Classroom Variables and Learning Outcome Amongst Undergraduate Students of Education in Rivers State Universities

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Abstract:
This study investigates classroom variables and learning outcome amongst undergraduate students of education in Rivers State Universities. Descriptive survey design was adopted in this study. Four research questions were formulated to guide the conduct of this study. Also, four corresponding null hypotheses were tested in the study. The population of the study comprised of all the 2016-2020 undergraduate students of education in Rivers State Universities estimated to be 24,781. Krejcie and Morgan (1970) statistical table was applied to select the sample of 261 public undergraduate students of education. A self-designed instrument titled: Classroom Variables Questionnaire and Learning Outcome Questionnaire”. Were used for data collection. The data collected were analyzed using Pearson’s Moment Product Correlations answer the research questions and test the null hypotheses. The results of the analysis of the hypotheses were tested for statistical significance at 0.05 alpha level. The findings of the study are: (1) Class size influences learning outcome among undergraduate student of education in Rivers State Universities. (2) There is a significant difference in the mean rating of male and female students on the influence of teacher-student relationship on learning outcome among undergraduate students of education in Rivers State Universities. (3) Teacher instructional delivery strategy influences learning outcome among undergraduate student of education in Rivers State Universities.

Based on the major findings of the study, the researcher recommended the following: (1) That
Government should adequately fund education to enable university management provide conducive classroom facilities for students so as to promote a desirable learning outcome. (2) Lecturers should maintain a healthy and friendly relationship with their students and make their interaction with them a democratic one. (3) Lecturers should be encouraged and sponsored by government to participate in conferences, workshops, seminars, training and retraining programmes within and outside the country to get them equipped for 21st century teaching challenges. Such trainings will equip them with necessary skills to manage various challenges in the classroom.

Introduction

Education is unarguably the fundamental instrument for economic, social, scientific, cultural, aesthetic and technological growth and advancement. There is no gainsaying that no nation can develop beyond the standard of her education. Thus, the developmental status of any nation is the output of the quality of her educational industry. It is in recognition of this fact that governments commit immense resources to ensure the provision of education for their citizens and also tailored their policies towards ensuring that it is made accessible to the generality of their citizenry (Oyebade et al. 2018). Education boosts all-round development and productivity of an individual, group and society. When an individual is educated, he becomes more useful and productive to self, family and the society he belongs. It is on this premise that the concept of compulsoriness of education is idealized and promulgated by some scholars, educationist, opinion leaders, well-meaning individuals and other stakeholder in the society.

During the past years, there has been a renewed focus on the quality of education in schools worldwide after the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2004) declared that quality of education in schools was generally declining in many countries. As such, quality of education is pointed out as the crucial issue of the post-2015 educational agenda worldwide (UNESCO, 2014). Attention on quality of education in schools has centered on the various relationships among the inputs, processes, and outputs, with the recognition that students should receive good quality of education. The movement toward the provision of quality of education in schools to all students has been accompanied by various research studies aimed at finding the quality of various education systems for improvement purposes (Benavot, 2011; Garira et al., 2019; Meera, 2015; Mohammad, 2017). This is particularly essential for high quality of education, which is considered essential to provide young people with adequate knowledge and skills as well as sustaining countries’ social and economic development.

The classroom, the place designed for teaching and learning, is a social setting where lecturers/teachers meet their students to exercise their primary assignment in the school system. Pianta & Hamre (2009) noted that classrooms are hotspot states and districts scramble to find the right mix of curriculum, professional development, and instructional supports that will raise students’ achievement. A classroom is a space provided in a school where students gather and the lecturer meets them to deliver his lecture. Lecturers in the classroom are the managers of activities in the classroom. They are concerned with maintaining order, regulating the sequence of events and directing their own attention toward achieving educational goals. A classroom that is well managed will provide an enabling environment for teaching and learning to flourish. The success of any educational system begins from the effectiveness of classroom variables. A classroom is very important because it facilitate teaching and learning. A conducive classroom environment increases the desire for knowledge and heightens
creativity in learners. The classroom, with the aid of its facilities such as: the writing board, classroom seats and instructional materials, enhances teaching and learning.

