



## **Psychological Factors as Correlates of Learned Helplessness in Mathematics among Senior Secondary School Students in Rivers State Nigeria**

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### **ABSTRACT**

The study investigated psychological factors as correlates of learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria. A correlational research design was adopted for the study. The Taro Yamene's formula was used to arrive at a useable sample size of 395 respondents from the population of 32126 public senior secondary school students from three senatorial districts in Rivers State Nigeria, based on academic report from secondary education board in Rivers State Nigeria. A researcher structured questionnaire titled "Psychological Factors Scale (PFS) and Learned Helplessness Scale (LHS)" were used to elicit information for the study on the extent of relationship between anxiety, self-efficacy, locus of control and learned helplessness. The instruments were validated by experts in the field of education while Cronbach Alpha technique was used to establish the reliability coefficient and reliability coefficient of 0.73 was obtained for anxiety, self-efficacy 0.75 locus of control 0.60 and learned helplessness 0.80 to ascertain that the instrument was reliable. Out of 395 copies of questionnaire distributed, only 390 used for the analysis of the study were retrieved. Descriptive statistics of mean and standard deviation were used in analyzing the stated research questions while inferential statistics of Pearson Product Moment Correlation was used to test the formulated null hypotheses at 0.05 level of significance. Findings of the study revealed that anxiety, self-efficacy and locus of control have positive significant relationship with learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria. It was concluded that anxiety, self-efficacy and locus of control relate to learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria. It was therefore recommended among other things that school counsellors through cognitive behavioural therapy that can replace feelings of the learned helplessness with a sense of learned optimism should assist students realize the popular misconceptions and commonly held beliefs about mathematics are not true as learned helplessness in mathematics is supported by a variety of cultural attitudes that undermine mathematics achievement. Teacher training that develops educators' mathematics skills, positive attitude toward mathematics and new research based best practices for teaching mathematics should be put into consideration by education board or ministry of education.

**Keywords:** Learned helplessness, Anxiety, Self-efficacy, Locus of control.

### **INTRODUCTION**

Learned helplessness can be described as the belief that our own behavior does not influence what happens next; that is, behavior does not control outcomes or result. Usually when individuals feel they have no control over their situation, they might begin to behave in a helpless manner. Helplessness is a severe problem that affects every area of human endeavors. A feeling of lack of control in the environment by an individual may likely impair learning in certain situations. Over the years it has been observed that many students have shown lack of control in achieving success in academics in different subjects, especially in mathematics and educators are faced with the challenging task of educating students who learn in unique and individual ways. Some students may show persistence in

the face of failure, whereas others may give up. Thus uncontrollability, passivity and lack of motivation to engage in challenging task, may lead to learned helplessness. The helpless feeling may be associated with a lot of psychological problems, such as anxiety, low self-esteem, and lack of motivation, phobia and even depression (Ekeh & Nwanze, 2015). The feeling may result from negative experiences in the past or situations beyond ones control. Children who develop learned helplessness are at serious risk for negative affect, negative expectations, decreased performance and avoidance of challenging tasks (Burhans & Dweck, 2014).

Diener and Dweck (2012), viewed learned helplessness as the perceived inability to surmount failure. It is described as the helplessness and resignation learned when a human perceives no control over repeated bad events; a condition resulting from the perception that one has no control over one's environment (Schultz & Schultz, 2005).

