

***Home Environmental Variables and Mathematics Study Habits Among Junior Secondary School Three (JSS) Students in Calabar Education Zone of Cross River State, Nigeria***

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**Abstract**

*This study investigated the relationship between environmental variables and Junior Secondary School III Students' Mathematics Study habits in Calabar, Cross River State, Nigeria. It was carried out in Calabar Education Zone, comprising of seven local government areas. Correlation design was employed and stratified random sampling technique was adopted in selecting a sample of 320 students drawn from 10 public secondary schools out of eighty-four (84) in Calabar Education Zone. The research instrument used was a self-constructed questionnaire namely- Environmental Variables and Students' Mathematics Study Habit Questionnaire (EVSMSHQ). Three hypotheses were tested using Pearson Product Moment Correlation Coefficient. The study revealed that there was significant relationship between each of home physical facilities, parental academic stimulation/socio-economic status, and peer influence respectively after correlating them with each of the five sub-constructs of Attitude Towards Mathematics Class (ATMC), Time and Place for Study (TPS), Mathematics Study Strategies (MSS), Mathematics Anxiety (MA), and Time Exams and Relaxation (TER). The study revealed that mathematics study habits were significantly related to all of the factors investigated; it was recommended among others that parents and guardians should provide conducive learning environment for their children in order to enhance good mathematics study habit.*

**Keywords:** Environmental, Variables, Mathematics, Study, Habits, Students

**Introduction**

Study habits of learners differ from one learner to the other and from place to place. It is a critical part of learning since learners' academic achievements depends significantly on their study habit. Poor performance in mathematics has become a great concern for parents, mathematics teachers, government, educationist and the country at large.

Scientists and educationists have tried to discover the effect of environmental variables on students' study habit of mathematics; however, the issues still hold on. Study habit of learners assumes a key part in mirroring the standard of education and learners' performance in mathematics. The learners cannot learn everything required about mathematics in the classroom but the mix of both in and outside classroom learning makes up learners' study habit. This necessitate learners not to be in a rush of traversing, rather maintaining focus is vital.

Crow and Crow (1992) expressed that adequate study attitude incorporate arrangement, environment, an unmistakable time table and taking brief of a well composed note. Crow and Crow in Okorodudu (2000) declared that study habits involve the aggregate of every behavioural patterns (for example, addition, verbal psychomotor, passionate) and decided on reason and implemented practices that the individual adjusts to learn and achieve competence. The way to turning into a compelling learner is therefore figuring out how to apply proper technique of studying. This becomes more and true as one progresses in learning. An hour or more daily is typically enough to enhance effective study habit to achieve satisfactory scores in high school. While some learners can still get through school with little exertion, most learners achieved success through effective study habits. Study habits therefore refer to cumulative attitudes of students towards the academic pursuit especially in terms of self-directed study to facilitate effective learning of school subjects especially mathematics.

Several empirical examinations have been done by scholars like Hills and Ballow (2000) on successful study propensities. They contend that effective study habits have an association with environment of study. The place of study seems to have an impact in general idea of study. That is, the place one studies importantly affect's one's productivity in the light of the fact that the area and every one of its qualities are stimuli. The stimuli of the study circumstances ought to create the reaction of contemplating and no other reaction. They proposed that an imperative methodology is to have a put aside environment particularly for learning, adding that glaring brightness could bring about eye damage and cerebral pains. In this way, secured lights and colours should be utilized if conceivable to decrease light power. Hills and Ballow (2000) propose the utilization of work journal which permits the learners to take a gander at all that he needs to do and to allocate time to each subject. Arranging time thusly can minimize stress and uncertainty that may emerge if there should be an occurrence of any additional work that must be opened in. The diary ought to be designed based on desire and purpose, designating satisfactory time to every duty so that no specific duty consumes additional time than should be expected. Tukur and Musa (2001) observed that note-taking prompts general predominant execution and maintenance of new materials. The capacity to pursue quick is an added favourable position. Fast readers take in and hold more than moderate readers, on the basis that they flow better than the slow readers who delay over each word.

Okorodudu (2000) accentuated that unless a learner has an excellent memory, it is hard to access and review precisely all the primary focuses and pertinent subtle elements in a study material by simply understanding it. Fagbemi (2001) presents that the level of learning relies on the measure of time the kid is effectively occupied with studying. The time used in learning enhances students to hold the materials studied, which latter support the learner's execution of result amid test or examination. For most young people, the inside of the home and its immediate surroundings are first environment they encounter all through their initial years. Evans and Hygee (2007) reported that lodging and the area in which houses are arranged have noteworthy association with kids' social improvement. These findings lend credence to the predictive effect of the young learners' perceived home physical environment on his learning and interest. Parental involvement is very important in the education of their children. In the event that there is minimal parental contribution in an adolescents' learning, there is to a greater extent a likelihood that the learner will not succeed.

