

Influence of School Classroom on Students Academic Achievement in Public Secondary Schools in Daura Zonal Education Quality Assurance, Katsina State

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Abstract

A descriptive research of survey type was used for this study. The population of this study will consists of all public secondary schools in Daura local government, estimated to be 37,306 respondents from the 29 public secondary schools. The sample of 380 respondents was selected through stratified sampling and proportionate sampling technique. The instrument for data collection was a self-developed questionnaire on a 4-points Likert scale, named questionnaire on influence of school classroom on student academic achievement in public secondary school in Daura Zonal Education Quality Assurance of Katsina State. (ICSAAPSSD). The content validity of the instrument was determined by the researchers' and other expert in the field of educational management and test and evaluation meaningful comments and observations were made. In order to establish the reliability of the instrument, pilot study was conducted in two different schools, G. G. S. S. Sandamu and G, S.S Karkarku each in Baure Zonal Education Quality Assurance. The reason for choosing these school is the fact that the schools are out of study area and are not in any way use for the main study. For the purpose of this, 100 copies of the questionnaires were distributed to principals, staff and students of the above named schools. The data collected from the pilot study were subjected to reliability test using Cronbach alpha formula and reliability index of 0.85 was obtained. The reliability co-efficient was considered adequate for internal consistency of the instrument. A letter of introduction was collected from the head of department's office. The personal information of the respondents was analyzed using descriptive statistics in the form of tables, frequency distribution and percentages. In order to answer the research questions, mean and standard deviation was used. In addition, the analysis of chi-square was used in testing the null hypotheses postulated by the study. Based on the research of this study, it is therefore concluded that classrooms improve the academic achievement of secondary school students in Daura zone Katsina State. On the basis of the study outcome, the following recommendations were drawn, For the teachers to perform very well in their teaching career, the school authorities and the Government should build and equip the classrooms.

Introduction

The teaching-learning process cannot take place in a vacuum. In formal education settings, it occurs as a result of interaction among members of the classroom. In classroom settings, elements of teaching-learning process include: teacher, students, content, learning process and learning situation. The learning situation or learning environment means the conditions in which learning takes place. Each classroom has unique teaching - learning conditions. According to Abdi (2017), classes may seem similar from the distance but are different in its procedures and the processes.

A classroom setting has two major components, namely; physical component and human component. Physical component comprises all the physical objects present in the classroom e.g. black board, furniture, lightings, projector, books, computers etc., whereas the human component comprises of individuals i.e., teachers and students in the classroom. It generally involves the nature of interaction of teachers with students and student-student as well. This pattern of interaction generates a particular atmosphere which may be called as learning condition/situation/environment. This aspect is also called the psycho-social environment of the classroom. Most scholars agree that students' academic achievement varies with learning conditions. Therefore, this study was designed to investigate the effect of students' perception of classroom learning environment on their academic achievement in sciences and non-sciences subjects at secondary school level.

The importance of environment was derived earlier with the help of concept of 'life space' conceived by Randhawa and Lizzio, Wilson,, Simon (2016). 'Life space' includes the total psychological field with its entire group of forces, which repels as well as attracts persons in the field. It includes unconscious influence as well as conscious influence, past as well as present influences and has a bearing on the person (including the person as self), is encompassed in the life space, including the behavioral and psychobiological environment with all of its influences, such as positive and negative goals and the barriers restricting movement toward objectives.

Ayeni and Olowe (2017) introduced the concept of 'environmental press'. He says that the learning environment can be seen as interaction of personal needs and environmental press. Personal needs include drives, motives, goals of an individual whereas the term 'press' can be labeled as stimulus, treatment or process variables. Both personal needs and environmental press are necessary to be

taken into account while assessing the classroom learning environment. The concept of alpha press and beta press were later introduced for further explanation of the concept. The term classroom learning environment is elaborated by several educationists. Olaniyan, Salman, (2015) considered it as shared perception of the students and sometimes of the teachers in that environment. Kundu and Gouse (2015) , opined that the classroom psychological or social environment refers to the climate or atmosphere of a class as a social group that potentially influences what students learn.

Ogbuchi, Fraiser (2007) said that the classroom learning environment is a dynamical social system which includes not only teachers' behaviour and teacher - student interaction but student - student as well". Fraser (1991) explained the concept of classroom environment as: —Classroom learning environment carries a variety of meanings; it generally refers to the total climate, structures, processes, ethos within class-rooms which are integral elements affecting student's learning. Zedan, Bitar (2017) considered perception as psychological and physiological perspective and elaborated their effect on learning. The perception is described as, the way we judge or evaluate others with whom we are familiar in everyday life. It is important that background knowledge of the students in the form of schemas affects their perception and subsequent learning. This is called the cognitive dimension of the perception that is why, in this study, the researcher was interested in perception of students about the classroom learning environment.

