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RELATIONSHIP BETWEEN STUDY HABITS AND MATHEMATICS PERFORMANCE AMONG SENIOR SECONDARY SCHOOL STUDENTS' IN KOGI-EAST, NIGERIA

BY
SHUAIBU ABDULKAREEM
Department of Science Education,
Prince Abubakar Audu University Anyigba Kogi State

Corresponding Author: Abdulhauwa13me1027@gmail.com

Abstract

Relationship between study habits and mathematics performance among senior secondary school students' in Kogi-East. Two specific purposes, two research questions and two hypotheses guided the study. The design for the study was correlational survey design. The study was carried out in Kogi-East. The population of the study is 4364 (2,885 male and 1, 479 female) senior secondary school two (SS I) Mathematics students from 43 public secondary schools in Kogi East. The sample size for the study was 366 SS I Mathematics students. Two research instruments was used for data collection. Mathematics Study Habits Questionnaire, (MSHQ),. To ascertain the validity of the instruments, the instruments were face and content validated by three experts. In order to ensure the reliability of the instruments, 30 copies of the instruments was administered to SS1 mathematics students in Ankpa Education Zone which is not part of the study but shares similar characteristics with the area of the study. The scores obtained from MPT, MSHQ and was recorded and subjected to reliability methods respectively using Kuder Richardson (K-20) and to Cronbach-alpha method. The reliability indexes obtained were 0.75, 0.83 and 0.87 respectively. The instruments were administered to the students through Direct Delivery Technique (DDT). This was to ensure maximum return of instruments and close monitoring. The data collected was analyzed with respect to research questions and hypotheses. Descriptive statistics in the form of mean and standard deviation and Pearson's Product Moment Correlation was used to analyze the research questions 1 to 5. The hypotheses 1 to 5 were tested using Regression Analysis. If the probability level is greater than 0.05 the null hypothesis will not be rejected but if the probability value is less than or equal to 0.05 the null hypothesis will be rejected. The result of the study among others showed that the variation in students' performance in Mathematics is significantly accounted for by study habits. The result also shows that all the dimensions of study habits significantly predict students' performance in mathematics. Based on the findings of the study, it is therefore concluded that

study habits is a significant factor in determining students' performance in Mathematics and, finally it was recommend that students should be taught to have clear understanding of their uniqueness, this will enable the students to develop learning lifestyles or study habits that will be suitable and which might lead to performance.
Keywords: Relationship, study habits, mathematics, performance, students

Introduction

Mathematics plays a significant role in the development of any society. It also occupies a central place in the Nigerian educational system. The position of Mathematics makes it necessary for the use of innovative pedagogical strategy that will enable teachers meet the challenges of teaching and learning of the subject especially in this era of information age. The development of Mathematics is without question, one of the supreme achievements of man due to its utilitarian role in the natural and social sciences (Ahmad, 2016). Mathematics is globally acknowledge as the bedrock of scientific and technological development. Nations that are seemed to be developed and largely considered as civilized have achieved this status through effective mathematics education for the citizens (Lawrence *et al.,* 2019).The study of Mathematics according to Samami and Popoola (2016), fosters logical thinking, emphasizes precision in language and notation and improves pattern recognition, encourages multiple ways of looking at a particular problem. Furthermore, the author opined that it increases one's ability to understand the complex world in which we live and helps us to make sense of our world and appeals to our senses of beauty and reason. Hamza and Timayi (2018) pointed out that Mathematics is the gate and key to science. No other subject has greater application than mathematics, to have a good degree in the following areas; Chemistry, Physics, Engineering, Biology, Pharmacy, etc needs good knowledge of mathematics (Achimugu, & Ekene, 2021). Mathematics is relevant to everyday life and can be seen as the pivot on which all other subjects revolve. The importance of Mathematics to nation building has led the Federal Government of Nigeria, to make Mathematics a core subject to be offered by students at all levels of education in Federal Republic of Nigeria (FRN, 2014). Anaduaka and Okafor (2014) noted that Mathematics is a compulsory subject require for entry into university education especially for science related courses. David (2014) regarded Mathematics as both the queen and servant of all the sciences. Undoubtedly, Mathematics is the queen of science and language of nature. Its importance should be clear to any reasonable person. Also, the importance of Mathematics studies in Nigeria has continued to generate a great deal of interest. Adeleke (2014) stated that Mathematics is a fundamental subject which plays a cogent role in understanding and applying concepts in sciences as well as in grappling with the complexities of modem technology useful to mankind, which is all about providing solution to human

