

Research Skills Acquisition by Undergraduates in Universities in Cross River State, Nigeria: A Comparative Study

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Abstract

This study assessed research skills acquisition of undergraduate students in University of Calabar and Cross River University of Technology. Survey research design was adopted for the study. A sample of 618 students was drawn from a population of 6178 students, using stratified random sampling technique. An instrument titled “Research Skills Acquisition Questionnaire” (RSAQ) was used to collect data for the study. The instrument was duly validated and the reliability estimates of 0.71 to 0.78 were established. The data collected were subjected to statistical analysis using independent t-test. The results showed that University of Calabar undergraduates do not significantly differ from their Cross River University of Technology counterparts in their acquisition of research skills, with respect to, problem identification, literature review, research design and instrumentation, sampling and data collection, analysis and interpretation of results, author citing and referencing, and overall research skills. Recommendations were made in consideration of the findings of this study.

Keywords: Research skills acquisition, problem identification, literature review, author citing and referencing.

Introduction

The production of skilled manpower necessary for effective functioning of the society is the mandate of universities all over the world. The courses they offer and their training programmes are tailored toward achieving this singular mandate. The extent to which they achieve this mandate successfully is what distinguishes one university from the other. It is on these bases that these universities are ranked and compared. Those who can meet up this mandate successfully and effectively are ranked higher than others.

In essence, meeting this mandate involves imparting requisite research skills, knowledge, attitude, to enable students to realize their potential and become self-reliance which is one of the major goals of university education in Nigeria (Federal Republic of Nigeria, 2013). University students are expected to acquire both physical and intellectual skills, which will enable them to be self-reliant and useful members of the society, and also promote and encourage scholarship and community service. It is common knowledge that equipping students with requisite research skills in the university will help them to be self-reliant, relevant and functional members of the society whether employed by government or self-employed. If research skills are acquired and applied appropriately, policy makers and other beneficiaries will have confidence in the outcome of researches to solve problems (Mike, 2014).

In Nigerian universities and universities in other parts of the world, some students lack the basic skills to outline knowledge and this had led to the collapse of adequate acquisition of research skills in solving problems in the society. There is the serious concern by scholars concerning the quality of research projects prepared by undergraduate students in universities (Okebukola, 2002). Okebukola also noted that university students performances in research methods examination is not commensurate with the growing demand for good research that meets the local and national standards for publishing, with the sole aim of contributing substantially to the knowledge bank. Some even develop negative attitude during the learning process, especially when it comes to the study of Research and Statistics. Lack of commitment to course of study can adversely affect the students' progress in the acquisition of research skills and in solving societal problems.

It has also been observed that there is an ample evidence to show that research conducted by higher education (especially undergraduate) has not contributed to the expansion of world knowledge, and improvement in the economy of a nation (Bako, 2005). This is not supposed to be so. Since research results generally are the pillars on which new knowledge can be discovered and upheld, therefore students are supposed to be conversant with the expected research skills during and after graduation to be able to impact positively in the society.

In order therefore to address the problem of quality of projects prepared by undergraduate students in Nigerian universities, there is the need to provide empirical data through research on various areas of skills that undergraduate students experience difficulty. This study is, therefore, to make an assessment of undergraduate research skills acquisition in terms of problem identification, organization of literature review, instrument construction and validation, data collection, data analysis, interpretation of results, author citing and referencing.

Articulation of the research problem is a basis on which all the other items in the whole research procedure and presentation are to be made. Indeed, problem identification is the first step in problem solving effort. Problem identification involves the background research skills of imagination and creativity, logic and reasoning, conceptual thinking and scientific experimentation. It also involves searching for different approaches to a problem or situation and trying to examine issues from a different point of view (Cleveland, 2014). The acquisition of research skills in articulating the research problem is the ability to define, analyse problems, create solutions, evaluate them and choose the best solution for a particular context (Opie, 2006). The acquisition of research skills in problem identification, therefore, guides the researcher to examine the consequences of a particular solution against another.

