

Evaluation of Classroom Dynamics as Correlates of Academic Performance in Educational Research and Statistics among Pre-service Teachers in College of Education, Lagos State

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Abstract

This study investigated classroom dynamics as correlates of academic performance in Educational Research and Statistics among Pre-service Teachers in College of Education, Lagos State. The core objective of this work is to justify if classroom dynamics is a pivotal determinant of academic performance of pre-service teachers in teacher training institution. Four hypotheses were raised to guide the focus of the study as target population was pre-service teachers in college of education, Lagos State. A sample of three hundred (300) level Pre-service teachers was selected from five schools in the institution. Multi-staged technique was used to select 20 departments from 64 accredited departments in the institution. Two instruments, 2022/2023 Teacher Made Achievement Test on Educational Research and Statistics containing 60 items on 4-multiple options and a self-structured Classroom Dynamics as Determinants of Academic Performance of Pre-service Teachers Questionnaire were used to generate data. Content validity was determined by two experts in the department of Educational Evaluation and Counselling Psychology, University of Benin. With the use of Cronbach-alpha a reliability form, an index of 0.889 and 0.781 was derived on 50 students from Federal College of Education, Akoka, Lagos not part of this work. The index value shows that internal consistency was achieved. Data generated was analysed using correlation analysis tested at significant level of 0.05. The study revealed that classroom dynamics not only significantly correlate with pre-service teachers' academic performance, use of instructional materials, classroom management and teacher's observation skills also contribute positively to their academic performance. The study then concluded that teachers' observation skills, classroom management and use of instructional materials are good predictors of students' performance in Educational Research and Statistics.

Keywords: Evaluation, Classroom Dynamics, Academic Performance, Pre-service Teachers, Educational Research and Statistics

Introduction

In College of Education, the teaching of research and statistics remains one unique course that brings students from various schools in the college together. Before 2018, research and statistics was a compulsory two (2) unit's course until 2019 when it was changed to Compulsory one (1) unit course. Educational Research and Statistics by the design and plan happen to be a compulsory course and a prerequisite for graduation. This course was previously undertaken before students are exposed to the compulsory teaching practice exercise but now it is undertaken at the final phase of the NCE programme. It remains one of the courses that cut across the various areas of specialty and disciplines of students in the College (NCCE, 2019).

The knowledge of Research and Statistics guide students in writing research proposals and reports, provide accurate information for better decision, monitors academic progress of students, predict futuristic events base on data set generated a foundational base for students to build constructive analytic minds especially in disciplines that are not numbers friendly, introduce and expose students to elementary data analysis among others. This course does not give room for rigid conceptualization of events and occurrences rather a platform to vary occurrences and events as they occur. Proficiency in educational Research and Statistics would allow for a detailed mind, concise presentation of facts and figures, dependence on data for result interpretation.

According to Abari and Akinyemi, (2023), in the past three decades, tertiary institutions in Lagos State have consistently witnessed a tremendous decline in the performance of students especially in educational research and statistics annually. This poor performance in this course makes it difficult for institutions to record low pass rate except use of other measures (External Moderator, 2019, 2020 and 2022). The failure rate recorded has led to poor skills in project writing, inability to analyse simple data analysis among others. Many unanswered questions have been raised by different stakeholders as to a review to the possible causal factor responsible for this annual mass failure rate (Abari and Akinyemi, 2023).

The import of classroom dynamics and learner variables are clear conditions if well addressed may likely correct the high failure rate in our tertiary institutions. In institutions of higher learning, it is important to acknowledge the pivotal role classroom dynamics play in ensuring that learning is maximized by learners while efforts to reduce or remove every impediments

to effective teaching and learning is eliminated. The whole concept of classroom dynamics is tied to setting up a positive classroom atmosphere where students feel comfortable to learn and communicate with other students and with their teachers. It also centres on all designed activities that a teacher can incorporate in having an enriched environment suitable for teaching and learning (Bose et al., 2018). Classroom dynamics is not really a natural scene but remains a planned condition of all expectations of a teacher to effectively achieve an interactive environment. Classroom dynamics is viewed as the establishment and maintaining conditions that allow students to engage in timely learning through deliberate and purposeful planning, actions and response (Braimoh, 2015). It involves the interaction between students to students and student's to teachers in a classroom condition. Naturally every classroom is filled with diverse category of learners as a result the learning process for diverse students can come in many forms by way of gender, race, religion, personality, ethnic background, class among others (Okuntade et al., 2020). Good classroom dynamics can help to create a positive and comfortable environment where students can learn and communicate with their teachers and other students alike.