Classroom variables refer to those characteristics that describe and influence the behaviour of pupils in the classroom. Classroom variables consist of so many sub-variables that affect pupils’ performance in schools. Some of such variables are physical appearance, the layout of the classrooms, teachers teaching behavior and instructional materials utilization. The classroom still remains the main learning environment in the schools although learning can take place in other venues. On this premise, it is imperative that educators strive to make the classroom the best venue for pupils to attain their full potential in academic performance (Fullon, 2005). It is what teachers’ think, what teachers do and who teachers are at the level of the classroom that ultimately shapes the kind of learning that young people get (Ukpong, 2007). A large amount of a child’s time is spent sitting in a school’s classroom. This place is where they will learn the various skills deemed necessary and proper for them to achieve success in global society. The classroom is where they will gain an understanding of their place in the world as well as discovering their potentials. It is where the student develops what they want their future to look like, as well as knowledge of the skills needed to reach that goal.

With the classroom being such an important place in the growth of a child it is important to understand the ways in which to affect this environment in order to receive maximum effectiveness instruction. If schools really do play a large role in teaching the next generation how to be successful members of society then every precaution should be taken to make sure that the learning environment is one thing that helps students thrive.

Learning outcomes are statements that describe the knowledge or skills students should acquire by the end of a particular assignment, class, course, or program, and help students understand why that knowledge and those skills will be useful to them. They focus on the context and potential applications of knowledge and skills, help students connect learning in various contexts, and help guide assessment and evaluation. Good learning outcomes emphasize the application and integration of knowledge. Instead of focusing on coverage of material, learning outcomes articulate how students will be able to employ the material, both in the context of the class and more broadly. Teaching without learning outcome is similar to teaching without learning. A jarring reality is that most often teachers are unclear about what kind of learning is desired and the criteria against which it could be assessed. This realization was perceived by the National Policy on Education (NPE) in the year 1986, which revised the Programme of Action (PoA), emphasizing that the Minimum Levels of Learning (MLLs) should be laid down with learners being assessed frequently to ensure the achievement of NPE goals. It is this understanding that paved way for the advent of Learning Outcomes for different curricular areas.

Kinta (2013) defined learning outcomes as statements of what a learner knows, understands and is able to do when completing a certain period of learning. Thus, learning outcomes describe nonmaterial benefits students acquire during their learning. The major differences regarding the definition of terms lie in categories or elements learning outcomes describe, knowledge, skills, abilities, attitudes, competences, values etc. The most frequently three categories are used, knowledge, skills and competences, because these are considered to be measurable. A good learning outcome contributes to the learning management system of an institution. It aims in focusing on applying and integrating the knowledge and skills acquired in a particular unit of course program. Hence it is crucial in any part of any institution, which cannot be dodged when developing course content. It taps the knowledge and
skills out of any student. Learning outcomes is a quality assurance given to a chosen framework of study. They are the key element used by programme designers to validate and explain their external bodies, prospective students and colleagues of what is expected of a successful graduate on a particular course of study. Though some staff may fondly try to forget the learning outcomes, students these days pay greater attention to them, which shows its inevitability.

Statement of the Problem

Classroom is the most common platform used globally for formal teaching and learning activities. It is an environment characterized with learning behaviours and contributes significantly in learning outcome. Thus, learning outcome is largely dependent on classroom variables. The manner in which classroom variables are coordinated and presented determines the extent of learning experience. Classroom coordination is an active process where the lecturer ensures that all the activities (both instructional and non-instructional) that take place in the classroom are tailored towards improving the quality of student in the university context. The lecturer coordinates the class through a wide variety of ways including setting the classroom topology or formation, sitting arrangement, discipline, motivation, board management, and effective communication skills. The lecturer has an obligation to ensure he establishes and maintains the classroom as an effective environment for teaching and learning. Controlling classroom variables includes all the things lecturers and school management do to enhance student involvement and cooperation in classroom tasks and to establish a productive learning environment.