Review of literature is an exercise in which a researcher critically examines and searches knowledge that exists on a subject or problem under investigation. Eze (2011) assessed research skills of students in Cross River State Health Training Institutions. The study used a sample of 230 projects from the various Health institutions in Cross River State, Nigeria, with 110 projects from College of Health Technology Calabar, 51 projects from School of Nursing Calabar, 50 from school of Health Information Management Calabar, and 19 projects from School of Midwifery Calabar, randomly selected using stratified random sampling procedure and systematic sampling procedure. The research design was inferential survey. Data collected for the study was done using the checklist assessment research developed in form of questionnaire. In all, five null hypotheses were tested using population t-test at .05 level of significance. The results of the data analysed showed that amongst other research skills, students' application of research skills, in terms of literature review is significantly high, but did not depend on the institutions.

Uzoечи (2015) carried out a study to assess research skills acquisition of university students in Imo State of Nigeria. In order to achieve this, six null hypotheses were formulated and tested at .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-item five-option rating scale tagged "Research Skills Acquisition Questionnaire (RSAQ)." The instrument was subjected to reliability measurement using test-retest method which gave an index of .68 to .82. The data collected were subjected to statistical analysis using the population t-test, independent t-test and one-way analysis of variance (ANOVA). The results obtained amongst others, revealed that

the extent of research skills acquisition in terms of literature review among the university students does not depend on the type of the institution.

Obot (2014) examine environmental factor and research skills acquisition among graduate students in federal universities in Akwa Ibom and Cross River States of Nigeria. In order to achieve this, five null hypotheses were formulated and tested at .05 alpha level. The design adopted for the study was survey. The sample for the study consisted of 800 graduate students from each of 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 Factors and Research Skills Acquisition Questionnaire (EFRSAQ). The instrument was subjected to reliability measure using Cronbach Alpha method which gave an index 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 amongst others, revealed that the acquisition of research skills in terms of reference skills by graduate students among the university students is significantly high and not a function of the proprietorship of the institution.

Tom (2013) assessed research skills acquisition of University students in Jos, Plateau State of Nigeria, and found out that the extent of research skills acquisition in terms of, research design/instrumentation among the students is significantly high. Ibok (2015) conducted a study to assess research skills acquisition among undergraduate students in Federal University of Technology Owerri (FUTO) and Imo state University (IMSU) of Nigeria. In order to achieve this, eight hypotheses were formulated to guide the study and tested at .05 alpha level. The design adopted for the study was the survey. The sample for the study consisted of 606 final year students in the two institutions in 2014/2015 academic session. The sample was selected using stratified and simple random sampling techniques. The instrument used for data collection for the study was an adapted 40-item, four-option rating scale tagged “Research Skills Acquisition Questionnaire (RSAQ). The data collected were analysed using population t-test, independent t-test, and one way analysis of variance (ANOVA). The results obtained, amongst others, revealed that final year students in Federal University of Technology Owerri (FUTO) do not significantly differ from their counterparts in Imo State University (IMSU) in research skills acquisition in problem identification, literature review, research design/instrumentation, sampling and data collection, analysis and interpretation of results, author citing and referencing. What the situation is, in these respects, between University of Calabar (UNICAL) and Cross River University of Technology (CRUTECH) Calabar was the concern of this study.

Hypothesis

Undergraduates in University of Calabar (UNICAL) do not significantly differ from their counterparts in Cross River University of Technology (CRUTECH) in acquisition of research skills, with respect to:

- i. Problem identification
- ii. Literature review
- iii. Research design and instrumentation
- iv. Sampling and data collection
- v. Analysis and interpretation of results
- vi. Author citing and referencing
- vii. Overall research skills

Methodology

The research design adopted for this study was survey. 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 6,179 final year undergraduate students in 2015/2016 academic session (3840 students from UNICAL, and 2339 from CRUTECH). Stratified and simple random sampling techniques were used to select 618 final year students (384 from UNICAL and 234 from CRUTECH) for the study.