problems. Ezeugwu and Igbo (2014) described Mathematics as indispensable tool in the study of sciences, humanities and technology. Mathematics is the key and backbone of almost all the school subjects, offered at any level of education.
Mathematics encourages the habit of self -reliance and assists learners to think and solve their problems themselves. Its knowledge indeed equips individuals with the skill to solve a wide range of practical tasks and problems they may encounter in life and in vocations (Anaduaka, 2016). The importance of mathematics that compelled the Federal Government of Nigeria to make mathematics a compulsory subject from the primary school to through to the end of the senior secondary school education. Sunday (2020) argued that mathematics is not only the language of sciences, but essential nutrient for thought, logical reasoning and progress. Mathematics liberates the mind and also gives individuals an assessment of the intellectual abilities by pointing towards direction of improvement. He concluded by saying that mathematics is the basis of all sciences and technology which application cut across all areas of human knowledge. The essence of Mathematics therefore lies in its beauty and its intellectual challenge. Both Scientific breakthrough and technological development are facilitated by the precise language of Mathematics. This means that there is a strong link between progress in mathematics and technological advancement. Thus, every man requires a certain amount of competence in basic topics in mathematics for the purposes of handling money, prosecuting daily businesses, interpreting mathematical graphs and charts as well as thinking logically. In spite of all these significance of mathematics, the subject is still seen as a difficult one and has generated phobia among learners (Hafiz, *et al.,* 2022). The disparity in scholastic achievement of students in Nigeria has been and is still a source of concern and research interest to educators, government and parents. This is so because of the great importance it has on the national development of the country. All over the country, there is a consensus of opinion about the fallen standard of education in Nigeria (Samuel, 2018). Parents and government are in total agreement that their huge investment on education is not yielding the desired dividend (Anyaoku & Agbo, 2020). Teachers also complain of students' low achievement at both internal and external examinations. The annual releases of Senior Secondary Certificate Examination. The Chief Examiner's report West Africa Examinations Council (WAEC, 2022) has revealed that one of the problems encountered by students in mathematics is their inability to recall mathematical processes. In a statement signed and released by the Acting Head, Public Affairs, WAEC Nigeria, Moyosola Adesina, 46,267 out of the 80,904 candidates that sat for the examination, scored a minimum of five credits. This translates to 57.19% candidates obtained credit and above in a minimum of five subjects with or without Mathematics). 35,830 candidates representing 44.29% obtained credit and above in a minimum of five subjects, including Mathematics. .The empirical evidence of low student achievement in mathematics