Sedek, Grzegorz and Kofta (2010) described learned helplessness as a state of cognitive exhaustion produced by non-productive problem solving. Seligman and Maier as cited in Qutaiba (2010), described learned helplessness as a condition which has been attributed to motivational, cognitive and emotional deficiencies; developing due to an exposure of an organism to a series of events independent of its behavior and not under its control. Ekeh and Nwanze (2015), are of the view that a student who has problem of learned helplessness in mathematics, tend to withdraw his or her effort or avoid mathematics in which he experiences learned helplessness. The affected student suffers decrease in motivation in learning and achieving success in that particular subject(s). Valas (2001), found that learned helplessness directly and indirectly relate with academic achievement. Helpless students have lack of confidence in their own abilities; they attribute their failures to personal inadequacy, low intelligence, poor memory or problem-solving ability and do not see the connection between their commitment and achieving success. For these reasons, they believe that successes are unlikely and failures are likely to occur, despite the presence of some experience of success which they attribute to external factors, such as unique circumstance or luck (Sorrenti, Fillipello, Susanna, & Caterina, 2016). Learned helplessness is characterized by passivity in academic tasks, especially those tasks that require persistence and the helpless student perceives them as challenges that they cannot cope with as a result, these students develop negative attitude towards tasks and may be overwhelmed with anxiety and frustration Ames, cited by (Yates, 2009) ). A student who had repeatedly failed in mathematics, despite his effort to achieve success, may conclude that achieving success in mathematics is beyond his/her control and will likely give up hope and effort in succeeding in the subject. Hence future effort to improve in the subject will be jeopardized due to predisposition.

Mathematics as a subject is vital to human existence and its importance is evident in every aspect of individuals' lives. It is a mandatory subject at both primary and secondary level of education in Nigeria due to its preparatory roles in the development of mankind. Hence a credit level performance in mathematics at senior secondary school certificate examination is a prerequisite for admission in any business, science or technology based courses in any tertiary institutions in Nigeria. The use and application of mathematics is evident in almost every aspect of our living such as buying and selling, measurement, tailoring, cooking, walking, running, engineering, building etc.

It is the foundation of all businesses, and meaningful/successful transactions depend on it. For buying and selling to succeed, ones abilities must be tuned to a point that he understands mathematical symbols and calculation; this will eliminate cheating amongst the parties involved to a large extent (Benson, 2016). Mathematics is the bedrock of science and technology based courses such as medicine, pharmacy, civil engineering, architecture, mechanical engineering, electronics, and computer science etc. It also play vital roles in social sciences and humanities such as economics, banking and finance, psychology, commerce, accounting, geography and so on. Adedjei (2007) stated that in the contemporary Nigeria, greater emphasis is being placed on industrial and technological development and as a result, students are been encouraged to take up science related subjects of which mathematics is the foundation. Adedjei also stated that, mathematical methods pervade literally in every field of human endeavor and also play a fundamental role in economic development of a country and working towards scientific and technological advancement in Nigeria a good performance in mathematics at all levels of education is inevitable. Understanding the concept of mathematics appears to be a challenging task for majority of students at the secondary education, yearly report of West Africa Examination Council (WAEC) in Nigeria shows a continuous low performance in mathematics subject. Bayaga and Wadesongo (2014) opined that student with

negative perceptions towards mathematics learning often form negative attitudes towards mathematics, which in turn could affect their learning and achievements. According to Gurganus (2010), mathematics achievement problems are usually due to combination of teaching and student factors including language, cognitive, meta-cognitive, motor, social and emotional factors, habits of learning and previous experiences.

Most researcher's emphasis cognitive ability of students to be responsible for poor performance of students in mathematics with no emphasis on non-cognitive factors that facilitates learning notwithstanding the effectiveness of affective domain in setting the students ready for learning especially in mathematics. A lot of psychological variables play significant roles in students' performance in mathematics and when these non-cognitive factors are overlooked, performance may decline. According to Gal and Ginsberg (2012) mathematics educators have primarily focused on cognitive skills and knowledge paying much less thought to non-cognitive factors such as depression, attitude, anxiety, motivations and feeling. Psychological variables such as anxiety, locus of control and self-efficacy ought to be addressed and properly looked into for a student to excel in mathematics. It has been documented that a learner will not learn until he / she is ready and prepared to learn. Therefore, the presence of cognitive domain does not guarantee high performance if other psychological variables are ignored. According to Eduwem, Umoinyang and Otu (2013) psychological factors which influence the performance of secondary school students in mathematics include; self-concept, locus of control, study habit, career plan / aspiration, text anxiety, attitude towards mathematics, motivation and interest in schooling.