The backwardness and redundancy of many universities in Nigeria as against global standard have not gone unnoticed. In truism, many universities appear to be highly ineffective due to the deviation and wide disparity between their expected standards and their observed performance. These universities manifest ineffectiveness through their lecturers, learning environment, and students. Many lecturers are truant to punctuality, records keeping, and classroom instruction amongst others. Students on the other hand are performing below expectations in classroom examinations. Many students do find it difficult to defend their projects and assignments effectively, nor can they compete favorably with their counterparts across the globe. This has gone further to affect the quality of graduates our universities produce as employers of labour complain that Nigeria graduates are unemployable. This terrible situation accounts for high proportion of unemployment rate in the country. Consequently, government and university management have responded through various interventional approach to salvage the ugly trend.

However, these attempts appear to be mundane and a mere exercise as the effectiveness classroom variables in our universities does not seem to have improved. The persistence of these ineffective attributes observed in many universities has quickened the curiosity of many educational stakeholders and that of the researchers. It is observed that classroom variables are major problems that affect the learning outcome of students in the School. These classroom variables include class size, instructional materials, classroom structures, lecturer’s attitude in the class, classroom organization, lecturers’ leadership styles in the classroom etc.

It observed that most public universities in Nigeria are overpopulated, as such lecturers lack classroom control which in turn affects the learning outcome of students. These problems arise because of large class size ratio to a lecturer, poor utilization of instructional materials, Poor classroom structure, poor classroom organization etc. it is against this background that the study seeks to investigate the
influence of Classroom variable on learning outcome among undergraduate students of Rivers Universities.

**Aim and Objectives**

The main purpose of this study is to investigate the relationship between classroom variables and learning outcome among undergraduate students of education in Rivers State Universities. Specifically, the study seeks to;

1. Determine the extent to which class size relates to learning outcome among undergraduate students of education in Rivers State Universities.
2. Investigate the extent to which lecturer-students relationship relates to learning outcome among undergraduate students in Rivers State Universities.
3. Determine the extent to which lecturer’s instructional delivery strategies relates to learning outcome among undergraduate students in Rivers State Universities.
4. Investigate the relationship between classroom management and learning outcome among undergraduate students in Rivers State Universities.

**Research Questions**

The following research questions are formulated to guide the conduct of the study;

1. To what extent does class size relate to learning outcome among undergraduate students of education in Rivers State Universities?
2. To what extent does teacher-students relationship relate to learning outcome among undergraduate students in Rivers State Universities?
3. To what extent does teacher instructional delivery strategy relate to learning outcome among undergraduate students in Rivers State Universities?
4. To what extent does classroom management relate to learning outcome among undergraduate students in Rivers State Universities?

**Hypotheses**

To further guide the study, the following hypotheses are formulated;

H01: There is no significant relationship between class size and the learning outcome among undergraduate students in Rivers State Universities.

H02: There is no significant relationship between teacher-students relationship and the learning outcome among undergraduate students in Rivers State Universities.

H03: There is no significant between teacher instructional delivery strategy and learning outcome among undergraduate students in Rivers State Universities.

H04: There is no significant relationship between classroom management and learning outcome among undergraduate students in Rivers State Universities.

**Methodology**

The study adopted correlational research design. The population of the study consisted of all the 2016-2020 undergraduate students of education in Rivers State Universities. This includes 24,781
undergraduates from Rivers State University and 16,401 students from Ignatius Ajuru University of Education respectively. The sample size for the study was made up of 260 undergraduate students of education. This sample size is gotten through the use of the Krejcie and Morgan (1970) table of sample size specification. To get this sample, the researcher adopted the simple random sampling technique. Two instruments were used for data collection titled: Classroom Variable Questionnaire (CVQ) and Learning Outcome Scores. The instrument was validated by experts in Measurement and Evaluation from the Department of Educational Psychology, Guidance and Counselling. A test re-test method was used to determine the reliability of the instruments using Pearson’s Product Moment Correlation. A reliability coefficient of 0.87 was obtained for the instrument. Pearson’s Product Moment Correlation was used to answer the research questions and test the null hypotheses at 0.05 level of significance.