in Nigeria is clear. The pass rate for the SSCE in mathematics has been declining steadily over the past five years, from 60% in 2016/2017 to 50% in 2021/2022. This means that half of all students who sat for the SSCE in mathematics in 2021/2022 failed the exam. This is associated with methods by which it is being taught in the class. Hence mathematics concepts need to be taught to the students in a way or method that touches their sub-consciousness. This can trigger quick reproduction of the concept being taught or experienced. West Africa Examinations Council Chief Examiner (WAEC, 2022) reported that the general performance of candidate over the three years 2016-2022 is indicative of poor quality of education at the senior secondary school level. WAEC maintained that the low level of performance calls for assessment and review of the methodologies for the teaching and learning of mathematics (see Appendix A, page 93). However, Oyugi (2018) posited that students' poor achievement in mathematics is influenced by mathematics anxiety, mathematics habit, inadequate learning and teaching resources, poor teaching strategies and teaching and learning environments. Shaikh (2018) further acknowledged that habit and anxiety towards mathematics can be influenced by the immediate environment. Environmental factors such as, family, school, peer group, teachers, etc are associated with the surrounding where the students learn mathematics and can influence their learning positively or negatively. Adigun and Sam-kayode (2018) who had earlier identified problems of mathematics learning as students' perception of same to be highly theoretical and meaningless, they found that students tend to view mathematics as overly theoretical and lacking practical relevance, which could pose challenges for their engagement and comprehension of the subject. The author further observed that teachers adopt poor methods in the teaching of mathematics in schools, and that high percentage of the relatively small number of the available textbooks does not reflect the culture of the Nigerian children. The authors submitted that mathematics teachers often say mathematics is useful but failed to show its usefulness. Hence, most students could not see reason for studying mathematics. Akanmu and Fajemidagba (2015) opined that the search for the causations of poor performance in mathematics is unending and some of the major factors they put forward are: poor methods of teaching, low self-esteem/self-efficacy, poor study habits and poor interpersonal relationships.

Study habit is said to be a settled pattern of learning or discovery about a particular thing over a given period of time. Habits are formed as a result of constant practice of a skill over a long period of time. This means that every repetition of that skill furnishes or strengthens a particular pattern of behaviour whether good or bad, leading to a habit formation. Habit as defined by Duckworth (2016) is a thing that is done often, almost without thinking and it is hard to stop, while to study is to give ones, time, attention and devotion to learning seriously about a subject. Bringing all these together, Adaramola (2014) and Alston (2017) see study habit as

a desired repetitive pattern of studying a subject. Study habits according to Fleming, (2014) is the regular tendencies and practices that one depicts during the process of gaining information through learning or behaviours used when preparing for test or learning material. It could be the basic methods that people use to study topics or to learn subjects especially while they are in school which means basically, that they are doing the best they can to get the grades they want. A review of study habits shows that examples abound over the whole range of learning. Types of study habits include: muscular study habits such as: writing, knitting or swimming; moral study habit which includes diligence and truthfulness; attitudinal study habit, which involves a way of thinking; social study habit, which is the development of taste, such as neatness and courtesy; verbal study habit, which involves the use of words and study habit, which is purely performance. All these can be formed either in a bad way, which will lead to poor achievement or in a good way which will enhance achievement. Good study habit according to Akporehwe and Onwioduokit (2015), will make learners rational in thinking, curious, open- minded, objective, honest, humble and never suspicious. It makes the learners to becomes bold and competent, dynamic and productive, ambitious and industrious, self-motivated and confident, single minded and self-controlled.

The student's habit towards mathematics can also be connected to the student family background. Soni and Kumari (2017), in their study asserted that parental mathematics and habit may lead to mathematics performance and influence students' habit towards mathematics. When the parents' study habits are high, that of their children increase especially if they help them in doing their homework at their early age. This is because parents express to their own children their own dislike and frustration with mathematics. According Maloney *et al.,* (2015), such habit can be transmitted socially to students during early learning. More so, teachers with negative feeling towards mathematics may unintentionally pass on these negative habits and anxiety to their students (Scarpello, 2017). Moreover, the learning of mathematics is not an easy task, no matter the level. The abstract nature of certain aspects of mathematics alone is enough signal to make students dodge from learning mathematics or create anxiety which may hinder effective learning of the subjects. Agwagah (2016) summarized the findings of over 100 studies on the relationship between gender and performance in mathematics, and find that girls tend to outperform boys in mathematics at the early elementary school level, but the gap narrows and eventually disappears by the end of high school. However, even though there is no overall gender gap in mathematics achievement in high school, girls are still less likely than boys to take advanced mathematics courses and to pursue careers in mathematics and science (Agwagah, 2016). A number of teaching strategies, have been employed to enhance achievement in Mathematics, to no avail. The researcher therefore wonders if there other factors like self-efficacy,

study habits, could influence students achievement in mathematics. Hence this study examined study habit as correlates to senior school students' achievement in mathematics with gender as a moderator variable.

