

## TEACHING-LEARNING ENVIRONMENT: A TOOL TOWARDS STUDENTS' ACADEMIC PERFORMANCE

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### **Abstract**

The purpose of the study was to examine the teaching-learning environment: a tool towards students' academic performance. Thus, the study investigated some components of teaching-learning environment and their possible influence on students' academic achievement. Student learning environment, class size, teaching resources, students learning activities and instructional materials are some of the important constructs used to understand the behaviour of the student towards the teaching-learning process. Understanding the behaviour of students in the academic institutions will provide a glimpse of how the instructions and academic practices are going on. As such, it could be used as a powerful tool by the teachers and academic supervisors to design effective pedagogical techniques to maximize the learning experiences of the students. These and many more the study sort to determine.

**Keywords:** Teaching, Learning, Environment and Academic Performance

### **Introduction**

The common task faced by students in any school setting is that of attaining a standard of excellence in their academic performance. That this standard is sometimes not attained as expected is attributed to both biological and environmental factors within and around the learner. Stenberger (1993) defined academic performance as the extent to which a learner exhibits understanding or mastery of certain concepts after being taught and assessed by the instructor. This academic performance, according to him, is influenced by a number of factors such as the student's age, sex, personality traits, mental ability, interest and other inherited factors. Apart from these organismic factors which are individually and genetically determined, there are the environmental factors such as home, school and societal variables which are individually and genetically determined, there are the environmental factors such as home, school and societal variables which combine to determine to a large extent how an individual learner would react to a given situation and with what results.

All these factors whether inherited or environmental influence the amount and quality of learning which an individual acquires whether in terms of school learning or learning that goes on outside the four walls of the schools. The school, which is a social institution where organized and systematic teaching and learning activities take place, should be

such that enhances and/or compensates for the biological differentials in the individual learners.

For proper and result-oriented teaching and learning to take place, the school environment must be resourceful, stimulating, facilitating and conducive. The question one should ask here is “how adequate and facilitating are the school environments in which our students find themselves in their pursuit of primary, secondary and tertiary education?”

Predicated on the belief that just as a chain is as strong as its weakest link, any nation’s quest for political and economic self-determination through technological advancement is incontrovertibly tied to the level of education of its citizenry. Consequently, on this belief, societies all through the centuries have found need and justification for the establishment and management of educational system that are relevant to their goals and aspirations. Hence, the many reforms in educational policies witnessed in our society.

### **Teaching-Learning environment as a factor in school learning.**

Environment as seen by Lyons (2001) embraces the physical, economic, social and cultural conditions that prevail in our world and the forces emanating from these that influence human learning and development, and according to Udom (2001) teaching-learning environment is categorized into two, namely: i) Physical and ii) Social. The physical deals with room space, sitting arrangement, ventilation, lighting, acoustic elements, equipment and tools. The social has to do with group climates, class discipline and appropriate teaching methods. These environmental variables have a positive influence on student’s learning if adequate and a negative influence if adverse. Farombi (2008) reporting on the effect of teaching-learning environment on achievement in schools wrote:

*“To no small extent, the effectiveness of classroom learning activities is determined by the judicious use of available materials and resources. The size and the shape of classrooms impose limitations upon the scope of the work that can be undertaken therein. The positioning of classroom fittings, the availability and the type of classroom furniture, the scale of provision of materials, serve as constraints in the teachers planning... the physical environment in which learning takes place is bound to have some significant bearing on learning”, he concluded (p.3-5).*

In a similar study conducted by Ukpogon (2001) on learning environment and students’ achievement in physics, it was found that students achievement gains were higher for students who studied in a rich and stimulating environment which changes as the needs of the children change. He noted that for effective learning, the educational environment should provide something of the excitement of a market, the awe of a museum, the fascination of a zoo and the interest and enjoyment that can be gained by browsing in the internet.

In a survey study carried out by the Ministry of Education, Plateau State (2002) on the learning environment, it was reported that most educators agreed that a fascinating school environment has a positive effect on learning. And that a conducive learning environment is one where there are sufficient human and material resources. But the findings showed that the teaching-learning environment in most schools in Jos was however not encouraging. The prevailing situation was said to be far from satisfactory for effective teaching and learning as a result of the earth of physical facilities such as classroom and basic instructional facilities.