Results and Discussion

Research Question 1: To what extent does class size influence learning outcome among undergraduate students of education in Rivers State Universities

Hypothesis 1: There is no significant relationship between class size and learning outcome among undergraduate students of education in Rivers State Universities.

Table 1: Pearson Correlation Coefficient of Respondents’ Answer

<table>
<thead>
<tr>
<th></th>
<th>Class size and learning outcome</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Class size</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.063</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>261</td>
</tr>
<tr>
<td>Learning outcome</td>
<td>Pearson Correlation</td>
<td>.603</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.020</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>261</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.05 level (2-tailed)**

The results from the table of analysis for hypothesis one which states that there is no significant relationship between class size and learning outcome among undergraduate students of education in Rivers State Universities showed that the relationship between class size and learning outcome is significant, where correlation value $r=.603$, $p<.020$). The implication of this result is that the respondents agreed that class size has a significant relationship with learning outcome. Thus, the null hypothesis one is rejected while the alternate hypothesis is retained.

Research Question 2: To what extent does teacher-student relationship influence learning outcome among undergraduate students of education in Rivers State Universities?

Hypothesis 2: There is no significant relationship between teacher-students relationship and learning outcome among undergraduate students of education in Rivers State Universities.
Table 2: Pearson Correlation Coefficient of Respondents’ Answer

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Teacher-students’ relationship</th>
<th>Learning outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher-students’ relationship</td>
<td>Pearson Correlation</td>
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</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.040</td>
</tr>
<tr>
<td>N</td>
<td>261</td>
<td>261</td>
</tr>
<tr>
<td>Learning outcome</td>
<td>Pearson Correlation</td>
<td>.368**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.040</td>
</tr>
<tr>
<td>N</td>
<td>261</td>
<td>261</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.05 level (2-tailed)

The results from the table of analysis for hypothesis two which states that there is no significant relationship between teacher-students’ relationship and learning outcome among undergraduate students of education in Rivers State Universities showed that the relationship between teachers-students’ relationship and learning outcome is significant, where correlation value r=.368, p<.040). The implication of this result is that the respondents agreed that teacher-students’ relationship has a significant relationship with learning outcome. Thus, the null hypothesis two that states that there is no significant relationship between teacher-students’ relationship is hereby rejected while the alternate hypothesis is retained.

Research Question 3: To what extent does teacher instructional delivery strategies influence learning outcome among undergraduate students of education in Rivers State Universities?

Hypothesis 3: There is no significant relationship between teacher instructional delivery strategies and learning outcome among undergraduate students of education in Rivers State Universities.

Table 3: Pearson Correlation Coefficient of Respondents’ Answer

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Teacher instructional delivery strategies and learning outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher instructional delivery strategies</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>261</td>
</tr>
<tr>
<td>Learning outcome</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>261</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.05 level (2-tailed)
The results from the table of analysis for hypothesis three which states that there is no significant relationship between teacher instructional delivery strategies and learning outcome among undergraduate students of education in Rivers State Universities showed that the relationship between teachers’ instructional delivery strategies and learning outcome is significant, where correlation value \( r = 0.434, p < 0.010 \). The implication of this result is that the respondents agreed that teacher instructional delivery has a significant relationship with learning outcome. Thus, the null hypothesis three that states that there is no significant relationship between teacher instructional is hereby rejected while the alternate hypothesis is retained.

**Research Question 4:** To what extent does classroom management influence learning outcome among undergraduate students of education in Rivers State Universities?

