research methodology coursework. This phenomenon suggests the need to investigate the strength and nature of the relationship between students' research methodology scores and their final project scores. Understanding this correlation is essential for curriculum planners, lecturers, and policymakers to identify whether mastery of research methodology contributes meaningfully to project execution, or whether other factors (e.g., attitude, supervision quality, or resource availability) play a more significant role.

Moreover, with increasing emphasis on research-based learning and academic excellence in Nigeria's tertiary institutions, especially in the South-South region, there is a pressing need to ensure that academic training aligns with expected research output. This study,

therefore, seeks to empirically explore whether students' academic achievement in research methodology can predict their performance in project writing, using undergraduates from Delta and Edo States as a case study. Such findings could inform improvements in pedagogy, curriculum delivery, and student support mechanisms in research training.

STATEMENT OF THE PROBLEM

The knowledge acquired from research methodology course is preparatory to project writing; therefore, one expects students to demonstrate mastery of research methodology during project writing. Experience appears to point to the fact that this is not the case, as students who performed poorly in Research Methodology course are seen to have high marks in their final project scores. This outcome in their project could be as a result of giving their project to someone who is experienced in writing project to assist them to write or a number of them sit back at home, generate data and carry out analysis which produces results and findings that are not of the real state of affairs in the study area.

Purpose of the Study

The main purpose of this study was to determine if Students' Research Methodology Correlates their Project Scores among Undergraduates in Delta and Edo States.

Specifically, this study aims to:

1. Identify the extent to which students' research methodology scores correlate their project scores
2. Assess the extent to which students' research methodology scores correlate their project scores based on gender.

Research Questions

To guide this study the following research questions were raised:

1. To what extent do students' research methodology scores correlate their project scores?
2. To what extent do students' research methodology scores correlate their project scores based on gender?



Hypotheses

The following hypotheses were formulated to guide the study;

1. Students' research methodology scores do not significantly correlate their project scores
2. Students' research methodology scores do not significantly correlate their project scores based on gender

LITERATURE REVIEW

Research methodology courses in Nigeria typically cover the basics of the research process, including the identification of a research problem, the development of a research design, and the collection and analysis of data (Ekwonna, et al., 2025). These courses also cover specific methods of data collection, such as surveys, interviews, and experiments. Students also learn about the ethical considerations involved in conducting research. Most research methodology courses are offered at the undergraduate level, though some universities also offer graduate-level courses. The exact curriculum and content of the course will vary depending on the specific institution and programme.

The aims of this course are threefold, namely to: (a) enable the students to understand the conceptual and theoretical knowledge of the field of scientific inquiry, which involves the gathering and analysis of relevant data; (b) expose the students to the various methods of executing a research project; and (c) equip them with the practical skills necessary for planning and executing research generally and research projects specifically in an academic institution (Ekwonna, et al., 2025). Dominguez and Judikis (2016) carried out a study on development of a research competence in university students of Mexico through blended learning. The study identifies the knowledge, skills and values that the research competence must contain and also identified the knowledge and skills that a university student must possess to be considered with the competence which are: scientific and technical knowledge, methodological knowledge, correct punctuation, grammar and spelling, procedures for asking and identifying issues of the research

project, procedures for planning the time needed to work on the research/formulation of research projects. Identifying and writing scientific hypothesis for research project, developing communication skills, developing goals and purposes, academic skills, skills to manage research amongst others.

Ugwu, et al. (2015) also in a study on the research competence needs of postgraduate students of science, technology, engineering and mathematics (STEM) education in research writing in Nigerian Universities found out that although it is the wish of the postgraduate students to carry out research writing with ease but the postgraduate students of Nigerian Universities show that they are deficient in most research writing competencies. The study reveals that the postgraduate students have the knowledge of research writing but lacks the skills needed to carry it out effectively. A longitudinal study carried out by Belgrave and Jules (2015) revealed that students found research challenging when it has to do with linking the concept of research and the process of research to their major hence, they reach their final year unable to write their research project.