### **Class size and Students' Academic Performance**

Group interaction influences on learning vary according to the size of the group, e.g a class, the attitude of most members of the group and the leadership or lack of it of the group (Davies, 2007). According to Anja (2005), class size and students' learning are two separate variables which have significant and inseparable relationship in terms of the influence of each other in a social setting such as the school where organized and systematic learning takes place. Whereas the effectiveness of the teaching-learning process is likely to be influenced by the teacher-student ratio (or class size), an unnecessary large class size, as it is often the case now, could constitute a nuisance to the teaching/learning process of both the teacher and students.

In her study on ways of improving g school learning for higher performance, Nwachukwu (2014) maintained that the unprecedented rapid increase in school enrolment in Nigeria in recent time should be counter-balanced with improved facilities and equipment to ensure effective teaching and learning of school subjects. Attah (2002) opined that effective participation of students in the classroom during the lesson and interacting with the students on one-on-one basis. On the other hand, the hazards of large class size can be overbearing on the teacher as well as the students.

Working on group variables and students' performance in technical drawing, Eugene (2009) found that communication was stressful and diagnosis taxing on the part of the teacher while a student, who for the sake of large class could not ask questions on how certain curves and arcs were linked in a technical drawing class, perceived technical drawing as very difficult beyond the understanding of ordinary students and consequently never wished to have anything to do with such subject.

Commenting on the teacher-student ratio, Bolton, cited in Attah (2002) observed that if the class was too large, some members would be unoccupied and if small, the members would be well occupied and properly attended to, thus enhancing performance. In Nigeria, for instance, the National policy on Education (FRN, 2004) stipulates a class ratio of 1:20 in pre-primary; 1:30 in primary; and a maximum of 1:40 in secondary. Analyzing research findings on class size, Davies (2007) concluded that large classes have important negative consequences resulting in the following postulates:

- The larger the group the greater the demands upon the teacher and the less the interaction with and demands on students;
- The larger the class, the greater the group tolerance towards the teacher and the more centralized the classroom situation becomes;

- The larger the group, the greater the possibility of less active members to become inhibited in their participation and less exploratory and adventure-some or creative the groups discussion becomes;
- The larger the group the greater the tendency for the group's atmosphere to become less intimate, the anonymous the actions and generally less satisfied the members become with the results of their interaction.

- Still on school size whether we like it or not are a pervasive factor in academic achievement. He reported that while educators and administrators disagree about optimum school size and how school size alone affects student's achievement, common sense has shown that smaller school enhance social interaction and influence students in many positive ways. This he contended may at first appear illogical, because larger schools usually offer greater opportunities in extra-curricular activities and specialized courses and thus provide students with a more stimulating learning environment. Also, some students seem to learn quite well in schools with large population, a study by Alexander (2017) shows a great number of advantages for the majority of students in smaller schools. These advantages include higher class attendance rates, greater participation in class activities, fewer problems in social behaviour and activities associated with higher students' performance such as team teaching, frequent teacher interaction and cooperative group learning.

### **Teaching Resources and Students Academic Performance**

Teaching Resources in the context of this study refer to the teaching and learning facilities such as buildings, equipment, vehicles, water, electricity, audio visual aids, textbooks, chalkboards, library, workshop/laboratory, tool etc. Frensham (2011) sees the achievement of certain goals or standards of performance as an integral part of any educational programme. He also observed that it is natural to expect that students should acquire certain skills taught them; otherwise, the whole exercise becomes futile.

On relationship between teaching resources and students' performance, Uyoata (2005) opined that it is logical to see the need for certain resources as pre-requisites for imparting instruction to students. Thus, the fact that such resources are necessary for teaching and the students' ability to learn skills can be measured, suggests a relationship between these two factors that can be investigated. Buttressing this observation, Ayeshung (2004) indicated that when the environment is rich with resources, the child has repeated opportunity to select materials and activities that appeal to his individual interest thereby motivating him to learn more.