Classroom dynamics are conceptualize to include observational skills; classroom management; availability, appropriate and relevance of instructional materials; student-teacher interaction relationship; use of teaching methodology; socio-economic background of the learners; psychological state of learners; time management; mastery of the subject; evaluation technique and motivation of learners (Akinola & Femi 2021; Bassey, 2012). However in the context of this study, observational skills, classroom management, use of appropriate, relevant instructional materials, student-teacher interaction relationship and teaching methodology would be considered in terms of accomplishing the teaching task under classroom dynamics. The above listed dynamics were selected from the lots owing to the enormous role it plays in determining the achievement level of students especially as it relates to the classroom situation. More so, they were selected because the researcher sees them as core variables that contribute significantly to students' academic performance.

One important element in classroom dynamics is the import of observational skills by the teachers. Teacher observational skill are those designed skills that allow one to recognize, process and analyze ones environment through the use of controlled observation, overt observation, participant observation and

naturalistic observation. This remains one pivotal skill expected to be well maximized by a professional teacher if he/she expects to have a dynamic classroom situation. These skills bring about dexterity and proficiency on the part of the teacher. Observational skills give the teacher first-hand knowledge about the nature of learners, their behavioural pattern, mindset, attitude and interest (Bell, 2012). According to Kanuka and Sadowski (2020), effective maximization of a teacher's observation skill in the classroom aids achievement of aims and objectives of the lesson plan, content clarity, clarity of content delivered, display of enthusiasm and motivation of students, variation in the choice of methodology to adopt in classrooms, identification of student attention and involvement, classroom management, ability to treat students with respect and equal treatment, establishment of confidence and display of professionalism, effective use of questioning, teaching strategies resourcefulness, provide clear feedback among others. Ogunjimi (2018) once stressed that achievement level of students is very tied to the ability of the teacher to effectively utilize his/her observational skills in a classroom as these skills would guide the teacher in identifying the various category of learners in class, their ability level, level of motivation and participation level which in turn would help in appropriate evaluation of learners during and after teaching and learning interaction.

Classroom management encompasses a variety of skills and techniques that teachers can use to create a high performing learning environment. Classroom management comprises of all actions taken by teachers to establish and sustain an environment that fosters students' academic achievement as well as their social, emotional and moral growth. As its core, its aim is to ensure classes run smoothly, disruptive behavior from students is kept to a minimum and teaching material and activities promote learning. The concept of classroom management is broader than the notion of student control and discipline, it includes all the things teachers must do in the classroom to foster students' academic involvement and cooperation in classroom activities to create conducive learning environment (Umoren, 2010). Similarly, classroom management involves curtailing learner's disruptive behaviors such as fighting and noise making, close observation, arrangement of classroom learning materials, and response to students who suffer from poor sight (vision), poor health ring, poor reading, poor writing, poor spelling, shame, dullness, hyperactivity and poor study habits (Morse, 2012). Poorly managed classrooms are usually characterized by disruptive behaviors such as sleeping,

late coming, noise making, miscopying of notes, eating, calling of nicknames, verbal or physical threat to fellow students or the teacher. These disruptive behaviors disorganize learning processes and hamper academic performance of students. Effiong (2007) suggests that teachers can deal with these disruptive behaviors in the classroom and reduce them to the minimum through effective classroom management so that effective learning can take place. Once teachers are able to effectively reduce or eliminate misbehaviors in the classroom, there would be increased academic attentiveness and engagement which would pave way for better academic performance by students.

These instructional materials serve as a channel between the teacher and the students in delivering instructions. They also serve as the motivation on the teaching learning process. Instructional materials are used to get the attention of learners and eliminate boredom. These materials are useful as they aid background information on the subject matter of instruction. More so, young teachers who have not really cut their teeth in the teaching profession rely heavily on these materials to plan the lesson session. No doubt, the use of instructional materials in a classroom situation goes a long way to improve the performance level significantly (Stephen & Isaac 2013). According to Essien (2009), instructional supervision creates an avenue for an interactive session between teachers and students, it also give teachers the opportunity to discover their students' weakness/ strength, render academic assistance when the need arise. Babalola and Ayeni (2019) maintained that students will develop keen interest in academic activities if teachers show concern in their academic well-being and encourage them through instructional usage and supervision. On this premise, it is expected that students whose teachers employ the usage of instructional materials exhibit less disruptive behavior and develop rewarding academic habits with the help of the teacher. Teachers need to be conversant with numerous teaching strategies that take recognition of the magnitude of complexity of the concepts to be covered. It can be attributed that classroom dynamics centres on teachers while learners variables is student centred.

