

Research Skills Acquisition among Postgraduate Education Students in Public Universities in Cross River State, Nigeria

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Abstract

This study assessed research skills acquisition among postgraduate education students in public universities in Cross River State, Nigeria. Ex post facto research design was adopted for the study, while stratified random sampling technique was used to select a sample of 400 from a population of 2,651 post graduate students in the two public universities in the area of the study. An instrument developed by the researcher and titled: “Research Skills Acquisition Questionnaire” (RSAQ), duly validated with reliability estimates of the sub-variables between .72 and .81 was used to collect data for the study. The data collected were subjected to statistical analysis using one sample t-test. The study revealed that postgraduate students’ research skills acquisition (problem identification, hypothesis formulation, literature review, data collection, data analysis and research reporting) was significantly high. Based on the findings, it was recommended among others that educators should prioritize research skills training and provide students with hands-on experience in research design, data collection, and analysis. Also, educators should provide targeted support to students who may be struggling with research skills.

Keywords: research skills acquisition, hypothesis formulation, literature review, data analysis, research reporting

Introduction

Research is a vital process that contributes to the advancement of knowledge, informs decision-making, and addresses societal challenges. By employing systematic methodologies, researchers can explore complex questions and develop solutions that enhance the understanding of the world. The ability to conduct research effectively is a cornerstone of postgraduate education, but many students in Nigerian public universities, particularly in Cross River State, face some challenges in developing these essential skills (Suleiman *et al.*, 2021). The importance of research notwithstanding, there is a serious challenge among scholars concerning the quality of thesis/dissertations prepared by postgraduate students in Nigerian universities. Researchers can attest that postgraduate

students' performances in research methods examination is not commensurate with the growing demand for good research that meet the local and national standards for publishing with the sole aim of contributing substantially to the knowledge bank. Some students develop negative attitude during the learning process, especially when it comes to the study of research and statistics (Smith *et al.*, 2020).

It has also been observed that research conducted by postgraduate students have not contributed to the expansion of world knowledge and improvement in the economy of the nation. This is not supposed to be so, since research results in general are the pillars on which new knowledge can be discovered and upheld. Postgraduate students are therefore supposed to be conversant with the expected research skills to be able to impact positively on the society (Bryman, 2016).

The importance of research cannot be overemphasized. Research drives the expansion of knowledge in various fields, contributing to scientific discoveries and technological innovations. For example, medical research has led to breakthroughs in treatments and vaccines, significantly improving public health (Smith *et al.*, 2020). Also, research provides data-driven insights that inform decision-making processes in government, business and education. Policymakers rely on research findings to develop effective policies and programmes (Nurtley *et al.*, 2013).

Furthermore, research plays a crucial role in addressing societal challenges, such as poverty, education, and environmental sustainability. Through applied research, practical solutions can be developed to tackle these pressing issues (Creswell, 2014). As a matter of fact, engaging in research cultivates critical thinking skills, encouraging individuals to analyze information, evaluate evidence, and construct well-reasoned arguments. These skills are essential in academic and professional settings (Facione, 2015).

However, what obtains these days among some postgraduate students leaves much to be desired. For instance, Obot (2014) observed that some students go to other universities or tertiary institutions, to obtain copies of already completed research work and present the same topics to their supervisors. Their supervisors who are usually not aware of the existence of such research topic, approve the topic and the supposed research student simply copies word for word, chapter to chapter and presents to his or her supervisor regardless of the consequence of plagiarism. This aspect of academic fraud is common among postgraduate students who are being guided by complacent supervisors. Also, it is common

these days to hear some lecturers telling their research students to “write all and submit”. “Write all and submit” instruction gives room to the students to engage in this kind of fraudulent academic practice (Obot, 2014). Furthermore, one of the most grievous of all the practices by students of research is the photocopying of old projects written by other persons either in the same department or in another institution and presenting same to their supervisor as their work (Eze, 2021).

In another instance, it is observed that some students undertaking research project do hire other persons believed to be more skillful in the art of project writing to write for them upon agreed fees. In this case, another student does the entire work. Such other “researcher” may know next to nothing of what is purportedly written as the content of the work from his/her client (Okebukola, 2012). In such a case, the supposed research student is concerned with fulfilling the conditions for graduation and not developing the research skills needed.