The controversies on gender in academic achievement have continued to be inconclusive. It is likely that a student's performance in research methodology will correlate with their project scores, and this correlation might be influenced by gender. According to Oludipe (2012) who is of the view that male students perform better than their female counterparts while Ezeudu (2014) is of the view that there is no difference in academic achievement of gender groups in technical subjects. Studies have shown that girls tend to achieve better grades overall, while boys may perform better on standardized tests. Bandele and Adebule (2013), on their side, found that, irrespective of the type of gender and faculty of the students, they were similar in their performance in research work. Furthermore, some research suggests that male and female students utilize different study habits, which could affect their academic outcomes

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METHODOLOGY

The *expost-facto* research design was employed in this study. 8020 final-year undergraduates in Public Universities of the 2023/2024 academic session in Faculty of Education in Delta and Edo States was the population for this study. 381 undergraduates was drawn from the universities located in Delta and Edo States and this number of undergraduates served as the sample for the study. To select the 2 universities, the study employed stratified sampling technique. This sample size of 381 was computed using the Taro Yamane formula at 95% level of confidence. The research instrument were

Achievement Exams Scores in Research Methodology and Project (AESRP) which were used as data in the study. To answer the research questions Coefficient of determination was used while linear regression and Fisher Z statistics were employed to test the null hypotheses at 0.05 alpha level. $P > 0.05$, = 0.05 or 0.05.

RESULTS

Research Question 1:

To what extent do students' research methodology scores correlate their project scores?

Table 1: Coefficient of Determination of the extent to which students' research methodology scores correlate their project scores

Variable	N	<i>r</i>	<i>r</i> ²	<i>r</i> ² %	Decision
Research Methodology Scores Project Scores	241	0.03	.001	0.10	Weak

In Table 1 the analysis showed that, the coefficient of determination (R^2) was 0.01. This coefficient of determination (R^2) of 0.01 implies that research methodology scores accounts for up to 0.10% undergraduates' project scores in Delta and Edo States. From this result it is an indication that 99.9% of the variation in the undergraduates' project scores in Delta and Edo States is attributed

to other factors other than research methodology scores.

Research Question 2:

To what extent do students' research methodology scores correlate their project scores based on gender?

Table 2: Coefficient of Determination of the extent to which students' research methodology scores correlate their project scores based on gender

Variable	Gender	N	\bar{X}	SD	<i>r</i>	<i>r</i> ²	<i>r</i> ² %	Decision
Research Methodology Scores	Male	81	63.15	9.19	0.16	0.025	2.50	Weak
	Female	161	81.92	9.53				
Project Scores	Male	81	65.09	7.59				
	Female	161	63.92	5.58				

Table 2 showed the mean achievement score in research methodology for male was 63.15 and that of the female was 81.92, while the mean achievement scores for the male in Project was 65.09 and that of the female was 63.92. The table also showed a multiple regression which was conducted to examine whether students' research

methodology scores predict their project scores based on gender. The coefficient of determination (R^2) was 0.025, which indicates that 2.50% of the variation in students' project scores can be explained by the combination of research methodology scores and gender. This low R^2

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suggests that these two variables are weak predictors of project scores in this study.

Hypothesis 1:

Students' research methodology scores do not significantly correlate their project scores

Table 3: Regression Analysis on students' research methodology scores do not significantly correlate their project scores

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig
	B	Std. Error	Beta			
1 (Constant)	70.538	4.565			15.453	.000
Research score	-.032	.062	-.033		-.514	.607

$p < 0.05$ level of significance

From the above Table 3, the predictor, Research score ($B = 0.032$, $Beta = 0.033$, $t = 5.14$, $p = 0.607$). Since the p value calculated is greater than the alpha of 0.05 therefore the null hypothesis is accepted. This implies that students'

research methodology scores do not significantly correlate their project scores.

Hypothesis 2:

Students' research methodology scores do not significantly correlate their project scores based on gender.

