

## Discovery and Emancipation of Basic Science and Technology Students' Behaviour from School Environment Constraints

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**Abstract.** The study investigated the school environment as one of the predictors to students' behaviour in Basic Science and Technology. The design of the study was survey type while the population comprised (50) Basic Science and Technology teachers and (450) public and private junior secondary school students in the selected local government areas in Ogbomoso Educational zone of Oyo state. A self-developed questionnaire on School environment predictors of Students behaviour in Basic Science and Technology was prepared for data collection. The instrument was validated, a cronbach Alpha reliability coefficient method was employed to ensure the reliability of the instruments. One research question and one null hypothesis guided the study. The result were analyzed using frequency count, mean and simple percentage, while t-test statistics was used to test the hypothesis at 0.05 level of significance.

The result showed that unattractive school environment, non-availability of highly equipped library, non-availability of standard Basic Science and Technology laboratory, non-availability of necessary infrastructure like chairs, tables, chalkboard and shelves, Poor school principal's inspection, Noisy environment, Indiscipline on the part of the principal, teachers and students, Insurgence and poor welfare condition. All these have significant effect on behaviour of Nigerian

students towards Basic Science and Technology and also call for immediate emancipation for the sake of effective learning. Based on these findings, recommendations were made.

**Keywords:** School environment, students' behaviour and Basic science and Technology

### 1. Introduction

Education is the medium by which an individual achieves success in life and it lays the foundation of personality (Kumar, 2017).

Basic Science and Technology, as one of the school science subjects, is an approach to teaching of science. It is a subject that cuts across the school science education curriculum and is needed in all branches of science, applied science and social science. It calls for constant school environmental encouragement and improvement while students' behavioural pattern is crucial to development of interest in various school subjects.

Dupper (2010) maintains that students misbehave because there are mismatches between their needs and the socio-environmental factors that are within their immediate environment. Student misbehaviour is not only the naughty behaviour of the student but also the

behaviour that disturbs the effective teaching and learning process (Ghazi, Gulap, Muhammad & Khan, 2013) and that interrupts the saner and safer school environment (Schleicher, 2015). Student misbehaviour is a source of worry for all school stakeholders (Gutuza & Mapolisa, 2015; Marais & Meier, 2010; Ramjanally, 2015).

School-related factors that influence the behaviour of the students of secondary schools are factors that emerge from within the immediate environment of students. These factors are related to the external system, namely the school, peer pressure, the family, the community and the media. They are the social systems in which students are influenced by other people in their daily life (Marais & Meier, 2010).

School environment is crucial in this study as it influences students' behaviour intermittently. It consists of both material and non-material resources. It includes the teachers, peers, cohesiveness, the subjects, and method of teaching. A healthy and attractive school environment makes for conducive learning and promotes students' pride in their schools and their interest to stay in school (Mgbodile, 2004). Graff (1987) in Nwizu (2003) warned that the environment in which the learner acquires knowledge has a great influence on the cognitive achievement of the learner. It has also been generally agreed that the quality of learning is markedly influenced by environmental and organizational factors.

Environmental influence before now has not been considered as one of the factors that affect academic performance in secondary schools hence it has little or no attention in educational discourse and consideration. But, over the last decade, remarkable studies have indicated a correlation between the environment and academic performance of students. A student outcome and academic success greatly influenced by the type of school they attend. School factors include school structure, school composition and school climate. The school one attends is the institutional environment that sets the parameters of one's learning experience. As schools are faced with more public

accountability for student academic performance, school level characteristics are being studied to discover methods of improving achievement for all students.

Tsavga (2011) maintains that the learning environment plays a vital role in determining how students perform or respond to circumstances and situations around them. This implies that no society is void of environmental influences. The learning environment determines to a large extent how a student behaves and interacts, That is to say that the environment in which we find ourselves tends to mould our behaviour so as to meet the demands of life whether negatively or positively. Awule, cited in Aliade (2008), stated that learning environment should have good infrastructural development, adequate trained teachers, good leadership and adequate instructional materials among others.

Korir & Kipkemboi (2014) state that student outcome and academic success greatly influenced by the type of school they attend. Nwangwu (1990) gave the characteristics of school environment to include school buildings, classrooms, furniture, playgrounds, sporting facilities, laboratories, libraries and equipment which aid the teachers in effective delivery of lessons. According to State of Maine (2002) school environment includes the physical and aesthetic surroundings and the psychological climate and culture of the school.