One astonishing discovery about the poor performance of the students in mathematics is the phobia of the subject. Many students get frightened when asked to do mathematics work or undertake courses related to mathematics or involving mathematics. They give up their effort and interest even before the lesson commences. Students with negative perceptions towards mathematics learning often form negative attitudes towards mathematics, which in turn could affect their learning achievement (Aszunarni & Ruhizan, 2017; Bayaga & Wadesango, 2014). Students who would have been very good at mathematics failed to make progress because of the fear and anxiety they develop each time mathematics is presented before them. Makari (2013) defined anxiety as a general term for several disorders that causes nervousness, fear, apprehension and worrying. A student who expresses anxiety or fear probably because of his / her belief about the subject, societal perception of the subject or past experience about mathematics is already doomed for failure. Mathematics anxiety is defined as "the panic, helplessness, paralysis and mental disorganization that arises among some people when they are required to solve a mathematical problem (Fiore, 2014). The fear and anxiety make students to reject mathematically related course, dodge classes and even avoid schooling.

The problem of low performance in mathematics is an age-long thing. The problem has moved from generations to generations, parents to offspring and made most people in the society to see mathematics as a complex subject. Fiore (2014) asserted that parents with mathematics anxiety pass it along to their children; teachers with mathematics anxiety pass it along to their students. Mutodi and Ngirande (2014) stated that students who have had bad experiences learning mathematics often develop phobia and, in turn, struggle learning various concepts because they feel they are unable to learn mathematics. Students who continually perform below expectations in mathematics, tend to be helpless and always try to avoid mathematics and mathematically related courses. According to Pries and Biggs (2012), mathematics avoidance is in phases which are seen to be circular in nature. In phase one, the person experiences negative reaction to mathematics which leads to phase two, in phase two, the person avoids mathematics situations which leads to phase three; poor mathematics preparation and finally phase four; poor mathematics performance. This circle is a continuous one as the person continuous to express anxiety over mathematics.

Also an individual's level of self-efficacy, can play significant role on how an individual faces different challenging task in life, including academics, Expectation of self-efficacy determine whether an individual will be able to exhibit coping behavior and how long effort will be sustained in the face of difficulties. This implies that the strength of one's belief in one's own ability to complete task and reach goals can greatly effect one's behavior in achieving success .If a person's sense of self-efficacy is low, he or she may likely develop learned helplessness. Self-efficacy is therefore described as the belief or confidence in one's capabilities to complete a task or achieve a goal (Moghadam & Tahmassian 2011).

Self-efficacy determines how people feel, think, motivate themselves and behave. A strong sense of self-efficacy tends to enhance human accomplishments and personal well-being in many ways. People who doubt their capabilities shy away from difficult tasks, which they view as a threat. They have low aspirations and weak commitments to goals they choose to pursue. They are likely to fall easily to stress and depression unlike those with high self-efficacy (Moghadam & Tahmassian 2011.)

Students with strong sense of self efficacy, are likely to challenge themselves with difficult tasks and be intrinsically motivated. The students will put forth high degree of efforts in other to meet their commitments. The attribute failure to things which are in their control rather than blaming external factors. On the other hand, students with low self-efficacy have low aspirations which may result in disappointing academic performance, becoming part of a self-fulfilling feedback cycle (Margolis& McCabs 2016).

Students' styles of attribution can also be the root of learned helplessness in mathematics. Individuals or people attribute their failure or success to a particular cause, which could be internal or external. Attribution is seen as the factor that a person blames for the outcome of a situation. It is concerned with how individuals interpret events to themselves and also how this relates to their way of thinking and behavior. Attribution therefore, is described as how we attach meaning to our own or other's behavior (McLeod, 2010).

A stable attribution is one that doesn't change over time or across situation, while unstable attribution is that which changes over time or across situations. A global attribution refers to the belief that the factors affecting the outcome of an event applies to a large number of situations, not just one of them, while specific attribution describes that factors affecting the outcome of an event applies to one particular situation alone. According to Seligman, as cited in Schultz (2005), internal, stable, global attributions are likely to result in learned helplessness. Also Locus of control as a psychological factor refers to the extent to which people feel they have control over the events that influence their lives; it can influence not only how you respond to the events that happen in your life, but also your motivation to take action (Cherry, 2017). Some individuals accept their predicaments and conditions as they happen believing that they are to be blamed for failure while others shift such blame or attribute it to other factors such as environment, situation or other people.