Table 4: Pearson's correlation and Fisher's Z statistics of the moderating impact of gender on the relationship between Students' research methodology scores and their project scores

Variable	Gender	N	\bar{X}	SD	r	Fisher-Z	P-value	Decision
Research Methodology Scores	Male	81	63.15	9.19				
	Female	161	81.92	9.53	-0.145			
Project Scores	Male	81	65.09	7.59	-0.013	-0.7146	0.340	Accept
	Female	161	63.92	5.58				

Table 4 presents the Pearson correlation and Fisher's Z statistics used to examine the moderating effect of gender on the relationship between students' Research Methodology scores and their Project scores. From the descriptive statistics, male students ($N = 81$) had a mean Research Methodology score of 63.15 ± 9.19 , while their mean Project score was 65.09 ± 7.59 . Female students ($N = 161$), on the other hand, scored higher in Research Methodology with a mean of 81.92 ± 9.53 , but slightly lower in Project scores with a mean of 63.92 ± 5.58 . These figures indicate that female students performed better in Research

Methodology, whereas male students had marginally higher Project scores.

The Pearson correlation coefficient (r) between Research Methodology scores and Project scores for male students is -0.145 , indicating a weak negative relationship—suggesting that as male students' Research Methodology scores increase, their Project scores tend to decrease slightly. To assess whether this relationship differs significantly between male and female students, a Fisher's Z transformation was conducted, resulting in a Z value of -0.7146 with a p -value of 0.340 . Since the p -value is greater than the standard significance level of 0.05 , the null hypothesis is accepted, indicating that gender

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does not significantly moderate the relationship between Research Methodology scores and Project scores. This means that the strength and direction of the relationship between the two academic variables are statistically similar across genders, despite the differences in their average performance. In summary, while females scored significantly higher in Research Methodology and males slightly outperformed in Project scores, the correlation analysis confirms that gender does not have a significant moderating effect on the relationship between the two sets of scores.

DISCUSSION OF FINDINGS

This study examined Students' Research Methodology as Correlate to their Project Scores among Undergraduates in Delta and Edo States. The major findings after testing the null hypotheses were discussed in this section.

Extent to which students' research methodology scores correlates their project scores

The result from coefficient of determination indicates that there was a weak predictive model, making research methodology a weak predictor of project scores in this study among undergraduates in Delta and Edo states. The first finding of the study revealed that students' research methodology scores do not significantly correlate their project scores. Any student who can handle the course properly or performed well in the course of research methodology is supposed to do well in project writing. The reason for this result is that project writing is beyond classwork or the course of research methodology which is designed to help students with their project.

A student who achieved or did well in his or her project must have achieved that success by applying some principles outside the study of research methodology course such as beginning financial empowered, ability to source for material in the internet to address his or her project work or the type of project he or she carried out is not a complicated type of which materials are readily available. This finding is supported by Belgrave and Jules (2015) in their longitudinal study, it

revealed in their study that students found research challenging to understand the concept of research and link the research process to their major hence they reach their final year unable to write their research project paper.

Extent to which students' research methodology scores correlates their project scores based on gender

Secondly the study found out that students' project ratings depending on gender do not significantly correlates their research methodology scores. The reason for this is because gender disparities in academic performance might change based on the particular skill being evaluated, educational attainment, cultural setting, and instructional strategies used. This study result is related or similar to the findings of Bandele and Adebule (2013), on their side, found that, irrespective of the type of gender and faculty of the students, they were similar in their performance in research work.

CONCLUSION

Conclusively from this study, undergraduate project scores are not significantly influenced by research methodology proficiency. These metrics are further not influenced by gender, indicating that this aspect should be taken into account in educational techniques to improve student success in research projects.

RECOMMENDATIONS

The following recommendations were made based on the findings of this study:

1. School administrators should determine possible factors, such the caliber of mentoring or supervision that could affect project scores.
2. School administrators should examine the techniques employed to assess project work and research methodology. Make sure the tests appropriately represent the required abilities and understanding.



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