According to Dien (2017), another act exhibited by some research students which negates the correct practice of research occurs during data collection. Here, the researcher writes all that is to be written. However, instead of gathering data from the field or through experiment for analysis, he or she formulates or cooks up arbitrary or fake data on his/her own for the research. Research is intended to make new discovery. However, in this case such research student knows even the conclusion of his or her work before he/she starts the research work. Thus, he or she manipulates his or her data to suit his or her purpose.

To address the challenges students encounter in carrying out research, universities have established research support services. These services often include dedicated research offices that provide resources, workshops, and one-on-one consultations. They have also made significant impact in offering internal grants and scholarships specifically designed to support students’ research.

Furthermore, the universities have mentorship programmes which play an essential role in guiding students through the research process. By pairing students with faculty mentors, universities facilitate the transfer of knowledge and expertise. Mentors not only provide academic guidance but also help students navigate the complexities of the research landscape, including networking and professional development.

Governments also play crucial roles in supporting student research through various initiatives, like the offer of grants, scholarships, and research fellowships aimed specifically at supporting students’ research projects. Governments have also increasingly endorsed

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open access initiatives, advocating for legislation that promotes unrestricted access to research publications.

Despite the interventions and efforts by the universities and governments towards combating the challenges enumerated above, which students face in carrying out research, the challenges still seem to be unresolved; hence, the need to conduct a thorough assessment of the research skills acquisition among postgraduate students in public universities in Cross River State, providing valuable insights that can inform curriculum development, faculty training, and resource allocation in the pursuit of academic excellence.

The researcher reviewed some studies that are focused on possession of the earlier stated research skills as they provide insight to the present study. On identification of problems skill, Adams (2012) evaluated research skills acquisition of university students in Akwa Ibom State. In order to achieve this, six hypotheses were formulated and tested at .05 alpha level. The design adopted for the study was survey method. The sample for the study consisted of 350 final year students of University of Uyo in 2011/2012 academic session. The sample was selected using stratified and simple random sampling techniques, specifically proportional method, and purposive sampling technique. The instrument used for this study was an adopted 40 items, 5 options rating scale tagged Research Skills Acquisition Questionnaire (RSAQ). The instrument was subjected to reliability measure using test-retest method which gave indices of .45 to .62. The data collected were subjected to statistical analysis using the population t-test. The results obtained, amongst others, revealed that the extent of identification of problem in research skills acquisition among the university students is significantly high.

On formulation of hypothesis skill, Alozie (2018) carried out a study titled: "Assessment of environmental factors and research skills acquisition of university students in Rivers State, Nigeria." In order to achieve this, six hypotheses were formulated and tested at .05 alpha level. The design adopted for the study was the survey design. The sample was selected using stratified and simple random sampling techniques. The instrument used for this study was an adapted 35 items, 7 options rating scale tagged Research Skills Acquisition Questionnaire (RSAQ). The instrument was subjected to reliability measure using test-retest method which gave indices of .63 to .80. The data collected were subjected to statistical analysis using the population t-test, independent t-test and a one-way analysis of variance (ANOVA). The results obtained revealed, amongst, others, that the extent of research skills

acquisition in terms of formulation of research hypotheses among the university students is significantly high.

On literature review skill, Uzoechi (2015) carried out a study to assess research skills acquisition of university students in Imo State of Nigeria. In order to achieve this, six hypotheses were formulated and tested at 0.05 alpha level. The design adopted for the study was the ex-post facto. The sample for the study consisted of 456 final year students of Imo State University and Federal University of Technology, Owerri in 2013/2014 academic session. The sample was selected using stratified and simple random sampling techniques. The instrument used for this study was an adapted 40 items, 5 options rating scale tagged Research Skills Acquisition Questionnaire (RSAQ). The instrument was subjected to reliability measure using test-retest method which gave indices of .68 to .82. The data collected were subjected to statistical analysis using the population t-test, independent t-test and a one-way analysis of variance (ANOVA). The results obtained revealed, amongst others, that the extent of research skills acquisition in terms of literature review among the university students is significantly high. This finding may confirm or contradict the findings of other scholars with respect to research skills acquisition in terms of literature review.