Statement of the Problem

The issue of decline of students' performance in mathematics has been consistently reoccurring issues as mathematics is compulsory subject in Nigeria. As student find mathematics very difficult in their exam. The record of student performance in the (SCE) mathematics as reported by WAEC Chief Examiner form 2016 to 2023 have shown a consistently low level of achievement. Difference researcher have discover multiple factors contributing to negative achievement in mathematics. These factors include lack of teaching material, lack of qualified teachers, socioeconomics factors, self-discipline, social media, school management system, teaching strategy, friends, and financial status and so on. Through this some researchers have been conducted on the factors responsible for students' low performance in mathematics as regards to teachers factors parental support background of students and interest of data. Nigeria aspiration towards scientific and technological advancement is the propelling force that need, nothing short of good achievement in mathematics at all level of schooling. Since education starts form the home, one will wonder why there is great increase in mass failure in mathematics with the number of instructors, facilitator, educators, educationists, teachers, and academia in this nation. The phobia for mathematics as subject matter has driven a large number of students form putting enough ability into the discovery of the subjects to creating false impressions about mathematics on their own. In addition the poor achievement of students is a great challenge and concern to those in field of mathematics, education, physicist, psychologists among others. Will students study habit be a correlates to students achievement in mathematics in senior secondary schools?

Research Questions

The following research questions guided the study;

1. What is the relationship between study habits and students' performance in mathematics?
2. What is the relationship between study habits, based on and gender, and students' performance in mathematics?

Research Hypotheses

The following null hypotheses were formulated and tested at an alpha level of 0.005 of significance.

H_{01}: There is no significant relationship between study habits and students' performance in mathematics.

H_{04}: 4There is no significant difference in the relationship between study habits and performance in mathematics based on gender.

Methodology

This study adopted a correlational survey research design. Achimugu *et al.*, (2024) explained that correlational research design seeks to establish relationship that exists between two or more variables and assess the statistical relationship among two or more variables. Usually, such studies indicate the direction and magnitude of the relationship between the variables. A correlational research design was used in this study because it involved measuring two or more variables and assessing the relationship in order to determine predictor(s) among the variables. The population of the study consists of 4364 (2,885 male and 1, 479 female) senior secondary school two (SS I) Mathematics students from 43 public secondary schools in Dekina Education zone. (Source: Kogi State Science, technical Education and teaching service commission, Zonal Education, 2024). Three instruments were used for data collection are Mathematics Study Habits Questionnaire, (MSHQ), Mathematics and Mathematics performance Test (MAPT) developed by the research. Mathematics Study Habits Questionnaire comprises of two sections (A and B). Section A: elicit information on the bio-data of the respondents, which consist of class, gender and school name. Section B: elicit information on Mathematics study habit. The section contain 25 items rated on 4 point likert type of SA: Strongly Agree (4); Agree (3), D: Disagree (2), and SD: Strongly Disagree (1). Mathematics performance Test (MAPT), elicit information on Mathematics students' performance Test. This contains 30 questions with four options (A, B, C and D to each question. This served as proforma for Mathematics students' performance. Linear equations, essential for solving problems involving variables with exponent 1, and set theory, which deals with relationships among collections of objects, are chosen due to their foundational importance in mathematics education. Mastery of these topics not only provides students with essential problem-solving skills but also lays the groundwork for comprehending more complex mathematical concepts. By including questions on linear equations and set theory in the MAPT, educators gain valuable insights into students' mathematical reasoning abilities and can tailor instruction to address specific areas of weakness, ultimately promoting performance in mathematics The instruments were face validated by three experts in Science Education Department (Measurement and Evaluation and Education/Mathematics Units) Faculty of Education, Prince Abubakar Audu University, Anyigba. The experts were required to validate the instrument with respect to clarity of the items, relevance, appropriateness of the identified factors, and the appropriateness of the item under each of the sections. Based on the experts' comments, corrections and suggestions, the instruments were modified. Like making the language more simple for the respondents or medication of question and removal of questions that are to fit for the research objectives. To determine the construct validity of the instruments, (study habit) factor analysis was

carried out as follows: the modified instruments of thirty (30) and (25) items were subjected to factorial validation for construct validity using factor analysis.