**Hypothesis Four:** There is no significant relationship between classroom management and learning outcome among undergraduate students of education in Rivers State Universities.

**Table 4: Pearson Correlation Coefficient of Respondents’ Answer**

<table>
<thead>
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<th>Correlations</th>
<th>Classroom management</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Pearson Correlation</td>
<td>.683</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>261</td>
<td>261</td>
</tr>
</tbody>
</table>

Learning outcome

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Classroom management</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson Correlation</td>
<td>.683</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>261</td>
<td>261</td>
</tr>
</tbody>
</table>

**: Correlation is significant at the 0.05 level (2-tailed)**

The results from the table of analysis for hypothesis four which states that there is no significant relationship between classroom management and learning outcome among undergraduate students of education in Rivers State Universities showed that the relationship between classroom management and learning outcome is significant, where correlation value \( r = 0.683, p < 0.000 \). The implication of this result is that the respondents agreed that classroom management has a significant relationship with learning outcome. Thus, the null hypothesis four that states that there is no significant relationship between classroom management is hereby rejected while the alternate hypothesis is retained.

**Summary of Findings**

The study is summarized as follows:

1. Class size is related to learning outcome among undergraduate students of education in Rivers State Universities.
2. There is a significant relationship between teacher-students’ relationship and learning outcome among undergraduate students of education in Rivers State Universities.
3. Teacher instructional delivery strategy is significantly related to learning outcome among undergraduate students of education in Rivers State Universities.

4. Classroom management has a significant relationship with learning outcome among undergraduate students of education in Rivers State Universities.

**Discussion of Findings**

Analysis of data on the relationship between class size and learning outcome among undergraduate students of education in Rivers State Universities showed that class size has a significant relationship with learning outcome. The students’ responses indicated that they find it difficult to copy notes and do other class work in a small class size. This finding is in variance with Hoxby (2000) who finds no relationship between class size and achievement in fourth and sixth grade, which should reflect class size in all previous grades because the identification strategy uses variation that tends to be persistent within cohorts of students over time (and does not control for prior achievement).

Analysis of research question two showed that teacher-students’ relationship is related to learning outcome among undergraduate student of education in Rivers State Universities. The respondents agreed that good relationship with the lecturer helps them to study hard for exam and test. This result agrees with Baafi (2020), who conducted a study on teacher-student student relationship and students learning outcome in public senior secondary school in Ghana. The study established that teachers with a minimal conflicting relationship with students experienced positive learning outcomes. The study further found that teachers who are professionally close with their students and have made their students professionally dependent on them experienced an increase in their level of student behavioural and instructional engagement. Similarly, this finding supports Downey (2008) in his study on synthesizing educational research on factors that affect academic success. The rationale for the study was to examine classroom practices that made a difference for all students, but in particular, for students at risk for academic failure. What was determined was that a teacher’s personal interaction with his/her students made a significant difference.

The result of research question three revealed that instructional delivery strategies has a significant relationship with learning outcome amongst undergraduate students of education in Rivers State Universities. The students’ responses indicated that the method a lecturer uses stimulates their interest to learn. This finding is in line with the observation of Ugwuanyi (2014), on the effects of instructional approaches on students’ academic performances. His study revealed that students taught with demonstration performed significantly better than those taught with inquiry method. Inquiry is a technique which involves students in questioning to explore an area of study. It is a process student engages in to investigate and explain problems. Students collect and test data logically in order to discover why things happen the way they do. It is a student-oriented strategy which requires active participation in questioning events and in putting several factors together (conceptualizing) to explore hypothesis or theory. In the same vein, Ncharam (2005) studied the effects of inquiry and lecture methods on students’ performance in chemistry and observed the performance in favour of guided inquiry approach.