On data collection skill, Obiano (2017) carried out a study titled assessment of research skills acquisition of university students in Imo State, Nigeria. In order to achieve this, seven hypotheses were formulated and tested at 0.05 alpha level. The design adopted for the study was the ex-post facto. The sample for the study consisted of 618 final year students of Imo State University and Federal University of Technology, Owerri in 2015/2016 academic session. The sample was selected using stratified and simple random sampling techniques. The instrument used for this study was an adapted 35 items, 5 options rating scale tagged Research Skills Acquisition Questionnaire (RSAQ). The instrument was subjected to reliability measure using test-retest method which gave indices of .60 to .81. The data collected were subjected to statistical analysis using the population t-test. The results obtained amongst others, revealed that the extent of research skills acquisition in terms of data collection among the university students is significantly high.

A study on data analysis by Emechebe (2020) was to assess research skills acquisition among tertiary institution students in Anambra State of Nigeria. In order to achieve this, six hypotheses were formulated and tested at 0.05 alpha level. The design adopted for the study was the survey method. The sample for the study consisted of 456 final year students in tertiary institutions in Anambra State in 2018/2019 academic session. The sample was selected using stratified and simple random sampling techniques. The instrument used for

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this study was an adapted 30 items, 4-options rating scale tagged Employability Skills Acquisition Questionnaire (ESAQ). The data collected were subjected to statistical analysis using the population t-test, independent t-test and a one-way analysis of variance (ANOVA). The results obtained revealed, amongst others, that the extent of research skills acquisition in statistical data analysis skills among the tertiary institution students was significantly high.

On research reporting skill, Obot (2014) examined environmental factor and research skills acquisition among graduate students in federal universities in Akwa Ibom and Cross River State of Nigeria. In order to achieve this, five hypotheses were formulated and tested at .05 alpha level. The design adopted for the study was the survey method. The sample for the study consisted of 800 graduate students from the participating universities. The sample was selected using stratified and simple random sampling techniques. The instrument used for this study was 7 option rating scale tagged Environmental Factor and Research Skills Acquisition Questionnaire (EFRSAQ). The instrument was subjected to reliability measure using Cronbach Alpha method which gave indices of .64 to .87. The data collected were subjected to statistical analysis using the population t-test, independent t-test and a one-way analysis of variance (ANOVA). The results obtained revealed, amongst others, that the acquisition of research skills in terms of research reporting by graduate students among the university students is significantly high.

Hypothesis

H₀₁: Acquisition of research skills among postgraduate students in public universities in Cross River State is not significantly high with respect to:

- i. Problem identification
- ii. Hypothesis formulation
- iii. Literature review
- iv. Data collection
- v. Data analysis
- vi. Research reporting
- vii. Overall research skills

Methodology

The research design adopted for this study was the ex post facto. The area of this study was Cross River State, Nigeria. Cross River State is one of the 36 states in Nigeria with the state capital in Calabar, where the two universities under investigation are situated. The

population of the study was made up of all postgraduate students in faculties of education in public universities in Cross River State. The universities that fall into this category are University of Calabar, Calabar (UNICAL) and University of Cross River State (UNICROSS). This was made up of 1,763 postgraduate students in UNICAL and 888 postgraduate students in UNICROSS, making a total of 2,651 postgraduate students in the 2023/2024 academic session. Then, proportionate stratified random sampling was used to draw approximately 15% of the postgraduate students from the departments in all the faculties of education. A sample of 400 students was used for the study.

The instrument used for data collection in this study was a questionnaire titled: “Research Skills Acquisition Questionnaire” (RSAQ) developed by the researcher and validated by experts in Research, Measurement and Evaluation. It was sub-divided into two sections, section A and Section B. Section A elicited responses on personal information. Section B elicited information on assessment of research skill acquisition among postgraduate students in public universities in Cross River state. It consisted of six parts: namely, problem identification, formulation of hypothesis, literature review, data collection, data analysis and research reporting, with each section consisting of five (5) items, giving a total of thirty (30) items. The response options and scoring of the instrument included Very High Extent (VHE) - 4 points, High Extent (HE) – 3points, Low Extent (LE) – 2, and Very Low Extent (VLE) - 1.