Parental involvement, as Olatoye and Ogunkola (2005) suggest, means not only helping with homework but also taking active part in children education activities. A home in which there is no acceptance and sharing of responsibility does not augur well for the personal development of the child. Oluwatelure (2009), undertook the study on the impact of parental inclusion on learner's state of mind and execution in science. Four hundred and eighty learners partook in the study. A state of mind pool created and institutionalized by the analyst was utilized. Chi square investigation uncovered that the level of home impact (parental association) has suggestion on the learner's state of mind to class learning and exhibitions of learners in science are a component of their mentalities to the subject. A child from a happy home has been found to be associated with emotional stability, maturity and control.

According to Onyejiaku (2001), children from poor and unhappy home climate exhibit contrary behaviour. According to him, families where there is always friction, and lack of parental interest in either of the children or their welfare will breed socially disapproved behaviours in children. Researches have shown that the psychological state of the home significantly affect the behaviours and social adjustment of the adolescent. Udida, Ukwayi and Ogodo (2012) report that the level of instructive learners from high-SES families are additionally more prone to go to improved institutions, specifically in nations with separated education framework, solid isolation in the educational system as indicated by neighborhoods components and/or cleared focal points of private over open tutoring.

Peer group is seen as a generation because they are born within the same period and their relationship is referred to as an intergeneration relation (Onyejiaku, 2001). Adeyemo and Torubeli (2008) observed that students who interact freely with peers have positive self-concepts, have better academic achievement than those who do not. Peer influence

is seen as one of the factors that influence mathematics study habits of JSS3 students. Usoro (2000) observed that children who interact freely with peers have a positive self-concept, have higher academic achievement than those who do not. He added that peer relationships at home or in school have influence on one another. In other words, students influence one another because they will like to be like others or they emulate some other person in order to be accepted within the group. The review also shows a significant relationship between peer influence and mathematics study habits of JSS3 students.

Study habits for learners assume vital parts in the learning procedure replicated in the scholarly accomplishment of learners in mathematics. The motivation behind this research therefore was to see whether a relationship exist between Home Physical Facilities (HPF), Parental Academic Stimulation/Socio Economic Status (PASSES) and Peer Influence (PI) which are environmental variables and students' mathematics study habits in Calabar Education Zone of Cross River State.

### **Hypotheses**

**Ho1:** There is no significant relationship between home physical facilities and mathematics study habits of JSS3 students.

**Ho2:** Mathematics study habits of JSS3 students do not significantly relate to parental academic stimulation/socio-economic status.

**Ho3:** Peer influences are not significantly related to JSS3 students' study habits in mathematics.

### **Methodology**

The study was carried out using correlational research design. Correlational design is utilized to determine the degree to which two or more factors are related. Stratified random sampling technique was adopted in selecting a sample of 320 students drawn from ten (10) public secondary schools out of eighty-four (84) in Calabar Education Zone. Ten (10) percent of the total school population was used. The population of this study comprised of all the public Junior Secondary Schools in Calabar Education Zone. The questionnaire was a self- constructed Environmental Variables and Students' Mathematics Study Habits Questionnaire (EVSMHQ). The EVSMHQ which adopted four points Likert type response options of Strongly Agree, Agree, Disagree and Strongly Disagree, had a reliability index of 0.86, obtained using Cronbach Alpha reliability coefficient. Data collected was used to test each hypothesis, at 5% level of significance, using Pearson Product Moment Correlation.

### **Presentation of results**

**Ho1:** There is no significant relationship between home physical facilities and mathematics study habits of JSS3 students.

The independent variable in this hypothesis was the student home physical facilities and the dependent variable were the five sub-constructs of the students' study habit.