The instrument for data collection was tagged “Research Skills Acquisition Questionnaire (RSAQ)” constructed by the researchers and validated by experts in Research, Measurement and Evaluation. The instrument had two sections, A and B. Section A elicited responses on personal information. Section B was designed to elicit responses on assessment of research skills acquisition among final year undergraduate students from the two universities in the state. It consisted of six sub-sections with five items each namely: problem identification, literature review, research design/instrumentation, sampling/data collection, analysis/interpretation, and author citing/referencing. Section B had 30 items in all. The reliability coefficient of each of the six sub-sections and for the overall Section B were established using Cronbach alpha method. The reliability estimates ranged from .71 to .78. These estimates were considered high enough to warrant the use of the instrument for the study. The 618 copies of the questionnaire administered were retrieved, collated and the data therefrom was analysed using independent t-test statistical tool.

Presentation of results

Hypothesis: Undergraduates in University of Calabar (UNICAL) do not significantly differ from their counterparts in Cross River State University of Technology (CRUTECH) in their acquisition of research skills, with respect to:

- i. Problem identification
- ii. Literature review
- iii. Research design/instrumentation
- iv. Sampling and data collection
- v. Analysis/interpretation of results
- vi. Author citing/referencing
- vii. Overall research skills

The independent variable in this hypothesis is institution (UNICAL/CRUTECH) while the dependent variable is research skills, in terms of, problem identification, literature review, research design/instrumentation, sampling/data collection, analysis/interpretation of results, author citing/referencing, and overall research skills, among University students in Cross River State, Nigeria. In testing this hypothesis, the mean scores of the research skills of University of Calabar (UNICAL) students for the six sub-variables were compared with the mean scores of the Cross River University of Technology (CRUTECH) undergraduate students. The statistical analysis technique used to test this hypothesis was the independent t-test. The results of the analysis are presented in Table 1.

Table 1: Independent t-test analysis of UNICAL students and CRUTECH students on research skills acquisition

Variable	Institution	N	Mean	SD	t-value	Sig.
Problem identification skills	UNICAL	384	13.50	7.21	.146	.132
	CRUTECH	234	13.42	6.21		
	Total	618	16.51	8.31		
Literature review skills	UNICAL	384	14.91	6.11	1.187	.301
	CRUTECH	234	14.24	6.41		
	Total	618	17.51	9.12		
Research design/Instrumentation skills	UNICAL	384	15.21	6.26	1.436	.323
	CRUTECH	234	14.98	5.19		
	Total	618	18.22	9.31		
Sampling/data collection skills	UNICAL	384	14.01	8.26	.032	.116
	CRUTECH	234	13.99	7.11		
	Total	618	18.52	9.61		

Analysis/interpretation of results	UNICAL	384	15.91	7.41	1.257	.314
	CRUTECH	234	15.21	6.31		
	Total	618	18.51	9.59		
Author citing/referencing	UNICAL	384	15.21	7.69	.177	.308
	CRUTECH	234	15.11	6.21		
	Total	618	18.91	8.77		
Overall research skills	UNICAL	384	19.15	10.62	1.227	.313
	CRUTECH	234	18.15	9.31		
	Total	618	20.16	11.13		

$p < .05$ alpha level; $df = 616$;

The results presented in Table 1 shows the independent t-test analysis of mean scores of University of Calabar (UNICAL) students for the six sub-skills and the overall research skills compared with the mean scores of the Cross River University of Technology (CRUTECH) students. From Table 1, the absolute values of calculated t for problem identification ($t=.146$), literature review ($t=1.187$), research design/instrumentation ($t=1.436$), sampling/data collection ($t=-.032$), analysis/interpretation of results ($t=1.257$), author citing/referencing ($t=.177$), and overall research skills ($t=1.227$) are each less than the critical t-value of 1.960 at .05 alpha level with 616 degree of freedom; the null hypothesis was therefore retained. This, therefore, implies that undergraduate students in University of Calabar (UNICAL) do not significantly differ from their counterparts in Cross River University of Technology (CRUTECH) in their acquisition of research skills, in terms of, problem identification, literature review, research design/instrumentation, sampling/data collection, analysis/interpretation of results, author citing/referencing, and overall research skills.