The reliability coefficient of each of the six sub-sections and for the overall Section B were established using Cronbach Alpha reliability. The reliability estimates ranged from .72 to .81 respectively which were considered high enough to make the instrument reliable for use in the study. The 400 copies of the questionnaire administered were retrieved, collated and the data therefrom was analyzed using one sample t-test statistical tool.

Presentation of results

Ho1: Acquisition of research skills among postgraduate students in public universities in Cross River State is not significantly high with respect to:

- i. Problem identification
- ii. Hypothesis formulation
- iii. Literature review
- iv. Data collection
- v. Data analysis
- vi. Research reporting
- vii. Overall research skills

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There is only one variable in this hypothesis, which is acquisition of research skills in terms of problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and overall acquisition of research skills. The researcher reasoned that for a postgraduate students's acquisition of research skills to be considered significantly high, his/her acquisition of research skills level should be significantly higher than the expected level represented by a reference mean score. This reference mean score was obtained by multiplying the average of the scores assigned to the four response categories for each of the items on the questionnaire by the number of items used to measure each type of the acquisition of research skills (which was 5).

$$\begin{aligned} \text{Thus, the Reference mean score} &= \frac{(4+3+2+1)}{4} \times 5 \\ &= 12.5 \end{aligned}$$

Testing hypothesis 1 involved comparing the sample mean on each of the six dimensions of acquisition of research skills with the reference mean score of 12.5. The statistical technique deployed to do this comparison was the one sample t-test. The results of the analyses are presented in Table 1.

Table 1: One sample t-test of acquisition of research skills in terms of problem identification; hypothesis formulation, literature review, data collection, data analysis, research reporting and the overall acquisition of research skills

Acquisition of research skills	N	Observed Mean	Std. Deviation	Reference	t-value	p-value
				Mean		
Problem identification	400	17.63	1.74	12.5	57.0	.000
Hypothesis formulation	400	17.63	1.71	12.5	57.0	.000
Literature review	400	17.66	1.63	12.5	64.5	.000
Data collection	400	17.67	1.63	12.5	63.75	.000
Data analysis	400	17.60	1.75	12.5	56.67	.000
Research reporting	400	17.64	1.63	12.5	64.25	.000
Overall acquisition of research skills	400	105.80	9.88	12.5	61.60	.000

Level of significance = .05; df = 399

The results of the population t-test for the different dimensions of the dependent variable were as follows: problem identification had a mean of 17.63 t-value of 57.0 and P<.05; hypothesis formulation had a mean of 17.63, t-value of 57.0 and P<.05; literature review

had a mean of 17.66, t-value of 64.5 and $P < .05$; data collection had a mean of 17.67, t-value of 63.75 and $P < .05$; data analysis had a mean of 17.60, t-value of 56.67 and $P < .05$; research reporting had a mean of 17.64, t-value of 64.25 and $P < .05$.

The overall acquisition of research skills result had df of 399, mean of 105.80, t-value of 61.60 and $P < .05$. Therefore, the null hypothesis is rejected. This implies that the level of acquisition of research skills in terms of problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and overall acquisition of research skills are significant high.

Discussion of the findings

The result of the hypothesis of the study indicated that the acquisition of research skills in terms of problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and the overall acquisition of research skills among students in public universities in Cross River State, Nigeria is significantly high. This means that the sample have acquired more research skills than expected. This can be justified by the constructivist learning theory which states that individuals actively construct their own understanding and knowledge through experiences and interactions with their environment. Since research work is the cornerstone of the postgraduate education, it is expected that the postgraduate students should be conversant with the processes involved in carrying out effective research work.

The finding of this study is in agreement with the following researchers whose studies revealed a significant high extent of research skills among postgraduate students, in terms of identification of problems (Adams, 2012), formulation of hypothesis (Alozie, 2018), literature review (Uzoечи, 2015), data collection (Obiano, 2017), data analysis (Emechebe, 2020) and research reporting (Obot, 2014). However, this study disagrees with the studies of Suleiman *et al.* (2021) who found that many university students struggle with various aspects of research process like identification of problems, hypothesis formulation, literature review, data collection, data analysis and research reporting.