Evidence suggest high number of learned helplessness students in mathematics among senior secondary schools in Rivers State Nigeria with no significant preventive and corrective measures to improve student outcome in the subject. However several studies have been carried out on psychosocial factors in relation to learned helplessness, but none has specifically been done on psychological factors as correlates of learned helplessness in mathematics among senior secondary school students in River State Nigeria. For an improvement in academic performance of students in mathematics through the review of likely psychological factors that constitute learned helplessness and also for the interest of education sector in Rivers State, Nigeria and across the globe the study is imperative.

### **Statement of the Problem**

Learned helplessness is a condition which has been attributed to motivational, cognitive and emotional deficiencies developing due to an exposure of an organism to a series of events independent of its behavior and not under its control. It is a motivational dilemma where an individual may have not succeeded in a task or two in the past which have made the individual believe that he/she is incapable to do anything in order to improve performance in that task. A helpless feeling tends to be associated with psychological tendencies such as lack of confidence, anxiety, depression worthless, hopeless, low self-efficacy, and external locus of control that makes an individual or students to exhibit anti-social skills, become the class clown, bully or tease in order to get recognition.

Students' competence is almost entirely destroyed with learned helplessness. Yearly report of West Africa Examination Council (WAEC) in Nigeria indicate continuous decline in mathematic performance among senior secondary school students. Students who have had continuous failure in mathematics tend to withdraw and avoid mathematics, they conclude successes in mathematics are unlikely and failures are likely to occur irrespective of other experiences of successes in the past. Consequent upon the observed learned helplessness in mathematics one wonders if the rate of poor performance by secondary school students is not as a result of psychological factors associated with learned helplessness.

### **Purpose of the Study**

The purpose of the study was to investigate psychological factors as correlates of learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria. Specifically the study sought to:

1. Determine the extent to which anxiety relates to learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria.
2. Determine the extent to which self-efficacy relates to learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria.
3. Determine the extent to which locus of control relates to learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria.

### **Research Questions**

The following research questions guided the study;

1. To what extent does anxiety relate to learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria?
2. To what extent does self-efficacy relate to learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria?
3. To what extent does locus of control relate to learned helplessness in mathematics among senior secondary school students in Rivers State?

### **Hypotheses**

The following null hypotheses were formulated and tested at 0.05 level of significance.

1. There is no significant relationship between anxiety and learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria.
2. There is no significant relationship between self-efficacy and learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria.
3. There is no significant relationship between locus of control and learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria.

## **METHODOLOGY**

The study adopted a correlational research design. Nworgu (2015) described correlational research design as that involving collection of data to determine whether and to what degree a relationship exist between two or more quantifiable variables. This design was considered appropriate for the study because the subjects of the study were drawn from 3 public senior secondary schools from each of 4 Local Governments Areas of the three senatorial districts in Rivers State Nigeria through simple random sampling by balloting. Proportional stratified random sampling was used to draw the learned helplessness students in mathematics. A sample of 395 learned helplessness students in mathematics was drawn from a population of 32126 using Taro Yamen formula. A researchers structured instruments titled "Psychological Factors Scale (PFS) and Learned Helplessness Scale (LHS)" were used to elicit information from respondents on the extent of relationship between the variables.

Three psychological factors variables namely anxiety, self-efficacy and locus of control were used for the study. Items 1-6 measures Anxiety, 7-12 measure Self-Efficacy, 13-18 measure Locus of Control while 6 items measure learned helplessness in mathematics. The scale was designed with the response based on a 4 point modified likert scale of Very high extent, High extent, Low extent, and Very low extent. A weighted mean of 2.50 indicated acceptance of research questions.