Statement of the Problem

In tertiary institutions, the performance of students in educational research and statistics remains one that gives concern to stakeholders in education. This is so because previous studies revealed that it's a annual challenge which is

associated with many multi-facet factors. In an attempt to provide lasting solution to this poor performance in educational research and statistics have prompted researchers in the field to investigate possible causes that might be responsible for the annual decline in the students' performance, prominent among them includes, teachers' poor mastery of the subject matter, paucity of specialists to teach the courses, faulty grouping system, negative attitudes of students and teachers, phobia of students towards numerics and logic, time allotted for the course, poor motivational technique, venue assigned for learning, poor assessment tools, ineffective teaching methods among others (Barton, 2015; External examiner report, 2017; Ogunjimi, 2018). Naturally if the possible causes of poor performance in educational research and statistics is not well managed, it may lead to increase in drop-out rates, rise in unemployment due to graduation of half-baked teachers, ill motivated personnel, unattractive teaching profession among others. No doubt series of empirical studies have been undertaken to unravel the inimical poor performance of students in school related activities however certain exigencies and controversies still abound to be unravelled in the field of educational research and statistics as to the finite root cause to the decline in students' performance. These among other factors have prompted the researchers to investigate classroom dynamics as determinant of academic performance in educational research and statistics in College of Education, Lagos State.

Objectives of the study

The main purpose of this study is to determine how classroom dynamics correlate with academic performance of Pre-service teachers in Educational Research and Statistics in College of Education, Lagos State. Specifically, it is aimed to determine:

- i. If observational skills, classroom management, use of instructional materials, interaction relationship and teaching methodology by any means predict the academic achievement of pre-service teachers in Educational Research and Statistics
- ii. How classroom dynamics relatively contribute in academic achievement of pre-service teachers in Educational Research and Statistics.

Hypothesis

H₁: Teacher observational skills do not have any significant relationship with academic performance of pre-service teachers in Educational Research and Statistics.

H₂: Classroom management do not have any significant relationship with academic performance of pre-service teachers in Educational Research and Statistics.

H₃: Use of instructional materials do not have any significant relationship with academic performance of pre-service teachers in Educational Research and Statistics.

Methodology

The research design for this work would be survey research design of correlation approach. This design seeks to determine the relationship or association between the dependent and independent variables. This design is appropriate because it allows the researcher to determine the relationship between the independent variables (classroom dynamics and learners variables) and the dependent variable (academic performance in Educational Research and Statistics) of pre-service teachers. Population for this study will consist of all Pre-service teachers in Lagos State College of Education, Ijanikin, Lagos State. The target population for this work was 2021/2022 Year 2 Pre-service teachers in the college. A sample of 300 pre-service teachers will be used for the study. The sample will be selected using multi-stage process. First stratification of the college into five schools in the College. These schools are School of Arts and Social Sciences (SASS); School of Science (SOS); School of Languages (SLAN); School of Vocational and Technical Education (SVTE) and School of Early Childhood Care and Primary Education (SECPED). Secondly, the researcher listed all the accredited departments in the various schools to account for 64 departments in total. Thirdly ballot and hat method was introduced in the selection of twenty (20) departments from the existing sixty-four (64) departments in the institution. In this method all names of departments was written down in a paper then wrapped and rolled in a hat for twenty times without replacement. This technique was used in other to ensure equal sampling distribution from the sample frame. Finally simple random sampling technique was introduced to select fifteen students each from the selected department to make a sample

size of three hundred participants. Two instruments were used for data generation. Students' scores from 2022/2023 Teacher Made Achievement Test on Educational Research and Statistics using 60 items on 4-multiple options was used to generate score for academic performance. A self-structured Classroom Dynamics as Correlates of Academic Performance of Pre-service Teachers Questionnaire was used to generate data on classroom dynamics. This instrument had 5 sub-scales with twenty items with closed-ended format with a response pattern of 4-likert form of Strongly Agree (4), Agree (3), Disagree (2) and Strongly Disagree (1). The instruments were scrutinized and validated by two experts in the Department of Educational Evaluation and Counselling Psychology, University of Benin. Suggestions, comments and observations were effected to ensure content validity as reliability of the instruments was determined using Cronbach Alpha a reliability form. An index value of 0.889 and 0.781 were derived on 50 students from Federal College of Education, Akoka, Lagos not part of this work. The index value shows that internal consistency was achieved. Data generated was analysed through the use of correlation analysis tested at significant level of 0.05.