The conceptualization, assessment and investigation of various aspects of classroom learning environment are important area of research since 1960s around the world. At present, there are two main approaches being used for the assessment of classroom learning environment. One approach is based on observation of classrooms or general kinds of activities by external observers. This approach was used in many studies. The other approach is the assessment of classroom learning environment variables based on students' perceptions about their classrooms. The latter approach considered to be better than the previous one because it directly involves the students in the classroom activities who are the permanent members of a class rather than outside observers. It is also found that outside observers change the behavior pattern of the classrooms by their sudden appearance which minimize the possibility of measuring the actual learning environment of classrooms.

It was shown that, more detailed evidence showing that structural aspects of classrooms, such as lighting and acoustics, influence students' ability to learn effectively. Furthermore, a substantial proportion of Nigeria classrooms currently do not meet minimum standards of structural quality. For each structural aspect, we critically examine the evidence and note exceptions or contingencies where relevant.

All studies were conducted in the United States, unless noted otherwise.

Students exposed to more natural light (i.e., daylight) in their classrooms perform better than students exposed to less natural light (Nwoke and Uguwegbulum, 2016). In a study with more than 2,000 classrooms in Nigeria, students who were exposed to a larger amount of daylight in their classroom had higher reading test scores than students who were exposed to less daylight in their classroom, even after statistically controlling for student population characteristics such as socioeconomic status and race. According to the National Center for Education Statistics, 16% of schools with permanent buildings and 28% of schools with temporary (i.e., portable) buildings have natural lighting that is unsatisfactory or very unsatisfactory (Weac 2016). Although incorporating more daylight into classrooms may be beneficial, it should be done carefully to avoid visual discomfort and temperature increases excessive external noise which hinders learning. The source of classroom noise can vary, but commonly includes heating and ventilation units (U.S. Architectural Transportation Barriers Compliance Board, 2002), airplane flight paths, and road traffic (Ayeni, & Olowe, 2016).

Classrooms with greater external noise are more likely to have lower student achievement. For instance, one study compared reading test scores of students in two schools with matched demographic factors (e.g., household income). One school was in the flight path of a major airport, whereas the other was in a quiet neighborhood. Students from the school in the flight path performed significantly worse than those from the quieter school. In an experimental demonstration, 12- to 14-year-old students in Sweden were randomly assigned to read about world cultures in the presence of one of four prerecorded noises (aircraft, road traffic, train, or verbal) or in quiet conditions. Students performed significantly worse on a subsequent test of reading comprehension when exposed to aircraft or road traffic noise than without noise. Train noise and verbal noise did not interfere with reading comprehension in this study. Unsatisfactory or very unsatisfactory acoustics were reported for 14% of Nigerian public schools with permanent buildings and 21% of Nigerian

public schools with temporary buildings, Classroom noise is an even more serious concern for students with hearing loss or attention deficits(W.AE.C.2006-2016). The optimal temperature range for learning appears to be between 68° and 74°. In an experiment on effects of temperature on learning, male undergraduates performed best on a test of word associations when they had learned those associations in a 72° room, and performed significantly worse as temperatures became more extreme in either direction. Heating is reported as unsatisfactory or very unsatisfactory for 14% of Nigerian public schools with permanent buildings and 12% of Nigerian public schools with temporary buildings.

Exposure to low-quality air is related to decreased student attendance and affects teachers' abilities to teach well (Shamaki, 2016). Schools serving students of color and low income students are disproportionately likely to have low air quality. Unsatisfactory or very unsatisfactory air quality is reported for 9% of Nigerian public schools with permanent buildings and 16% of Nigerian public schools with temporary buildings.

Ensuring adequate structural quality is important for all students and is particularly so for students with disabilities. For example, students with hearing loss may find it particularly difficult to discriminate the teacher's words from. Recent Nigerian studies have identified non-conducive learning environment, poor teacher-student relation and non-application of instructional materials in teaching mathematics as factors that may be causally related to mathematics phobia and poor students' performance in mathematics (Olaniyan and Salman, 2015). Another study in the country found shortage of well-trained mathematics teachers, inadequate teaching facilities, large classes, mathematics phobia, lack of laboratories and libraries to be associated with poor students' performance in mathematics (Sa'ad et al., 2014). elsewhere in Africa, a study of public secondary schools in Kenya that assessed the influence of students' attitude on performance in mathematics showed that students that perceived mathematics as a difficult subject were less motivated to learn mathematics and more likely to do poorly in the subject (Nwoke and Ugwuegbulam, 2016). Another study that assessed the effects of human and material resources on mathematical literacy which involved economic, social and cultural status, and the cumulative expenditure on education (Aztekin and Yilmaz, 2014), Among these myriads of factors that are known to influence students' performance in mathematics, classroom environment has commonly implicated in studies. Nwoke and Ugwuegbulam, (2016) in a study of university students found that students' perceptions of the

learning environment influenced wide spectrum of learning outcomes including academic achievement, development of key skills and satisfaction with learning.

The study also concluded that students' perceptions of their current learning environment were a stronger predictor of learning outcomes at university than prior achievement at school. Another survey in Cross River State that involved 1200 Junior Secondary 2 (JS2) students from 48 secondary schools showed that the following classroom environment variables (viz. time utilized by teacher; physical layout of classroom; classroom climate; teacher's motivation of students; instructional material utilization; classroom management skills; teacher-student classroom interaction and student-student classroom interaction) were individually and collectively predictive of students' mathematics achievement.