Results

Research question one: What is the relationship between study habits and students' performance in mathematics?

Table 1

Pearson's Product Moment Correlation Analysis of the Predictive Power of Study Habit and Students' Performance in Mathematics

Variable	N	r	$\bar{x}$
SD			
Study Habit			63.29
3.548	366	0.85	
Students' Performance	95.69	4.134	

r = Pearson's Product Moment Correlation

The result of the study as presented in Table 1 shows the correlation coefficient of the predictive power of study habit on students' performance in Mathematics in Kogi State, Nigeria. Result shows that the correlation coefficient of study habits and students' performance in Mathematics was 0.85. This means there was a high and positive relationship between study habit and students' performance in Mathematics.

Research question two: **what is the relationship between study habit based on gender and students' performance in mathematics?**

Table 2

Pearson's Product Moment Correlation Analysis of the Predictive Power of Study Habit Based on Gender and Students' Performance in Mathematics

Groups	Male			Female		
	N	$\bar{x}$	SD	$\bar{x}$	SD	N
Study Habit	180	63.24	3.552	63.34	3.552	186
Student Perform.		95.30	5.114	96.07	2.849	
R		0.27		0.22		

r = Pearson's Product Moment Correlation

The result of the study as presented in Table 2 shows the correlation coefficient of the predictive power of study habit based on gender and students' performance in Mathematics in Kogi State, Nigeria. Result shows that the correlation coefficient of study habit based on gender and students' performance in Mathematics was 0.27

for male and 0.22 for female. This means there was a low and positive relationship between study habit based on gender and students' performance in Mathematics.

Hypothesis One: There is no significant relationship between study habits and students' performance in mathematics.

Table 3

Regression Analysis of Study Habit and Students' Performance in Mathematics

Model		Sum of Squares	Df	Mean Square	F	Sig.	Dec.
1	Regression	45.46	1	45.46	2.67	0.01	S
	Residual	6192.66	364	17.013			
	Total	6238.11	365				

α = 0.05, S = Significant

The result in Table 3 shows the regression analysis of the predictive power of study habit on students' performance in Mathematics in Kogi State Nigeria. Result shows that an F-ratio of 2.67 with associated exact probability value of 0.01 was obtained. This exact probability value of 0.01 is less than 0.05 level of significance set as bench mark for testing the hypothesis and the result was found to be significant. The null hypothesis which stated that there is no significant relationship between study habit and students' performance in Mathematics is therefore rejected and inference draw is that, study habit significantly predict students' performance in Mathematics in Kogi State, Nigeria. This also implies that study habit is a significant predictor of students' performance in Mathematics.

Hypothesis Four: There is no significant relationship between study habit based on gender and students' performance in mathematics.

Table 4

Regression Analysis of Study Habit Based on Male Gender and Students' Performance in Mathematics

Model		Sum Squares	ofDf	Mean Square	F	Sig.	Dec.
1	Regression	341.991	1	341.991	14.027	0.00	S
	Residual	4339.809	178	24.381			
	Total	4681.800	179				

α = 0.05, S = Significant

The result in Table 4 shows the regression analysis of the predictive power of study habit based on male gender and students' performance in Mathematics in Kogi State Nigeria. Result shows that an F-ratio of 14.027 with associated exact

probability value of 0.000 was obtained. This exact probability value of 0.000 is less than 0.05 level of significance set as bench mark for testing the hypothesis and the result was found to be significant. The null hypothesis which stated that there is no significant relationship between study habit based on gender and students' performance in Mathematics is therefore rejected and inference draw is that, study habit significantly predict male students' performance in Mathematics in Kogi State, Nigeria. This also implies that study habit is a significant predictor of male students' performance in Mathematics.