Results

H₀₁: Teacher observational skills do not have any significant relationship with academic performance of pre-service teachers in Educational Research and Statistics.

Table 1: Correlation between Teachers' Observation Skills and Academic Performance

Variables	N	r	sig.(2-tailed)	Decision
Teachers' Observation Skills				
	300	.797	.010	
Significant				
Academic Performance				
$\alpha = 0.05$				

Table 1 above reveals that with r- value of 0.797, it shows there exists a positively strong relationship between the independent variable (teacher observational skills) and the dependent variable (Academic performance). At r-value of .797 and *p*-value of 0.010, *p*-value is greater than the alpha level and the null hypothesis is rejected while the alternative which states that teacher observational skills does significantly determine the academic performance of pre-service teachers is retained.

H₀₂: Classroom management do not have any significant relationship with academic performance of students in Educational Research and Statistics

Table 2: Correlation between Classroom Management and Academic Performance of pupils

Variables	N	r	Sig.	Decision
Classroom management	300	.713	.021	
Academic Performance				

$\alpha = 0.05$

Table 2 above reveals that with r- value of 0.713, it shows there exist a positively strong relationship between the independent variable (Classroom Management) and the dependent variable (Academic performance). At r-value of .713 and *p*-value of .021, the *p*-value is greater than the alpha level and the null hypothesis is rejected while alternative which states that classroom management does significantly determine students academic performance is retained.

H₀₃: Use of instructional materials do not have any significant relationship with academic performance of Pre-service teachers in Educational Research and Statistics

Table 3: Correlation between use of instructional materials and academic performance

Variables	N	r	sig.(2-tailed)	Decision
Use of instructional materials	300	.892	.003	Significant
Academic Performance				

$\alpha = 0.05$

Table 3 above shows r-value of .892 and a *p*-value of 0.003. Since the *p*-value is greater than the alpha level the null hypothesis which states that use of instructional materials do not significantly determine the academic performance of Pre-service teachers in Educational Research and Statistics is rejected while alternative hypothesis which states that use of instructional materials significantly determine students academic performance is retained. At r-value of 0.003 it shows that shows that there exists a positively strong relationship between the independent variable (use of instructional materials) and the dependent variable (Academic performance).

Discussion

Result from hypothesis 1 reveals that teachers observational skills have a positively strong relationship with academic performance of pre-service teachers in Educational Research and Statistics. Findings conforms with study of Akinola & Femi (2021) who affirmed that observant teachers who are skilled in gathering environmental information that have the capacity to improve or mar the teaching and learning exercise successfully contribute to improving the academic performance of students. However, observational skills include maintenance of eye contact during class sessions, reading of body languages, introduction of reinforcement among others also go a long way to improve performance.

From hypothesis 2, it reveals that there exists a positively strong correlation between classroom management and academic performance of pre-service teachers in Educational Research and Statistics. This implies that, academic performance is better improved when teachers are able to manage their classrooms. The outcome of this work conforms with that of Umoren, (2010) who established that teachers who display good class control, ability to arrange classroom settings, reaction to learners reinforcement of response, effective time management skills among others most likely lead to an improvement in academic performance.

Also from hypothesis 3 it reveals that availability/relevance of instructional materials does significantly determine academic performance of pre-service teachers in Educational Research and Statistics. This implies that academic staff that effectively utilize the available and relevant instructional materials during teaching exercise goes a long way to positively affect pupils performance. The result agrees with that of Babalola & Ayeni (2019) also emphasised that learners develop keen interest and become intrinsically motivated when teachers begins to use instructional materials. Use of these instructional materials directly and indirectly makes a topic relevant to learners, novel, contemporary, adequate and dexterity in competence/use of such materials.

Conclusion

Based on the findings of this study, it was concluded that classroom dynamics remains a determinant of academic performance of pre-service teachers in Educational Research and Statistics. Empirically, teachers' observation skills, classroom management and use of instructional materials are good predictors

and contributors to academic performance in Educational Research and Statistics.

Recommendations

Based on the findings of the study, the following recommendations were made.

- i. Teachers should be exposed to the teaching methodologies that are learners centred such that its use would lead to an improved academic achievement in the performance of learners especially in Educational Research and Statistics.
- ii. Students should be given the opportunity to freely assess their teacher as it regards their methodology, mastery and relevance on use of materials among others. Periodic use of this would ensure that teachers become result oriented and directional in their approach to teaching and learning in the classrooms.
- iii. Evaluators should be equipped with the prerequisite evaluation tools necessary to undertake evaluation exercises especially one that involves classroom dynamics as used by academic staff in tertiary institutions.

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