**Table 1:** Correlation analysis of the relationship between home physical facilities and JSSIII students study habits in Calabar Education Zone (n=320)

Variables	$\Sigma x$	$\Sigma x^2$	$\Sigma XY$	r-cal
	$\Sigma y$	$\Sigma Y$		
Home physical facilities (X)	4128	27544	22453	
Attitude towards maths class (Y1)	2847	23248	20436	0.533*
Time and place for study (Y2)	2789	21464	19844	0.376*
Maths study strategies (Y3)	2464	18648	17496	0.438*
Mathematics anxiety (Y4)	2366	19548	18238	0.331*
Tests, Exams and Relaxation (Y5)	2537	21422	18482	0.434*

\*P<0.05; df=318; critical r=0.195

The results in the table indicate that the correlation test yielded a coefficient of the r value of the five sub-constructs which are; y1=0.533, y2=0.376, y3=0.438, y4=0.331, and y5=0.434 which on comparison to its critical r value equivalent of 0.195 with df (318) means that the relationship between home physical facilities and students' mathematics study habits is positive and significant at 0.05 level of significance. Accordingly, the null hypothesis was rejected. This led to the conclusion that home physical facilities significantly relate with JSS3 students' mathematics study habits in the study area.

**Ho2:** Mathematics study habits of JSS3 student's do not significantly relate to parental academic stimulation/socio-economic status.

**Table 2:** Correlation analysis of the relationship between home parental academic stimulation/socio-economic status facilities and JSSIII students study habits in Calabar Education Zone (n=320)

Variables	$\Sigma x$	$\Sigma X^2$	$\Sigma XY$	<b>r-cal</b>
	$\Sigma y$	$\Sigma Y$		
Parental academic stimulation/socio-economic Status facilities (X)	5123	31786	27654	
Attitude Towards maths class(Y1)	2847	23248	20436	0.399*
Time and place for study (Y2)	2789	21464	19844	0.546*
Maths study strategies (Y3)	2464	18648	17496	0.356*
Mathematics anxiety (Y4)	2366	19548	18238	0.289*
Tests, Exams and Relaxation (Y5)	2537	21422	18482	0.341*

\*P<0.05; df=318; critical r=0.195

As can be observed in entries of  $y_1 = 0.399$ ,  $y_2 = 0.546$ ,  $y_3 = 0.356$ ,  $y_4 = 0.289$  and  $y_5 = 0.341$  which on comparison to its critical r value equivalent of 0.195 with df (318) means that the relationship between academic stimulation/socio-economic status is positive and significant at 0.05 level of significance. The null hypothesis was accordingly rejected and its alternative retained in this case.

**Ho3:** Peer influences are not significantly related to JSSIII students' study habits in Mathematics.

**Table 3:** Correlation analysis of the relationship between peer group influence and JSSIII students study habits in Calabar Education Zone (n=320)

Variables	$\Sigma x$	$\Sigma X^2$	$\Sigma XY$	<b>r-cal</b>
	$\Sigma y$	$\Sigma Y$		
Peer Group influence	5143	28453	25439	
Attitude towards maths class (Y1)	2847	23248	20436	0.465*
Time and place for study (Y2)	2789	21464	19844	0.527*
Maths study strategies (Y3)	2464	18648	17496	0.356*
Mathematics anxiety (Y4)	2366	19548	18238	0.465
Tests, Exams and relaxation (Y5)	2537	21422	18482	0.365

\*P<0.05; df=318; critical r=0.195

Table 3 Entries show the correlation  $r$  values of  $y_1 = 0.465$ ,  $y_2 = 0.527$ ,  $y_3 = 0.356$ ,  $y_4 = 0.465$  and  $y_5 = 0.365$  which on comparison to its critical  $r$  value equivalent of 0.195 with  $df$  (318) means that there is a positive and significant association between peer influence and student mathematics study habits at 0.05 level of significance. In line with the decision rule, the result was seen significant and the null hypothesis was rejected accordingly. On the strength of this outcome, it was concluded that there was a significant association between peer influence and JSS3 students' mathematics study habits in Calabar Education Zone.

### **Discussion of the findings**

The first finding of the study was that home physical facilities significantly relate to students' mathematics study habits in the study area. The consequence of this outcome is that the current data suggests that JSS3 students' home physical facilities significantly relate to the pattern of current JSS3 students' mathematics study habits in Calabar Education Zone. This result is supported by Evans and Hygge (2007) who reported that living condition and the neighbourhood in the environs have significant relationship with children's socio-economic advancement; for instance, families living in high-rise building, rather than single family living arrangements, less associations with neighbour, result in less social backing. Studies on housing and nature of neighbourhood have also inspected the part of disorder in young people to situations finding a relationship between riotous home environment and levels of mental misery among middle level school kids.