The instruments were subjected to face and content validity by experts in the field of measurement and evaluation also the instruments were subjected to cronbach Alpha technique for reliability coefficient and reliability coefficient of 0,73 was obtained for anxiety, self-efficacy 0.75 locus of control 0.60 and learned helplessness 0.80. Out of 395 questionnaires distributed a total of 390 were retrieved and used for analysis. Descriptive statistics of mean and standard deviation were used to analyze the research questions while inferential statistics of Pearson Product Moment Correlation was used to test the formulated hypotheses at 0.05 level of significance. A weighted mean of 2.50 indicates acceptance

**PRESENTATION OF RESULTS**

**Research Question 1:** *To what extent does anxiety relate to learned helplessness in Mathematics among senior secondary school students' in Rivers State Nigeria?*

**Table 1: Descriptive analysis of anxiety as it relates to learned helplessness in Mathematics among senior secondary school students in Rivers State Nigeria. (N=390)**

S/N	Anxiety and Learned Helplessness	M	SD	Remarks
1a.	During important exams I think that I am doing awful	3.04	1.34	High Extent
1b	No matter how much energy I put into mathematics task, I feel I have no control over the outcome	3.00	1.28	High Extent
2a	I finally remember the exam questions after exams is over	3.11	1.42	High Extent
2b	I feel that my own inability to solve mathematics problem is the cause of my failure.	3.34	1.82	High Extent
3a	When I study for my exams, I worry that I will not remember the material on the exam.	3.19	1.51	High Extent
3b	I cannot find solution to difficult mathematics problems.	3.50	2.07	High Extent
4a	The closer I am to a major exam, the harder it is for me to concentrate.	3.20	1.70	High Extent
4b	I don't place myself in mathematics situation which I cannot cope with.	3.14	1.71	High Extent
5a	I worry so much before a major exam that I am worn out to do my best on the exam.	3.84	2.34	High Extent
5b	I don't have the ability to solve most mathematics problems	3.00	1.28	High Extent
6a	After an exam, I worry about whether I did well enough.	3.01	1.30	High Extent
6b	I don't try a new mathematics task if I have failed similar task in the past	3.06	1.40	High Extent
	<b>Grand Score</b>	<b>3.20</b>	<b>1.60</b>	<b>High Extent</b>

**Source Survey Data 2019**

From table 1 above the mean and standard deviation scores of 3.04 and 1.34, 3.00 and 1.28, 3.11 and 1.42, 3.34 and 1.84, 3.19 and 1.51, 3.50 and 2.07, , 3.20 and 1.70, 3.14 and 1.71, 3.84 and 2.34, 3.00 and 1.28, 3.01 and 1.30, 3.06 and 1.40 agreed that to a high extent anxiety relates to learned helplessness. Finally the grand mean of 3.20 confirms that to a high extent anxiety relate to learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria.

**Research Question 2:** *To what extent does self-efficacy relate to learned helplessness in Mathematics among senior secondary school students' in Rivers State Nigeria?*

**Table 2: Descriptive analysis of self-efficacy as it relates to learned helplessness in Mathematics among senior secondary school students in Rivers State Nigeria. (N=390)**

S/N	Self-Efficacy and Learned Helplessness	M	SD	Remarks
7a	I can manage to solve difficult problems if I try hard enough	3.10	1.42	High Extent
7b	No matter how much energy I put into mathematics task, I feel I have no control over the outcome.	3.12	1.42	High Extent
8a	If someone opposes me, I can find the means and ways to get what I want.	3.08	1.42	High Extent
8b	I feel that my own inability to solve mathematics problem is the cause of my failure.	3.00	1.28	High Extent
9a	It is easy for me to stick to my aims and accomplish my goals	3.24	1.72	High Extent
9b	I cannot find solution to difficult mathematics problems.	3.16	1.47	High Extent
10a	I am confident that I can deal efficiently with unexpected events	3.09	1.42	High Extent
10b	I don't place myself in mathematics situation which I cannot cope with.	3.00	1.28	High Extent
11a	I can solve most problems, if I invest the necessary effort	3.13	1.42	High Extent
11b	I don't have the ability to solve most mathematics problems.	3.05	1.39	High Extent
12a	I possess leadership quality to accomplish a task	3.01	1.30	High Extent
12b	I don't try a new mathematics task if I have failed similar task in the past.	3.00	1.28	High Extent
<b>Grand total</b>		<b>3.08</b>	<b>1.40</b>	<b>High Extent</b>

**Source Survey Data 2019**

From table 2 above the mean and standard deviation scores of 3.10 and 1.42, 3.12 and 1.42, 3.08 and 1.42, 3.00 and 1.28, 3.24 and 1.72, 3.16 and 1.47, 3.09 and 1.42, 3.00 and 1.28, 3.13 and 1.42, 3.05 and 1.39, 3.01 and 1.30, 3.00 and 1.28 show that self-efficacy relates to learned helplessness. Finally the grand mean of 3.08 agreed that to a high extent self-efficacy relates to learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria.

