

LOCUS OF CONTROL AND SELF-EFFICACY AS PREDICTORS OF ACADEMIC ACHIEVEMENT IN SENIOR SECONDARY SCHOOL MATHEMATICS IN LAGOS STATE, NIGERIA

O. M. Alade, S. Aletan

and

B. S. Sokenu

Abstract

This study sets out to determine the extent to which Locus of Control and Self-Efficacy predicts Students' academic achievement in Senior Secondary School Mathematics in Lagos State, Nigeria. Three hypotheses are tested and the sample size is 720 SSII Students selected by stratified random sampling from 3 Educational Districts of Lagos State. The instruments used for data collection are; Students' Personality Variables Scale (SPVS) and Mathematics Achievement Test (MAT). The reliability coefficient of the instruments are respectively $r = 0.80$ and $r = 0.75$. Pearson Correlation and Multiple Regression methods are used to analyse the data. The result of the analysis shows that there is a strong and significant relationship between the predictor variables and academic achievement in Mathematics and that Self-efficacy has a major role in predicting Students' academic achievement in Mathematics. The Implication of this study is that Education Planners and Policy Makers need to take into account the Students' personality variables in determining effective and appropriate strategies in teaching and learning Mathematics. The Study therefore recommends that Educational Programmes that will enhance the Students' Self-efficacy and Locus of Control should be designed for better performance of Students' academic achievement in Mathematics.

Keywords: Academic achievement, Self-efficacy, Locus of Control.

1.0 Introduction

The display of knowledge attained in school subject is generally referred to as academic achievement. The main indicator of this achievement is students' test scores or marks assigned by teachers. It can also be looked at as the school's evaluation of the students' classroom work as qualified, based on students' marks or grades (Busari, 2001). Because of

its great importance, parents, teachers and the society generally are much concerned and apprehensive about how it can be improved on. Often times, students are greatly concerned about their scores in the core subjects (Mathematics being one of them) because of the importance attached to it in determining their career pursuit. There is hardly any career a student can pursue without passing Mathematics at the secondary school level. Furthermore, Mathematics is of great importance because it is essential for daily living. Nearly everybody uses Mathematics. For example, the civil servants use it in their offices for schedule of work, purchasing of materials, working out benefits etc. The market women cannot do without it. In fact, it is used by both literate and non-literate people.

Ilori, (2003) asserts that Mathematics plays a very significant role such that its importance cannot be overemphasised all over the world. It serves as a basis for understanding other subjects. This is the reason Mathematics has been made a compulsory subject of study at the primary and secondary school levels, irrespective of whether or not students have aptitude for it or not. Ilori further states that students do not often realise how relevant Mathematics is to them until they have failed to obtain a credit pass in it at secondary school level. For instance, in the senior school certificate Mathematics Examinations conducted by the West Africa Examinations Council, 2007-2016, students' achievement in mathematics is below 50% credit pass for each year except in 2011, 2015 and 2016 which are slightly above average. The table below illustrates the magnitude of the problem.

Table 1: Statistics of Entry and Performance in Mathematics from 2006 –2016 May/June WASSCE in Nigeria.

Year	Total Entry	Total Sat	%	Total Absent	%	Total Credit 1 - 6	Total in %
2006	1038809	1024451	98.61	14358	1.38	377312	36.83
2007	1035266	1019524	98.47	15742	1.52	346410	33.97
2008	1080133	1054853	97.65	25280	2.34	402982	38.20
2009	1170523	1149277	98.18	21246	1.81	472674	41.12
2010	1270136	1249028	98.33	21108	1.66	584024	46.75
2011	1292890	1268213	98.09	24677	1.90	726398	57.27
2012	1373009	1348528	98.22	24481	1.78	634382	47.04
2013	1331374	1306535	98.13	24839	1.87	548065	41.95
2014	1540141	1508965	97.98	31176	2.02	608866	40.35
2015	1695878	1658579	97.79	37521	2.21	838879	50.58
2016	1484034	1469585	99.02	14449	0.98	1032175	70.23

Source: West African Examinations Council (2016).

The failure rate in mathematics from 2006-2016 as shown in table 1 above, simply calls for all hands to be on deck, in order to improve students' achievement in Mathematics.