Table 5

Regression Analysis of Study Habit Based on Female Gender and Students' Performance in Mathematics

Model		Sum Squares	ofDf	Mean Square	F	Sig.	Dec.
1	Regression	73.622	1	73.622	9.483	0.002	S
	Residual	1428.469	184	7.763			
	Total	1502.091	185				

α = 0.05, S = Significant

The result in Table 5 shows the regression analysis of the predictive power of study habit based on female gender and students' performance in Mathematics in Kogi State Nigeria. Result shows that an F-ratio of 9.483 with associated exact probability value of 0.002 was obtained. This exact probability value of 0.002 is less than 0.05 level of significance set as bench mark for testing the hypothesis and the result was found to be significant. The null hypothesis which stated that there is no significant relationship between study habit based on gender and students' performance in Mathematics is therefore rejected and inference draw is that, study habit significantly predict female students' performance in Mathematics in Kogi State, Nigeria. This also implies that study habit is a significant predictor of female students' academic performance in Mathematics.

Discussion of the Findings

Relationship between study habits and students' performance in mathematics

The result of the study shows that there is a high and positive correlation between study habits and students' performance in mathematics. The result shows that students' study habit is a significant predictor of students' performance in Mathematics. This equally implies that students' study habits significantly accounted for students' performance in Mathematics. This finding is true because when students dedicate time for studying mathematics outside of classroom, taking organized notes while learning mathematics, regularly review their mathematics class notes, practices past mathematics exercises, collaborating with classmates among others, they will perform significantly well in mathematics.

The result of the study agrees with Adeoye and Salami (2017) who investigated the relationship between study habits and performance of senior secondary school students in mathematics in Katsina Metropolis, Nigeria and found among others that there was a positive correlational and significant relationship between study habits and performance in mathematics. The result also agrees with Uzoigwe and Ogbonna (2018) who carried out a study on the relationship between study habits and mathematics performance among 250 senior secondary school students in Umuahia Education Zone, Abia State, Nigeria and found a significant positive correlation between study habits and mathematics performance ($r = 0.72$, $p < 0.001$). Also, the finding is consistence with Okonkwo and Ugwu (2019) who examined the impact of study habits on the mathematics performance of 300 senior secondary school students in Anambra State, Nigeria and found a significant positive correlation between study habits and mathematics performance ($r = 0.68$, $p < 0.001$). It is no doubt therefore that students' study habits significantly accounted for the variable in students' performance in Mathematics.

The relationship between study habits based on gender and students' performance in mathematics

The findings of the study showed that there was a positive relationship between study habit based on male and female students and students' performance in Mathematics. This means that gender, being a male or female, has a considerable influence on students' study habits in Mathematics. The result from the test of hypothesis four equally shows that the amount of variation in students' performance in Mathematics that is attributed to study habits based on gender is statistically significant. This implies that, study habit significantly predict male and female students' performance in Mathematics in Kogi State, Nigeria. The finding also, agrees with Akinleke and Adeaga, (2014) who investigated on the combined effect of study habits, and locus of control on the performance of college students in Nigeria and found that study habits, and locus of control significantly predicted performance of students in Mathematics. The finding contradict Syokwaa, et al (2017) who investigated potential gender differences in study habit and performance among secondary school students in Makueni County, Kenya and found no significant gender differences were found in performance. The finding also adds credence to the finding of the study by Lawrence, (2014), which also showed that there was a significant influence of gender on student study habits and performance. Hence, gender was a significant determinant of students' study habits, as portrayed by the findings of this study.

Conclusion

Based on the findings of the study, it is therefore concluded that study habits is a significant factor in determining students' performance in Mathematics. It is also concluded that study habits, text anxiety, gender all accounted significantly for the variation in students' performance in Mathematics. It is concluded that there was a

positive and low relationship between study habit based on male and female students and students' performance in Mathematics. Male and female students and students' performance in Mathematics, that, study habit significantly predict students' performance in Mathematics in Kogi State, Nigeria,. Also study habits significantly predict students' performance in Mathematics in Kogi State, Nigeria. Furthermore, study habits significantly predict male and female students' performance in Mathematics in Kogi State, Nigeria.