**Research Question 3:** *To what extent does locus of control relate to learned helplessness in Mathematics among senior secondary school students' in Rivers State?*

**Table 3: Descriptive analysis of locus of control as it relates to learned helplessness in Mathematics among senior secondary school students in Rivers State.**

S/N	Locus of Control and learned Helplessness	M	SD	Remarks
13a	I get into trouble because my parents punish me too much	3.01	1.30	High Extent
13b	No matter how much energy I put into mathematics task, I feel I have no control over the outcome.	3.07	1.41	High Extent
14a	I believe that people's misfortunes result from the mistakes they make	3.08	1.42	High Extent
14b	I feel that my own inability to solve mathematics problem is the cause of my failure.	3.39	1.86	High Extent
15a	When it comes to good grade I am unlucky.	3.11	1.42	High Extent
15b	I cannot find solution to difficult mathematics problems.	3.21	1.71	High Extent
16a	I have often found that what is going to happen will happen.	3.14	1.47	High Extent
16b	I don't place myself in mathematics situation which I cannot cope with.	3.00	1.28	High Extent
17a	To me becoming a success is a matter of hard work, luck has little or nothing to do with it	3.96	2.41	High Extent
17b	I don't have the ability to solve most mathematics problems.	3.10	1.42	High Extent
18a	When I make plans, I am almost certain that I can make then work.	3.06	1.40	High Extent
18b	I don't try a new mathematics task if I have failed similar task in the past.	3.05	1.39	High Extent
<b>Grand Score</b>		<b>3.18</b>	<b>1.54</b>	<b>High Extent</b>
<b>Source Survey Data 2019</b>				

Table 3 with mean and standard deviation scores of 3.01 and 1.30, 3.07 and 1.41, 3.08 and 1.42, 3.39 and 1.86, 3.11 and 1.42, 3.21 and 1.71, 3.14 and 1.47, 3.00 and 1.28, 3.96 and 2.41, 3.10 and 1.42, 3.06 and 1.40, 3.05 and 1.39 indicate that locus of control relate to learned helplessness. Finally the grand mean of 3.18 agreed that to a high extent locus of control relates to learned helplessness in Mathematics among senior secondary school students in Rivers State Nigeria.



**Test of Hypotheses**

**Hypothesis 1:** There is no significant relationship between anxiety and learned helplessness in Mathematics among senior secondary school students’ in Rivers State Nigeria.

**Table 4: Correlation analysis between anxiety and learned helplessness in mathematics among senior secondary school students’ in Rivers State Nigeria**

Variables	M	SD	N	£XY	r-cal.	Df	LS	r-crit.	Decision
Anxiety & Learned Helplessness	3.50	2.07	395	12491	3.42	393	0.05	1.95	Rejected

**\*\*.** Correlation is significant at the 0.05 level (2-tailed)

Table 4 above shows that the calculated r-value of 3.42 is greater than the critical r-value of 1.95 for a two tailed test at 0.05 level of significance. It is imperative to reject the null hypothesis and conclude that there is significant relationship between anxiety and learned helplessness in Mathematics among senior secondary school students in Rivers State Nigeria.

**Hypotheses 2:** There is no significant relationship between self-efficacy and learned helplessness in Mathematics among senior secondary school students’ in Rivers State Nigeria.

**Table 5: Correlation analysis between self-efficacy and learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria**

Variables	M	SD	N	£XY	r-cal.	Df	LS	r-crit.	Decision
Self-efficacy & Learned Helplessness	3.24	1.72	395	11791	3.30	393	0.05	1.95	Rejected

**\*\*.** Correlation is significant at the 0.05 level (2-tailed)

The above table 5 shows a calculated r-value of 3.30 that is greater than the critical r-value of 1.95 for a two tailed test at 0.05 level of significance. This implies a positive relationship between self-efficacy and learned helplessness among secondary school students in Rivers State. Thus the null hypothesis is rejected.