Indeed, academic achievement has been investigated in relation to cognitive ability. Many researchers that investigated academic performance have focused on the link between Intelligence Quotient (IQ), other factors and academic achievement. Victor, (2011) identifies students' effort, previous school, parents' education, family income, self-motivation, age of student, learning preferences, class attendance and entry qualifications as factors that have significant effect on students' academic achievement in various settings. Adeyemi and Adeyemi (2014) also identify some factors that affect students' performance. These factors include student-teacher ratio, teachers' interest, teachers' ability, teaching method, commitment and intelligence. However, Chamorro-premuzic and Furnham (2006) report that these factors alone, are not sufficient to account for individual differences in academic success or failure. There is, therefore need for more researches focused on impact of non-cognitive variables on academic achievement of secondary school students in Mathematics. This is important since the country has been faced with the challenge of poor academic achievement in Mathematics and there is paucity of information on which non-cognitive variables actually enhance academic achievement of secondary school students in Mathematics. Locus of Control and Self efficacy are some of the non-cognitive variables that researchers have found to influence Students' academic performance positively. Thus, this study seeks to investigate the contributions of psychological skills such as Locus of Control and Self-efficacy to the prediction of academic achievement in Mathematics among secondary school students in Lagos State, Nigeria.

Locus of Control is an individual's belief regarding the causes of his or her experiences and the factors to which that person attributes success or failure (Njus and Brockway, 1999) Locus of control is a theory in personality psychology referring to the extent to which individuals believe that they can control events that affect them. It is also defined as a personality variable which refers to individuals' perception of main causes of events in life. Rotter (in Sokenu, 2013) posits that Locus of Control can be divided into two groups, namely, internal Locus of Control and external Locus of Control. Individuals with internal Locus of Control are called internals. They believe that they have control over their destinies. They tend to be convinced that their own skills, abilities and efforts determine the bulk of their life experiences. Rotter, further stresses that, individuals who have external Locus of Control are called externals. They believe that their destinies are controlled by external forces such as luck, chance, fate or powerful others. To Burger (1993), Locus of Control is a psycho-philosophical orientation about how an individual attributes the cause of events that happen to him/her, either of his/her own internal Locus of Control or another person's external Locus of Control.

Self-efficacy is the measure of one's competence to complete tasks and reach goals (Ormrod, 2006). It influences every aspect of human endeavours. It could be referred to

as a person's belief in his or her ability to successfully accomplish a specific task. It also refers to beliefs about one's capabilities to learn or perform behaviors at designated level (Bandura 1986, 1997). Self efficacy is regarded as a construct that deals with one's perception that he or she is capable of doing what is necessary to reach one's goal in terms of knowing what to do and being able to do it (Pajares and Schunk, 2001). Self efficacy shapes people's outcome expectations whether they expect their efforts to produce favorable outcomes or adverse ones. Bandura (1977) posits that self efficacy is the judgment of one's capability to perform activities within a particular domain through four primary sources; (i) enactive mastery, where the learners master the domain through personal experiences, (ii) vicarious learning, where the learners gain information through observing the experiences of others, (iii) verbal persuasion, in which learners are encouraged by others, and (iv) emotional arousal, where the learners develop strong feelings toward the domain. It is to be noted that of all these four sources, enactive mastery has the greatest effect on learner's self efficacy. Jung and Sosik (2003), found out in their study that efficacious learners persist in academic tasks, on the other hand non-efficacious learners will be more likely to discontinue the activity.

In a study conducted by Nicolaidou and Philippou (2003), on the relationship between students' Locus of control, self efficacy beliefs in problem-solving and achievement, it is discovered that Locus of control and self efficacy predict achievement in problem solving. In like manner, the findings of Woodard (2004), Karimi and Venkatesan (2009), in their research works both show that self efficacy and Locus of Control are strong determinant of students' academic achievement in Mathematics.

In a study carried out by Adeneye et al (2012), titled "determinants of students' achievement in Senior Secondary School mathematics and Sciences: What is the role of Test Response Mode and Locus of Control?", it was discovered that in Mathematics, the internals obtained higher mean achievement score ($x = 14.24$; $SD = 3.00$) than their external counterparts ($x = 11.56$; $SD = 2.96$), a significant difference ($t = 6.90$, $P = 0.000$). Hence, it is concluded that there is a significant effect of Locus of Control on student's achievement in Mathematics.

Knowles and Kerman (2007) found that students with internal locus of control tend to perform better in academic courses compared to those with external locus of control. Nejati, Abedi, Agbaci and Mohammadi (2012) investigated the relationship between locus of control and the academic performance of students by considering life quality and level of satisfaction with life. The outcome of their study reveals that locus of control significantly correlates with the academic performance of the students.

Hoftman and Schraw, (2009) submit that students' with higher Mathematics self-efficacy persist longer in solving difficult Mathematics problems and are more accurate in Mathematics computations than those lower in Mathematics self-efficacy. Schallert (2006) asserts in his study that self-efficacy significantly predicts students' academic

achievement in sciences. Rajani (2008), puts it forward that self-efficacy is a strong predictor of academic performance.