Links between schools' facilities and educational outcomes in a study by Lyons (2001) concluded that there is an explicit relationship between the physical characteristics of school buildings and educational outcomes and that while good maintenance, modern systems and flexible designs are clearly required there are even more complex, outside factors that need to be addressed. Similarly, the location, environment and facilities have been found to influence the choice of school, subjects and even learning outcomes. Corroborating this view, Enu (2006) found that schools with adequate facilities often

provide opportunities for the students to interact manipulate and carry out experiments which often stimulate the interest and attitude of the learners towards the study of science- oriented subjects. Nwagwu (2003) noted that old and obsolete building have negative consequences for the learning process while safe, modern, controlled environments enhance the learning process. His study evaluated the relationship between school facilities and student's achievement and found higher test scores for students learning in schools with better facilities and lower scores for students learning in schools with sub-standard facilities. The study showed a difference in students' test scores ranging from 5-17 percentile points.

Further commenting on school quality, Farombi (2008) found out that the presence of better facilities in school buildings (such as good lightening, nice painting, sitting facilities, adequate ventilation and other things that could create comfort) all provide a motivating condition for teaching/learning. It promotes or encourages regular attendance at classes by both teachers and students. Again, such well-designed system sends a powerful message to learners about the importance of their community places on education.

All these point to the fact that teaching resources do influence students' learning which is known to correlate heavily with academic performance. In a comparative study of resources situation and teachers' job performance, Okoyeocha (2005) found that teachers who worked in a resourced-based school performed better than those in poorly equipped school. He concluded that as the teacher taught and that students in poorly equipped and ill-motivated school cannot perform better. In another comparative study of resource situation and students' performance in science, Ukpong (2001) reported students' achievement gains in school where resources for learning science were adequate. He concluded that for effective teaching of science in secondary schools, government and proprietors of schools must provide laboratories quipped with sufficient instructional materials.

### **Students' Learning Activities and Their Academic Performance**

Dewey (2011) emphasized "learning by doing" as the cornerstone of his theory of learning. Travers (2007) in support of this theory asserted that "To be able to perform a skill a learner learns to apply principles and knowledge he has already acquired to solve problems". Fensham (2011) maintained that the laboratory (Workshop) should be a place where teachers assist learners to put "flesh on the bone" of theoretical work and where a sense of mastery of new useful skills is achieved. Hoffstein and Lunetta (2002) observed that science laboratory experiences exert a positive effect on development and growth of creative thinking, problem solving and scientific thinking.

In a study conducted to investigate the correlation of students' participation in learning and their achievement, Ausubel (2000) found that constant practice in various situations aids learning and subsequent transfer of ideas from one situation to another. He found that students who were provided with sufficient assignments, projects and problems after the original tasks showed increased retention, transfer and academic performance.

A practical-oriented subject emphasizes students practice and involvement more than anything etc. Hofstein and Lunetta (2000) are again of the opinion that students' personal involvement in practical work is more effective method for promoting their interest in learning and enhancing their performance than the other teaching methods where their involvement is less. The teacher-talk in class instruction involves only the learners' sense of hearing, which practice could be boring after a while. The involvement of the learners on the other hand, calls into play the senses of sight and touch additionally. The more the number of senses involved in the instructional process, the more enduring the learning that results. (Mkpa, 2001).

How much of these senses are stimulated in our junior secondary school students is a poser that this study seeks to address. It is known that young people have inquisitive minds. These inquisitive minds can be aroused when they see things that are taught theoretically in the classroom carried out practically in the workshop or laboratory. The degree of excitement will be more if the practical is carried out by the students with little assistance from either teacher or laboratory assistant.

#### **Use of Instructional Materials and Students' Academic Performance**

Availability of instructional materials and the use of same while teaching occupy the two extreme ends of a continuum. Many resources can be adduced for this. These include large teacher-student ratio, teachers' work load, non-functioning equipment, power supply, and lack of consumables and teachers' characteristics (Okoro, 2003). The National policy on Education (FRN, 2004) emphasizes the use of instructional materials during the teaching/learning process at the secondary, primary and nursery levels of schooling. Marshall McLuhan and Fiore, quoted in Ivowi (2008), said it all:

*The effectiveness of the message, more often than not, which is ordinary words of mouth (Verbalization) have been found inadequate for effective instruction; they have failed to register the needed instructional impression. They need to be supplemented and made alive (p. 48-51).*

Davies (2007) pointed out that a teacher can capitalize on materials capabilities to promote the learner's perception, understanding, transfer of training, reinforcement and retention of learnt materials. Agun (2009) further asserted that the teacher can use instructional resources to arrest and sustain attention, present facts and information, teach concepts and principles, guide thinking and induce transfer of learning which correlates positively with students' performance.