Odeh, Oguche, Angelina & Ivagher, (2015) investigated the influence of school environment on academic achievement of students in secondary schools in Zone "A" Senatorial District of Benue State, Nigeria. The results of the study indicated that school climate, discipline and physical facilities has significant influence on academic achievement of secondary school students in Zone 'A' Senatorial District of Benue State. Based on the findings of the study, the researchers recommended among others that school authorities should endeavour to provide a conducive school environment that has good climate for effective teaching and learning. Such environment should be safe, fair and student-friendly.

According to (Chukwuemeka, 2013) environments play major roles in the life of every individual whether a student, teacher, employer or employee. The challenge of education today is to offer experiences that provide students with opportunities to develop the understanding, skills, and attitudes necessary to become life-long learners, capable of identifying and solving problems and dealing with changes. This is particularly important in secondary education, as specified in the National Policy on Education (FGN, 2014) that prepares the students for useful living in the society and for higher education (FGN, 2014). There are three levels of education in Nigeria: the primary, secondary, and tertiary. Secondary education is the education children receive after primary education, but before tertiary education. In order to achieve the goals of secondary education, the environment has to be conducive to learning. In fact, education thrives well only if there is good learning environment to assist learners to get the necessary information at each stage of learning. The environment constitutes an important aspect of the learning process. Hence, it is pertinent to critically look at the environmental factors (school building, library services, school location, school facilities, laboratory adequacy etc.)

## 2. Statement of the Problem

This study sought to find out how school environment predicts students' behaviour in Basic Science and Technology at junior secondary school level and provide appropriate suggestions for solution.

## 3. Research Question

What are the school environment constraints that predict the students' behaviour in Basic Science and Technology at private and public junior secondary school level in Oyo State of Nigeria?

## 4. Hypothesis

There is no significant difference in the school environment as a predictor to the students' behaviour in Basic Science and Technology at

private and public junior secondary school level in Oyo State, Nigeria.

## 5. Research Design

This study adopted a survey design type to provide information about the neutrality of occurrence or characteristics. To this extent therefore, the researcher reported the situation as they had occurred without the manipulation of any variable.

### 5.1 Population

The target population for the study consists of Education Officers, Basic Science and Technology teachers and students in public and private junior secondary schools in Oyo State, Nigeria.

### 5.2 The sample and sampling Technique

The sample involved four hundred and fifty (450) upper Basic level (JSSII) students in both public and private junior secondary schools, fifty (50) Basic Science and Technology teachers in selected public and private Junior Secondary schools and Local Education Officers in Ogbomoso Educational Zone of Oyo State of Nigeria.

This study adopted a multi-stage sampling approach. The first stage based on the existing grouping of the five local government areas in Ogbomoso Educational Zone of Oyo State. Three local government areas (Ogbomoso North, Ogbomoso South and Oriire Local Government Areas) were purposely selected. Five public secondary schools out of fifteen and five private secondary schools out of thirty eight public secondary schools were purposely selected in Ogbomoso North Local Government Area. In Ogbomoso South Local Government Area, five public secondary schools out of sixteen and five out of twenty three private secondary schools were purposely selected. Likewise in Oriire Local Government Area, five out of eighteen public secondary schools and five out of seven private secondary schools were purposely selected making a total of fifteen public secondary schools and fifteen private

secondary schools in Ogbomosho Educational Zone. In the third stage, fifteen students were randomly selected from each of the selected public and private schools making a total number of four hundred fifty students. That is, two hundred and twenty-five (225) students from public junior secondary schools and two hundred and twenty-five (225) private junior secondary schools were randomly selected.

**5.3 Instrument for data collection**

Validated research instrument for this study comprises twenty (20) items to be answered so

as to elicit information on school environment. Four likert scale questionnaire as modified by the researchers were used with the weightings of the responses as follows: Strongly Agree= 4 points; Agree= 3 points; Disagree= 2 points and strongly Disagree = 1 point

**5.4 Data analysis technique**

The data collected were analysed with the use of descriptive statistics and simple percentage while the difference in the relationship was measured using T-test statistics to determine the variation in the attitudinal response to the items.