Recommendations

From the findings of the study, the following recommendations are made:

1. Students should be taught to have clear understanding of their uniqueness, this will enable the students to develop learning lifestyles or study habits that will be suitable and which might lead to performance.
2. Students should also be taught to develop their cognitive ability through critical thinking and reasoning. The cognitive styles when properly developed can lead to students' performance in mathematics.
3. The teachers should equally understand students' peculiarities with regards to emotional intelligence and cognitive styles. This will help the teachers to plan lessons and teachings so as to accommodate and carry every student along. Also, it will help teachers understand various performance levels of students and give the teachers opportunity to attend to low performance.

References

Achimugu, L. & Ekene N. L. (2021). The role of mole concept in simplifying mathematical tasks. Home Rehabilitation Medicine Role, *54*(1). *Retrieved from Journal of Science Teaching of Nigeria.* website: http://www.jstn.com/0795-7270/

Adaramola, O. (2014). Factors affecting the study habit of mathematics students in secondary schools. *Journal of Educational Research and Development, 1*(1), 34-44.

Adeleke, O. A. (2014). The importance of mathematics education in Nigeria. *Journal of Educational Research and Development, 10*(1), 11-20.

Adeoye, F. A., & Salami, O. O. (2017). *Relationship between study habits and achievement of secondary school students in mathematics in Katsina Metropolis*, Nigeria. ABACUS, 42(2), 1-11.

Adeoye, T & Salami, T. (2017). An investigation of the relationship between study habits and performance of senior secondary school students in Makurdi, Nigeria. *International Journal of Research and Innovation in Education (IJERIE), 4*(1), 31-42.

Agwagah, J. N. (2016). Gender and performance in mathematics: A review of empirical studies. *Journal of Educational Research and Review*, *11*(2), 116-128.

Ahmad, N. (2016). Utilitarian Role of Mathematics in the Development of Society. *Journal of Education and Practice*, *7*(27), 1-5.

Akanmu, M. A & Fajemidagba, M. O. (2015). Factors affecting students' performance in mathematics: A review of literature. *International Journal of Education and Research*, *5*(4), 103-112.

Akindele-Salisu, S. O & Adepoju, S. O. (2015). Effects of parental involvement and study habits on students' achievement in secondary school mathematics in Ogbomoso, Nigeria. *Education Research and Reviews*, 10(8), 706-714.

Akinleke, O. F. & Adeaga, A. A. (2014). The Joint Interaction of Mathematics, Study Habits, and Locus of Control on the Performance of College Students in Nigeria. *Journal of Research in Education, 1*(3), 04-13.

Akporehwe, S. O. & Onwioduuokit, F. U. (2015) Enhancing scientific attitude through activity based approaches. *Nigeria journal of science and science education (NJSSE) 2*(8)87_101

Alston, J. (2017) principle for becoming an achieve in life. Curled from http.qq//WWW.tasicmanagementguide.com

Anaduaka, G. O & Okafor, E. E. (2014). The importance of mathematics in secondary school education. *Journal of Educational Research and Development, 10*(1), 1-10.

Anaduaka, G. O. (2016). The importance of mathematics in secondary school education. *Journal of Educational Research and Development, 10*(1), 1-10.

David, F. (2014). The importance of mathematics in the development of science and technology. *International Journal of Mathematics Education,* 6(1), 1-10.

Duckworth, A. (2016). Grit: *The power of passion and perseverance*. : Scribner.

Fleming, S. (2014). Study habits: A review of the literature. *Educational Psychology Review*, *26*(1), 131-146.

Hafiz, M. M., Musa, A. A., Muriana, R. O., Joy, E. E., & Christiana, U. B. (2022). Challenges in Mathematics Education: A Focus on Nigeria. *International Journal of Research and Innovation in Applied Science, 3*(SI), 181-187.