This study is based on social cognitive theory by Bandura and Social Learning theory of personality by Rotter. Social cognitive theory is the theoretical framework of self-efficacy construct (Bandura, 1986). Within this perspective, one's behavior is constantly under reciprocal influence from cognitive (and other personal factors such as motivation) and environmental influences. Bandura calls this three-way interaction of behavior, cognitive factors and environmental situations the “triadic reciprocity”. Applied to an instructional design perspective, students' academic performances are influenced by how learners themselves are affected by instructional strategies, which in turn builds on itself in cyclical fashion. According to Bandura (2001) and Schunk (2006), students feel self – efficacious when they are able to picture themselves succeeding in challenging situations, which in turn determines their level of effort toward a task. This theory is very relevant to this study because of its emphasis on the individual's belief or self- perception in his or her capacity to execute behaviors necessary to produce specific performance attainments. This self-perception is commonly called locus of control.

Rotter's (1954) social learning theory of personality postulates that behavior is a function of expectancy and reinforcement value in a specific situation. In other words, a particular behavior is more likely to occur if it is associated with high reinforcement value and expectancy. Reinforcement value is the degree of preference for a particular reinforcement if various alternative reinforcements are available. Rotter's social learning theory has four main components used in predicting behavior. These are behavior potential, expectancy, reinforcement value and psychological situation. The theory is relevant to this study because he emphasises the interaction of these four components as a process that can effectively help students improve their behaviors (performances). The theories of Bandura and Rotter are of immense relevance to students' non-cognitive variable (Locus of control and Self efficacy) because much emphasis is on integration as the basis for good academic performance. Consequently, these theories are in line with the independent variables in this study.

In Nigeria, the trend in performance of Students in the West African Secondary School Certificate Examination (WASSCE) Mathematics has not been encouraging (as revealed in table 1). To improve on the performance trends, many empirical studies conducted in Nigeria recommend the use of specialised teaching methodology among others. However, it appears that the recommended interventions are not effective. This is because the observed level of performance persists even after the interventions. An aspect that is yet to receive full research attention in Mathematics education in Nigeria is the extent to which non-cognitive variables can affect students' performance. Through empirical studies, Locus of control and self-efficacy have been identified as some of the

non-cognitive variables that can predict students' academic achievement in Mathematics. Previous studies on the impact of these variables on academic achievement are not conclusive. While some of the findings of the studies discovered that there is a significant impact of the predictive variables on academic achievement (Woodard, 2004; Karimi and Venkatesan, 2009 and Adeneye et al, 2012), others submit that they have no significant impact on academic achievement (Adegun, 2007 and Eyitayo, 2010). Due to this inconsistency, there is therefore the need to actually find out the extent to which Locus of control and self-efficacy predict academic achievement in Senior Secondary School Mathematics in Lagos State, Nigeria.

The study will provide insights to the curriculum developers, teachers, parents, students, counsellors and policy makers regarding how Locus of Control and self-efficacy predict students' academic achievement in Mathematics. The findings from this research would provide a sustainable solution towards attaining steady good academic achievement in Mathematics. To the learner, the study would provide useful information that may help them to be successful in school. Generally, parents will gain from this study as it would educate them on the right way to cultivate habits and predispose them to hard work from their childhood. The results of this study would equip teachers because it would help them to do proper diagnosis and get a proper understanding of learning disabilities and difficulties that may inhibit students' good academic achievement in Mathematics. To the Ministry of Education, school administrators, counsellors, psychologists and curriculum planners, it would serve as a source of information to appropriately design programs that would cultivate the positive influence of Locus of Control and Self-efficacy as integral aspects of academic achievement of Secondary School Students in Mathematics in Lagos State, Nigeria.

1.1 Purpose Of The Study

The main purpose of the study is to find out the extent to which Locus of Control and Self-efficacy predict academic achievement in Senior Secondary School Mathematics in Lagos State. The specific purposes are to:

- (I) Find out the combined effect of Locus of Control and self-efficacy to the prediction of academic achievement in Senior Secondary School Mathematics in Lagos State.
- (ii) Find out the relationship that exists between the predictor variables and academic achievement in Mathematics.
- (iii) Find out the relative contribution of Locus of control and self-efficacy to the prediction of academic achievement in Senior Secondary School Mathematics in Lagos State.

1.2 Research Questions

The study answers the following research questions:

- (1) What is the combined effect of Locus of Control and Self-efficacy to the prediction of academic achievement in Senior Secondary School Mathematics in Lagos State?
- (2) Is there any significant relationship between Locus of control and academic achievement in Senior Secondary School Mathematics in Lagos State?
- (3) Is there any significant relationship between self-efficacy and academic achievement in Secondary School Mathematics in Lagos State?