Class size and the availability of suitable instructional materials are two components of the classroom which stand out as key modifiable factors (Aztekin and Yilmaz, 2014), Effective teaching and learning cannot take place in poorly managed classrooms. Poor classroom environment is characterized by crowded population, poor learning facilities, lack of sitting accommodation and lack of instructional materials. It is common knowledge that lack of instructional facilities or inadequate use of instructional facilities and large class size characterize the classroom environment of many public schools in Nigeria. The persistence of these inadequacies of the classroom in Nigerian public schools contribute remarkably to poor learning outcomes reflected by high failure rates in mathematics as reported by the West African Senior School Certificate Examination (WAEC, 2016).

Another study conducted by Abbas (2015) shows that large class size adversely influenced learning outcome. A study of 337 randomly selected Senior Secondary School students in Yobe State Nigeria showed that the students taught in an ideal learning environment performed significantly better in mathematics achievement tests than the students taught in a dull learning environment (Shamaki, 2015). Another recent study of senior secondary school students in Nigeria found that large class room was associated positive effect on students' academic performance in any subject (Adimonyemma, 2018). The study also observed that large class size had adverse psychological and social effect on students which may have indirectly affected their academic performance. Also, a cross-sectional survey involving 30 lecturers and 520 final year students of tertiary institution in

northern Nigeria revealed that large class size adversely affected the teaching and learning of Business Education (Ayeni and Olowe, 2016). In Uganda, another African country, a study of high school students identified students' perception of good classroom as a significant predictor of students' achievement in mathematics along with parental support, peer influence, prior science subject achievement and attitude toward mathematics. Meta-analysis of studies that assessed the effect of class size on student achievement concluded that Classroom Size Reduction (CSR) generally had positive effects on students' performance in all subject areas (Shin and Chung, 2009). A longitudinal study of kindergarten students and teachers randomly assigned to small and large classes within participating schools concluded that students in small classes outperformed their counterparts in classes of regular size.

The assertion that learning is enhanced by appropriate use of instructional materials is widely studied and accepted to be true yet contextual variations and the complex nature of mathematics and related science subjects make it imperative to continue to research this subject area in a bid to explore intervention options that may offer novel opportunities to enhance learning outcomes. Abdi (2017) in a study of institutional factors that influenced students' performance in public secondary schools in Somaliland, observed that instructional materials and school facilities significantly influenced students' academic performance more than teacher characteristics did. In Nigeria, Adimonyemma, (2018) and Olayinka (2016), in two separate studies reported that adequacy of instructional facilities in the classroom environment significantly influenced students' performance in Biology and Social Studies respectively.

Results of studies cited in the foregoing review of literature on effects of class size and instructional materials suggest that improvement in these classroom variables, namely, provision of adequate instructional materials and reduction of class sizes could contribute to efforts to improve learning outcomes in science subjects in settings where these conditions are currently suboptimal.

It is against the stated problems that the study will attempt to answer the following research questions:

Does classroom influence academic achievement of students of public secondary schools in Daura Zonal Quality Assurance?

Purpose of study

The major purpose of this study is to investigate the influence of classroom on student academic achievement of public secondary school in Daura Quality Assurance of Katsina State,

School classroom did not significantly influence the academic achievement of students of public secondary schools in Daura Zonal Quality Assurance

Chi-square (χ^2) was used to analyze the hypotheses at the 0.05, level of significance

Result

Table 1 χ^2 summary on the influence of classroom on students academic achievement

Variable	Agreed	Disagreed	Total	df
χ^2 Value	309 (85.13%)	71 (19.8%)	363	1
Probability FO	190.0	190.0		
.001 FE				
	$\chi^2=179.132, .df 1, P< 0.05$			

Table 1: above revealed that 309 representing (85.13%) of the respondents agreed that classroom influence students' academic achievement while 71 representing (19.8) respondents did not agree. The statistical computation indicates that value of $\chi^2=179.132, .df 1, P< 0.05$. Therefore, the null hypothesis is rejected. This means that majority of respondents agreed that, classroom influence academic achievement of students of public secondary schools in Daura Zonal Quality Assurance

Discussion

The study revealed that, classroom influence academic achievement of students of public secondary schools in Daura Zonal Quality Assurance. The finding is in line with the study conducted by Adimonyemma, (2018) who stated that, adequacy of instructional facilities in the classroom environment significantly influenced students' performance and achievement in any type of subjects. The finding of this study is also in line with the study conducted by Shamaki, (2015) on senior secondary school students in Nigeria found that large classroom was associated positive effect on students' academic performance in any subject.

The finding of this study concluded that, there is significant influence of classroom on student academic achievement of public secondary schools in Daura Zonal Quality Assurance

Conclusion

Based on the results of this study, it has been established that, classroom and the use of appropriate teaching methods by teachers significantly influence secondary school students' academic achievement.

Recommendation

Based on the findings of the study, the following recommendations are made;

Government should construct and equip the new classes in both rural and urban area of public secondary schools in Daura Zonal Education Quality Assurance.

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