**6. Results**

**Table 1: Means and Percentages of Respondents on School Environmental Constraints**

S/N	ITEMS	Mean of SA (PUB. SCH)	Mean of SD (PUB. SCHL)	Mean of SA (PRV. SCHL)	Mean of SD (PRV. SCHL)	% of SA (PUB. SCH)	% OF SD (PUB. SCH)	% OF SA (PRIV SCH)	% OF SD (PRIV. SCHL)
1	Unattractive school environment	201	24	211	14	89.33	10.60	93.78	6.20
2	Non availability of well-equipped library	211	14	212	13	93.78	6.22	94.22	5.77
3	Non- availability of standard Basic Science and Technology laboratory	171	54	189	36	76.00	24.00	84.00	16.00
4	Non availability of necessary infrastructure like chairs, tables, chalkboard and shelves	188	41	171	54	83.56	16.44	74.00	24.00
5	Poor school principal's inspection	161	64	202	23	71.56	28.44	89.78	10.22
6	Noisy environment	141	84	131	94	62.67	37.33	58.22	41.78
7	Indiscipline on the part of the principal, teachers and students	204	21	210	15	90.67	9.33	93.33	6.67
8	Insurgence and poor welfare condition	217	8	211	14	96.44	3.56	93.78	6.22

Based on the result of this study, the table 1 revealed that:

Unattractive school environment is a constraint to the teaching of Basic Science and Technology to which 89.33% of the respondents in public schools and 93.78% of the private school agreed.

Non-availability of well-equipped library is also a constraint to the teaching of Basic Science and Technology in both public and private schools. 93.78% in public school and 94.22% in private schools agreed respectively.

Non- availability of standard Basic Science and Technology laboratory is a constraint to the teaching of Basic Science and Technology in both public and private schools.

The percentage of those who agreed in public schools is 76.00% while in private schools 84.00% agreed. Non-availability of necessary infrastructure like chairs, tables, chalkboard and shelves is a constraint to the teaching in both public and private schools, 73.78% and 74.67% of the respondents from public and private school agreed respectively.

Poor school principal’s inspection is a constraint to the teaching of Basic Science and Technology in both public and private schools. 83.56% and 76.00% of the respondents from public and private schools agreed respectively.

Noisy environment is a constraint to the teaching of Basic Science and Technology in both public and private schools. 62.67% and 58.22% of the respondents in the public and private schools agreed respectively to support the fact that noisy environment stands as a constraint.

Indiscipline on the part of the principal, teachers and students is a constraint to both public and private schools. 90.67% and 93.33% of the respondent of from public schools and private schools agreed respectively.

Insurgence and poor welfare condition are constraints facing the teaching of Basic and Science and Technology in both public and private schools in Oyo State. 96.44% and 93.78% of the respondent in the public and private schools agreed respectively

**Table 2:**  
**Independent Samples Test for school environmental factor**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
School factor	Equal variances assumed	2.130	.145	-2.569	448	.011	-.69778	.27162	-1.23159	-.16397
	Equal variances not assumed			-2.569	441.588	.011	-.69778	.27162	-1.23161	-.16394

The p-value (0.011) is less than 0.05, hence, we reject Ho and conclude that there is a significant difference in the school environment as predictor to the students’ behaviour in Basic Science and Technology at private and public junior secondary school level in Oyo State of Nigeria Therefore the null hypothesis is hereby rejected.

**7. Discussion of Results**

The result obtained in the study showed that there is no significant difference in school environmental constraints to the teaching of Basic Science and Technology in public and private schools in Oyo State. The result of the research question revealed that the respondents in public and private school agreed that unattractive school environment is a constraint to the teaching of Basic Science and Technology, Non availability of highly equipped library, Non availability of standard Basic Science and Technology laboratory, non-

availability of necessary infrastructure like chairs, tables, chalkboard and shelves, poor school principal's inspection, noisy environment, indiscipline on the part of the principal, teachers and students, insurgence and poor welfare condition are all. These findings are in agreement with the view of Nwangwu (1990), Mgbodile, (2004), Aliade (2008), Tsavga (2011) and Korr and Kipkemboi (2014) that a healthy and attractive school environment makes for learning and promotes students' pride in school. Also, the environment in which the learner acquires knowledge has a great influence on the cognitive achievement of the learner. Also, quality of learning is markedly influenced by environmental and organizational factors. Learning environment should have good infrastructural development, adequate trained teachers, good leadership and adequate instructional materials among others. The factors of school environment to include school buildings, classrooms, furniture's, playgrounds, sporting facilities, laboratories, libraries and equipment for teachers effective delivery of instructions.

Therefore, parents, teachers, the school authorities and policy makers are expected to work together in order to promote students' learning outcomes through provision of good learning environment.

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