The finding of the current study is in agreement with the assertion of Piaget Constructivist theory that individuals actively construct their own understanding and knowledge through experiences and interactions with their environment. Postgraduate students should be encouraged to engage in hands-on research activities, discussions, and peer feedback by which students can build on their prior knowledge and integrate new concepts more effectively, because postgraduate students who are often involved in complex research

projects, benefit from a learning environment that encourages exploration, collaboration, and critical thinking.

Conclusion

This study assessed research skills acquisition among postgraduate education students in public universities in Cross River State, Nigeria. The findings revealed that students in the study area have a high acquisition of research skills, including problem identification, hypothesis formulation, literature review, data collection, data analysis, and research reporting. The high acquisition of research skills among students in the study area is a positive development, as research skills are essential for academic and professional success. Overall, this study provides valuable insights into the acquisition of research skills among students in public universities in Cross River State, Nigeria. The findings of the study also underscore the importance of research skills in today's knowledge-driven world. As students acquire research skills, they become equipped to contribute to the body of knowledge in their respective fields and address real-world problems. Therefore, it is essential for educators and policymakers to prioritize research skills development and provide students with the necessary support and resources to excel in research.

Recommendations

1. Educators should prioritize research skills training and provide students with hands-on experience in research design, data collection, and analysis.
2. Educators should provide targeted support to students who may be struggling with research skills in all areas of research methodology.

References

- Adams, A. A. (2012). *Research skills acquisition among university students in Akwa Ibom State, Nigeria* [Unpublished M.Ed thesis]. University of Uyo, Akwa Ibom State.
- Alozie, L. R. (2018). *Assessment of Environmental factors and research skills acquisition of university students in Rivers State* [An unpublished M.Ed thesis]. Rivers State University, Port Harcourt.
- Bryman, A. (2016). *Social Research Methods* (5thed). Oxford University Press.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). Sage Publications.
- Dien, S. I. (2017). *Assessment of research skills acquisition among undergraduates in Universities in Cross river States, Nigeria* [An unpublished M.Ed thesis]. University of Calabar, Calabar.

- Emechebe, E. F. (2020). *Assessment of research skills acquisition among tertiary institution students in Anambra State of Nigeria* [An unpublished MEd. Thesis]. Nnamdi Azikiwe University, Awka.
- Eze, E. A. (2021). *Assessment of research skills of students in Cross River State Health Training Institutions* [An unpublished MEd. Thesis]. University of Calabar, Calabar.
- Facione, P. A. (2015). *Critical Thinking: What It Is and Why It Counts*. Insight Assessment. Retrieved on 07/02/2025 from <https://courseware.e-education.psu.edu>
- Nurtley, A., Ojo, J., & Ojo, A. (2013). *Research Methodology, A step-by-step Guide for Beginners* (2nd ed.) Lagos: University of Lagos publication.
- Obiano, E. O. (2017). *Assessment of research skills acquisition of University students in Imo State Nigeria* [An unpublished B.Sc (Ed) Project]. University of Nigeria, Nsukka.
- Obot, I. F. (2014). *Environmental factors and research skills acquisition among graduate students in Federal Universities in Akwa Ibom and Cross River States, Nigeria* [An unpublished M.Ed thesis]. University of Calabar, Calabar.
- Okebukola, P. (2012). *The State of University Education in Nigeria*. Abuja: National University Commission.
- Smith, R. D., Johnson, M. & Williams, A., (2020). The Impact of Research on Health Policy and Practice: A Review of the Evidence. *Health Policy, 124*(6), 641-648.
- Suleiman, S., Adamu, I., & Zubairu, U. (2021). Digital Literacy and Research Competence: A Study of Postgraduate Students in Nigeria. *African Journal of Library, Archives and Information Science, 31*(2), 153-165.
- Uzoechi, R. S., (2015). *Assessment of research skills acquisition of students in universities in Imo State Nigeria* [An unpublished B.Sc project]. Federal University of Technology, Owerri, Imo State, Nigeria.