The analysis of research question four showed that classroom management relates to learning outcome amongst undergraduate students of education in Rivers State Universities. The respondents agreed that effectively managed classroom motivates them to pay attention to the lecturer’s teaching. This result supports Adeyemo (2012) who carried out a study on the relationship between effective classroom management and students’ academic achievement in physics subjects. He observed that effective
classroom management skills or techniques have strong and positive influence on student learning outcome. He concluded that both teachers and students have a significant role to play when it comes to implementing effective classroom management.

Result of hypothesis one revealed that there is a significant relationship between class size and learning outcome among undergraduate students of education in Rivers State Universities. This result is in harmony with Ayeni and Olowe (2016) who observed in their study that large class size has negative implications on effective teaching and learning of Business Education in tertiary institutions.

Hypothesis two result showed that there is significant relationship between teacher-students relationship and learning outcome among undergraduate students of education in Ignatius Ajuru University of Education. This result is in harmony with Hamre and Pianta (2006) who investigated the importance of teacher-student relationships. They posit that positive relationships between teacher and student serve as are source to students as it helps maintain their engagement in academic pursuits. This extended engagement leads to better grades.

The result of hypothesis three revealed that there is significant relationship between teacher’s instructional delivery strategies and learning outcome among undergraduate students of education in Rivers State Universities. This result is in congruence with Omwirhiren and Ibrahim (2016) who which investigated the effect of teachers’ instructional methods on students learning outcomes in selected senior secondary school in Kaduna, Nigeria, two instructional methods (Demonstration and Lecture) were used on target population of one thousand nine hundred and eleven (1,911) senior secondary (S.S. II) Science Students. The sample consists of 100 Students randomly drawn from two co-educational senior secondary schools within Kaduna North LGA. The students were divided in to two groups: The experimental group and the control group of 50 students each based on a categorization test to ascertain the equivalence of the group. The major findings from the study shows that there is significant difference in learning outcome on students exposed to demonstration and lecture strategies used to teach chemistry (tcal = 0.774 >tcrit = 0.443 and Fcal= 0.771 > Fcrit= 0.710 at P<0.05) and there is no significant difference in the academic performance of both male and female students exposed to demonstration instruction in teaching chemistry (tcal = 0.177 < tcrit = 0.861 and Fcal= 0.728 < Fcrit= 0.781 at P<0.05).

Finally, the result of hypothesis four demonstrates significant relationship between classroom management on learning outcome among undergraduate students of education in Rivers State Universities. This result is consistent with Pawlowska et al. (2014) who showed that classroom environment as well as student personality influenced student satisfaction and academic performance.

Conclusion

A classroom is a space provided in a school where students gather and the lecturer meets them to deliver his lecture. Lecturers in the classroom are the managers of activities in the classroom. They are concerned with maintaining order, regulating the sequence of events and directing their own attention toward achieving educational goals. A classroom that is well managed will provide an enabling environment for teaching and learning to flourish. The success of any educational system begins from the effectiveness of classroom variables. A classroom is very important because it facilitate teaching and learning. A conducive classroom environment increases the desire for knowledge and heightens creativity in learners. The classroom protects learners from the erratic weather condition such as rain,
wind, and extreme weather conditions. The effectiveness of classroom is dependent on how well its variables such as: the writing board, classroom seats and instructional materials, enhances teaching and learning are managed and utilized. Based on the results of the study, the researcher concludes as follows: class size relates, teacher-student relationship, teacher’s instructional delivery strategies, learning outcome and classroom management relates to learning outcome

**Recommendations**

The following relevant recommendations were made based on the major findings:

1. Government should adequately fund education to enable university management provide conducive classroom facilities for students so as to promote a desirable learning outcome.
2. Lecturers should maintain a healthy and friendly relationship with their students and make their interaction with them a democratic one.
3. State Ministry of Education should always organize seminars and workshops on how to improve their teaching skills.
4. Lecturers should be encouraged and sponsored by government to participate in conferences, workshops, seminars, training and retraining programmes within and outside the country to get them equipped for 21st century teaching challenges. Such trainings will equip them with necessary skills to manage various challenges in the classroom.

**References**