Kogi State Science, Technical Education and Teaching Service Commission, (2024). Unpublished Distribution of senior secondary school two (SS II) Mathematics students STETCOM Press

Lawrence, A, Salihu A. M, & Kanji, T. D., (2019). Effects of concepts mapping instructional strategy on students' performance in number and numeration in Kogi State. *Journal of the science teachers association of Nigeria, 2*(1), 105-113.

Lawrence, A. S. A. (2014). Gender differences in study habits and achievement among university students in Ghana. *International Journal of Educational Administration and Policy Studies, 6*(8), 151-157.

Maloney, E. A., Ramirez, G., Gunderson, E. A., Levine, S. C & Beilock, S. L. (2015). Intergenerational effects of parents' math anxiety on children's math achievement and anxiety. *Psychological Science*, *26*(9), 1465-1474.

Meredith, G. M. (1969). Dimension of faculty of course evaluation. *Journal of Psychology 73*, 27, 32.

Mohammed, S. A. & Achimugu, L. Kanji, T. D., (2019). Effects of concepts mapping instructional strategy on students' performance in number and numeration in Kogi State. *Journal of the science teachers association of Nigeria, 2*(1), 105-113.

Okonkwo, C. I & Ugwu, A. E. (2019). *Impact of Study Habits on the Mathematics Achievement of Senior Secondary School Students in Anambra State, Nigeria*. *International Journal of Science and Education, 8*(2), 329-338.

Okonkwo, N. J., & Ugwu, M. E. (2019). *Impact of study habits on the mathematics achievement of senior secondary school students in Anambra State,* Nigeria. ABACUS, *44*(1), 1-12.

Oyugi, K. J. (2018). Factors affecting students performances in mathematics at KCSC level in selected mixed secondary school in Njiru .sub county; Nairobi *(Doctoral dissertation university of Nairobi).*

Samami, S & Popoola, A. A. (2016). The importance of mathematics in teaching and learning. *International Journal of Education and Research, 5*(4), 62-68.

Samuel, O. (2018). The fallen standard of education in Nigeria: Causes and solutions. *Journal of Educational Research and Development, 12*(2), 1-10.

Scarpello, G. (2014). Helping Students Get Past Math Anxiety. *Techniques: Connecting Education and Careers, 82*(6), 34-35.

Scarpello, G. (2017). Helping students get past mathematics anxiety. *Techniques: Connecting Education and Careers, 82*(6), 34-35.

Shaikh, S. N. (2018). Mathematics anxiety factors and their influence On performance in mathematics in selected international schools in Bangkok. *Journal of Education and Vocational Research, 4*(3), 77-85.

Soni, A & Kumari S. (2017). The role of parental math Anxiety and math Attitude in their children's math achievement. *International Journal of Science and Mathematics Education, 15*(2), 331-347.

Sunday, A. O. (2020). The essential role of mathematics in education. *International Journal of Education and Research, 9*(8), 1-10.

Syokwaa, K. A., Aloka, P. J. O., & Shiundu, J. O. (2014). Potential gender differences in study habit and achievement among secondary school students in Makueni County, Kenya. *Journal of Educational and Social Research, 4*(7), 153-160.

Syokwaa, K. A., Aloka, P. J. O., & Shiundu, J. O. (2017). Potential gender differences in mathematics and achievement among secondary school students in Makueni County, Kenya. *Journal of Educational and Social Research, 4*(7), 153-160.

Uzoigwe, C. U., & Ogbonna, E. A. (2018). The relationship between study habits and mathematics achievement among senior secondary school students in Umuahia Education Zone, Abia State, Nigeria. *International Journal of Education and Evaluation, 4*(2), 1-11.

West African Examinations Council (WAEC) (2022). *Statistics and results of the West African Senior School Certificate Examination (WASSCE) for School Candidates, 2022.* Lagos, Nigeria: WAEC.