Longe and Adams, reported in Fernham (2011) both agreed that learners not only prefer resources-parked presentations but also achieve significantly higher than learners exposed to verbalized traditional classroom instruction only. On the contrary, Clark (2006) examined the report of a policy study by Standford Institute for the United States office of Education and concluded that the use of instructional materials has probably not changed instruction in any essential way, except to make it more expensive. Moore

(2007) also reported of an experiment which learners in a completely resource-based learning system scored significantly lower than their counterparts in a traditional classroom that had only an audio laboratory.

### **School Location and Students Academic Performance**

School location refers to a place or position where the school is situated or sited. In the context of this study, it refers to either rural or urban area. The effect of nature as well as human variables has compelled man to settle in an urban or rural area. And the effect of this settlement is found to correlate heavily with the educational attainment of the people. Several research studies have investigated the effect of rural and urban areas on students' achievement (Beeson and Strange, 2000; Howley, 2001).

Fan and Chen (2009) studied an assessment of the academic achievement of rural students as compared to urban students and which included regional comparison. They examined test scores for Reading, Mathematics, Science and Social Studies during the National Educational Longitudinal Survey (NELS) data set. Separate analyses were conducted for 8<sup>th</sup>, 10<sup>th</sup> and 12<sup>th</sup> grade students. These researchers were concerned primarily to provide a systematic test of the hypothesis that rural students in United States of America received an inferior education compared with their urban counterparts, with parity of achievement the criterion. The analyses were carefully executed and comparatively sophisticated and the results showed no significant differences between rural students and urban students in Reading, Mathematics, Science and Social Studies. A comparison of the performance on standardized tests of students from small, usually rural schools with those from larger, often urban institutions have not produced definitive results (Edington and Koehler, 2007).

Several studies have not found any significant differences between the two groups. In research completed in the state of New York, Monk and Haller (2006) found that students from smaller (often rural) schools achieved as well as students from larger (often urban) school. Kleinfeld (2005), in his Alaska study, did not find that high school size determined the quality of a students' education, experience or achievement on standardized tests. Moreover, in one New Mexico study, which looked at factors affecting performance or selected high school students, those attending schools in rural areas performed as well as those in urban areas. (Ward and Murray, 2008).

Other scholars have found, however, that rural-urban differences do exist. One study in Kansas found that the Americans College Test (ACT) scores of rural students were two points lower than scores of urban students in each of the categories of the American College Test (ACT) (Downey, 2012). Another examination of students' performance in Hawaii public schools found substandard achievement to be a pattern in rural areas (McCleery, 2009). Other research on achievement in social studies for 13-years olds pointed out that rural students comparatively speaking, did well on objective tests that focused on factual learning (Eatson and Ellerbruch, 2005). Easton and Ellerbuch (2005), further stated that poorer rural students scored students considerably lower on citizenship and social studies tests than students from upper socio-economic urban communities.

Kleinfeld (2004), discovered achievement differences between Native Americans in rural village schools and those attending urban boarding schools. Those students who were able to remain with their own tribes and families had a higher success rate than those operating within the confines of the alien urban milieu. Considerable study also indicates that rural students who attend higher college perform as well as the urban students and may be as likely to stay in school. On the other hand, research on small school (Which included a large majority of rural schools) revealed that small school size can mitigate the influence of poverty and educational disadvantage (Howley, Strange and Bickel, 2000). They listed low students-teacher ratio, healthy student-teacher relationship, sound community – school relationship, teachers’ total commitment to primary assignment, among other things as factors that mitigate the inadequacies in learning facilities and experience often prevalent in rural school.

### **Conclusion**

The literature review so far reveals that studies have been carried out on Teaching-learning environment and students’ academic performance. Many of such studies showed significant relationship between academic performance and such variables like class size, availability of resources and their utilization. However, most of these studies were based on certain school subjects whose setting and concepts are quite different.

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