**Hypothesis 3:** There is no significant relationship between locus of control and learned helplessness in Mathematics among senior secondary school students’ in Rivers State Nigeria.

**Table 6: Correlation analysis between locus of control and learned helplessness in Mathematics among senior secondary school students in Rivers State Nigeria**

Variables	M	SD	N	£XY	r-cal.	Df	LS	r-crit.	Decision
Locus of Control & Learned Helplessness	3.39	1.86	395	11950	3.40	393	0.05	1.95	Rejected

**\*\*.** Correlation is significant at the 0.05 level (2-tailed)

Table 6 above shows that the calculated r-value of 3.40 is greater than the critical r-value of 1.95 for a two tailed test at 0.05 level of significance. This result shows a positive relationship. Therefore the null hypothesis which states that there is significant relationship between locus of control and learned helplessness in Mathematics among senior secondary school students in Rivers State Nigeria was rejected.

**DISCUSSION OF FINDINGS**

The study found that there is a significant positive relationship between anxiety and learned helplessness in mathematics among senior secondary school students in Rivers State Nigeria. The findings further confirm the finding on “Exploring Mathematics Anxiety: Mathematics Students’ Experience by Mutodi and Ngirande (2014). The study examined students’ mathematics anxiety

levels at selected tertiary institutions in South Africa. The findings of the study indicated that there are high mathematics anxiety levels among the respondents. Also the finding is in agreement with that of Olango (2016) that investigated “Mathematics anxiety factors as predictors of self-efficacy and achievement among freshmen science and engineering students” in Ethiopia. The results showed that anxiety factors have significant direct effect on mathematics achievement. Anxiety is a feeling of worry, nervousness or unease about something with an uncertain outcome, Students who are continually uneasy about mathematics tend to be helpless and always try to avoid mathematics and mathematically related courses.

The study revealed that there is significant positive relationship between self-efficacy and learned helplessness in Mathematics among senior secondary school students in Rivers State Nigeria. The finding is in agreement with the finding on “learned helplessness and mastery orientation; the contribution of personality traits and academic beliefs” by Sorrenti, Fillippello, Buzzai, Butto and Costa (2017) the results of the study showed that personality traits and academic beliefs (in particular school self-efficacy) play an important role in explaining helpless behaviour. Self-efficacy is an individual’s confidence in his/her ability to complete a task or achieve a goal. Students with low self-efficacy have low aspirations which may result in disappointing academic performance.

The findings of the study also revealed that locus of control have a positive relationship with learned helplessness in Mathematics among secondary school students in Rivers State Nigeria. This finding is in consonance with the finding of Akinsola (2018) in “Relationship of some psychological variables in predicting problem-solving ability of in-service mathematics teachers”. The findings of the study revealed that locus of control among others have significant relationships with problem solving ability with mathematics. Whether a student has an internal or external locus of control it is assumed to have powerful effect on academic motivation, persistence and performance in academic. Students with an external locus of control can be assisted through a supportive learning environment.

## CONCLUSION

It was concluded that, anxiety, self-efficacy and locus of control relate to learned helplessness in Mathematics among senior secondary students in Rivers State Nigeria.

## RECOMMENDATIONS

Based on the findings and conclusion of this study, it is recommended that;

1. School counsellors through cognitive behavioural therapy that can replace feelings of learned helplessness with a sense of learned optimism should assist students realize that popular misconceptions and commonly held beliefs about mathematics are not true as learned helplessness in mathematics is supported by a variety of cultural attitudes that undermine mathematics achievement.
2. Teacher training that develops educators’ mathematics skills, positive attitude toward mathematics and new research based best practices for teaching mathematics should be put into consideration by education board or ministry of education.
3. Teachers should modify their teaching practices to accommodate students varied learning styles and also alter learning contexts through structured, orderly, supportive learning environment. Mathematics should be presented as a critical thinking and decision making tool rather than emphasising on drill and rote learning formula

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