Discussion of findings

University of Calabar (UNICAL) undergraduates do not significantly differ from their Cross River University of Technology (CRUTECH) counterparts in their acquisition of research skills in terms of problem identification, literature review, research design and instrumentation, sampling and data collection, analysis and interpretation of results, author citing and referencing, and overall research skills.

The result of this study is in agreement with the findings of Eze (2011) and Uzoechi (2015) that possession of research skills does not depend on institution of study. Obot (2014) stated that the development of research skills in students does not follow any laid down pattern; sometimes the procedures are haphazard. The results also supports Ibok (2015) who examined the evaluation of research skills acquisition

between final year students in Federal University of Technology Owerri (FUTO) and Imo State University (IMSU) and found no significant difference.

The result of this study is somewhat not surprising because of the possible cordial relationships and/or interactions among both teachers and the students of the two universities. Lecturers of both universities are seen to cross-fertilize appropriately as part-time, adjunct, and sabbatical lecturers in the two universities. Also, the students of the two universities are in close proximity, as they visit or stay together in the same residential homes, off campus which enables exchange of ideas (academic or otherwise). Hence, the outputs of their academic endeavour including acquisition of research skills are similar.

Conclusion

Undergraduate students of University of Calabar, Calabar and Cross River University of Technology, Calabar do not significantly differ from one another in acquisition of research skills, in terms of, problem identification, literature review, research design and instrumentation, sampling and data collection, analysis and interpretation of results, author citing and referencing, and overall research skills. However, by and large undergraduates of both universities possess research skills that are high/good enough for their investigation into any problem they may have observed in the society despite some of the factors militating against their successful acquisition of research skills.

Recommendations

1. Effective teaching and learning of research methods courses by lecturers and students respectively in the two universities should be sustained and improved upon.
2. The university authority should evaluate and encourage students in research skills acquisition in all areas of research methodology.

References

- Bako, S. (2005). University research and development in Nigeria: Time for a pragmatic shift. Paper presented at 11th general assembly of CIRDESRIC, on Rethink African Development: Beyond Impasse, Nsukka, Nigeria-February 3rd – 7th.
- Cleveland, V. P. (2014). Research skills of graduate students and research findings usage. *Journal of Learning and Behaviour*, 24, 671-684.
- Eze, E. A. (2011). Assessment of research skills of students in Cross River State Health Training Institutions. Unpublished M.Ed thesis, University of Calabar, Nigeria.
- Federal Republic of Nigeria (2013). *National policy on education*, Abuja: NERDC Press.

- Ibok, E. E. (2015). Environmental factors and research skills acquisition among undergraduate students in tertiary institutions Imo State, Nigeria. *Journal of Learning and Behaviour*, 8(4), 671-684.
- Mike, U. (2014). *Importance of skills acquisition: Dynamics of skills acquisition: A constraints-led Approach*. New York: Macmillan.
- Obot, I. F. (2014). Environmental factors and research skills acquisition among graduate students in Federal Universities in Akwa Ibom and Cross River States, Nigeria. Unpublished M.Ed Thesis, University of Calabar, Calabar.
- Okebukola, P. (2002). *The state of university education in Nigeria*. Abuja: National Universities Commission.
- Opie, O. N. (2006). Path analytic study of institutional variables and undergraduate students' attitude towards research projects in the University of Calabar, Nigeria. Unpublished M.Ed Thesis, University of Calabar, Calabar.
- Tom, C. M. (2013). Assessment of research skills acquisition of University students in Jos Plateau State, Nigeria. Unpublished M.Ed Thesis, University of Jos, Nigeria.
- Uzoечи, L. (2015). Assessment of research skills acquisition of university students in Imo State, Nigeria. Unpublished M.Ed. Thesis, Federal University of Technology, Owerri.