The second finding of the study showed that there was a significant association between parental academic stimulation and socio-economic status and JSS3 students' Mathematics study habits in the study area. The implication of this outcome is that JSS3 students' parental academic and socio-economic status and consequent academic stimulation significantly relate to JSSIII students' mathematics study habits in Calabar Education Zone. The outcome on the test of the hypothesis that examined the relationship between parent academic stimulation/socio-economic statuses could be related to Onyejiaku (2001) which affirmed that family qualities are a noteworthy wellspring of difference in learner's instructive results. This is likely so since family monetary assets which are connected with guardians' occupation and instructive fulfillment, regularly infer expended learning, open doors both at home and in school and better-taught parental consideration. Udida, Ukwayi and Ogodo (2012), report that the level of instructive learners from high-SES families are additionally more prone to go to improved institutions, specifically in nations with separated education framework, solid isolation in the educational system as indicated by neighbourhoods components and/or cleared focal points of private over open tutoring. Tukur and Musa (2001) observed that the level of learning relies upon the measure of time the youngster is effectively occupied with learning. Combined with the period dedicated for studying which for the most part helps understudies to hold the materials learnt which thusly may

support understudies' scholastic exhibitions. Where the environment is not supportive of mathematics in terms of parental involvement, the results are not likely to be wonderful.

The third finding of the study indicated that there was a significant association between peer influence and JSS3 Students' Mathematics Study Habits in Calabar Education Zone. This imply that peer relationship at home have influence on one another. In other words, students influence one another because they will like to be like others or they emulate some other person in order to be acceptable within the group. This agrees with Usoro (2000) who observed that students who interacts freely with peers have a positive self-concept, hence higher academic performance than those who do not.

### **Conclusion**

On the basis of the findings, the following conclusions were reached: Home physical facilities greatly relate to JSS3 students' mathematics study habits indicating that conducive environment promote effective study habits. Positive parental involvement in their children's education promotes effective study habits. Peer influences on the other hand have been seen as one of the influential variables to study habits. This is because students' study more by imitating their peers.

### **Recommendations**

1. Parents and guardians should provide their children with conducive environment for study.
2. Parents should be involved in the education of their children by instilling discipline in them in order to inculcate good study habits.
3. Parent should ensure that their children choose peers and play mates likely to help them build better study habits especially in mathematics.

### **References**

- Adeyemo, D. A. & Torubeli, V. A. (2008). Self-efficiency, self-concept and peer influence as correlatives of academic achievement among secondary schools in translation. *Pakistan journal of social sciences*, 5(1), 10-16.
- Crow, R. D. & Crow, A. (1992). *Educational psychology*. New York: McGraw Hill.
- Evans, G. W. & Hygge, S. (2007). *Noise and performance in children and adults*. London: Whurr Publishers.
- Fagbemi, I. Z. O. (2001). Assessment and examination malpractices. In J. A. Aghenta & P. N. Lassa, (Eds.), Proceedings of the 16<sup>th</sup> annual Congress of the Nigerian Academy of Education, Jos.
- Hills, P. S. & Ballow, H. (2000). *Effective study skill*. London: Pan Book press
- Okorodudu, J. O. (2000). *Intelligence and Learning: Adolescent psychology*. Delta: Delta State University Press.

- Olatoye, A. O. & Ogunkola, B. J. (2005). Parental involvement, interest in schooling and science achievement of junior secondary school students in Ogun state Nigeria. *College Teaching Methods and Styles Journal*, 14(18), 30-39.
- Oluwatele, T. A. (2009). *The impact of parental inclusion on learner's state of mind and execution in science*. An Unpublished Ph. D Thesis, University of Ado-Ekiti, Nigeria.
- Onyejiaku, F. A. (2001). *Techniques of effective study*. Calabar: Wusen Press.
- Tukur, A. H. & Musa, A. K. J. (2001). Examination malpractices among undergraduate students of University of Maiduguri: Condition and forms. In J. A. Agthenta & P. N. Lessa (Eds.), *Proceedings of the 16<sup>th</sup> Annual Congress of the Nigeria Academy of Education*, University of Jos, Jos.
- Udida, L. A., Ukwai, J. K. & Ogodo, F. A. (2012). Parental socioeconomic background as a determinant of students' academic performance in selected public secondary schools in Calabar Municipal Local Government Area, Cross River State, Nigeria. *Journal of Education and Practices*, 3(16), 11-27.
- Usoro, S. U. (2000). Learning environment, learners background and students' academic achievement in social studies in Calabar Education Zone of Cross River State of Nigeria. Unpublished M.Ed Thesis, University of Calabar, Nigeria.