2.0 Research Methodology

This section presents the methodology of the study under the following headings.

2.1 Research Design

This study employs the use of ex-post factor research design. This is because the independent variables in this study are not subject to manipulation by the researchers.

2.2 Sample And Sampling Techniques

In the conduct of this research, the target population comprised all the Senior Secondary School II students in Lagos State, Nigeria. The Senior Secondary two students are chosen because they are available for the period of the research; they are not in the examination class yet.

The sample for this study is 720 SS II students (both male and female), from twelve Secondary Schools in three Educational Districts in Lagos State, Nigeria. First, simple random sampling technique is used to select three educational districts out of the Six Educational Districts in Lagos state. Then, twelve schools are selected from these educational districts (four schools each) through a stratified random sampling. One entire SS II class from the sampled schools participated in the study to avoid disorganising the school.

2.3 Research Instruments

In this study, the instruments used are:

- (i) Students' Personality Variables Scale (SPVS)
- (ii) Mathematics Achievement Test (MAT)

2.3.1 Students' Personality Variables Scale (spvs)

This scale is developed by Gbenga Oyelakun (2011) and is adapted by the researchers. The **SPVS** is content validated by specialist in Measurement & Evaluation and seasoned researchers. The scale contains three sections; A, B, and C. Section A elicits bio-data and demographic information like name of student, name of school, gender, age etc. Section B is a four point likert-type scale on self-efficacy with ten items determining the general self-efficacy of the students. Section C is also a four point likert-type scale on Locus of control with ten items, which measure if an individual's success is based on his academic ability or on luck or chance. The instrument is pilot tested on 100 subjects randomly selected from the remaining Educational districts that were not used in this study. The reliability and content validity of the instrument is established using Cronbach Alpha and Lawshe methods respectively. The coefficients are 0.80 and 0.71 respectively.

2.3.2 Mathematics Achievement Test (mat)

This instrument consists two sections A and B; section A is on the Bio-data of the student. Section B consists 40 items constructed from seven topics in SS 2 curriculum. The test's blueprint, based on the first three levels of Bloom's taxonomy of educational objectives, is constructed for 60 items and is trial tested. The difficulty indices and discriminating indices of the items are determined. The items with difficulty indices between 0.40 and 0.75 and with discriminating indices between 0.32 and 0.45 are finally selected. This reduced the items to forty (40) which are finally used for the study. Thereafter, test-retest reliability is carried out in order to ascertain the stability of the instrument. The reliability coefficient of the instrument is $r = 0.75$

2.4 Procedure For Data Collection

The researchers meet with the principals of the selected Secondary Schools to discuss the reason for undergoing the study and seek their permission which is granted. The researchers establish rapport with the participants in each selected secondary school and also assure them of absolute confidentiality. With the assistance of the research assistants, the instruments are administered to the students. The respondents are given enough time to express their honest feelings without any bias. The filled copies of their instruments (SPVS) are retrieved from the respondents immediately after completion. The MAT is then administered to the students and collected back after one hour (which is the time allowed for the test).

Result and Discussion

Table 2: Descriptive statistics of students' Locus of Control (SLOC), Self-efficacy (SSEF) and Mathematics Achievement Test (MAT)

variables	N	Mean	Median	Mode	Range	STD
SLOC	720	21.77	20.00	19.00	28.00	5.10
SSEF	720	29.48	30.00	31.00	24.00	5.48
MAT	720	26.16	27.00	28.00	28.00	6.44

Table 2, presents the scores of the sampled students in Locus of Control, Self efficacy and Mathematics achievement test. The table reveals that the estimated mean on the variables are respectively 21.77, 29.48 and 26.16. The standard deviations are 5.10, 5.48 and 6.44 respectively. The table further reveals that the scores of the students on Locus of Control is negatively skewed, while that of self-efficacy and Mathematics Achievement test are positively skewed.

3.5 Data Analysis

The data collected are analysed to provide answers to the research questions. The first research question is answered using multiple regression and Analysis of variance (Anova), research questions two and three are answered using Pearson Correlation Coefficient.

3.5.1 Research Question One

What is the combined effect of Locus of control and self-efficacy on the prediction of academic achievement in Senior Secondary School Mathematics in Lagos State?

Table 3: Summary of Regression Analysis of the predictors' variables (SLDC and SSEF) on students' Achievement in Mathematics

Model	R	R ²	Adjusted R ²	Standard Error
	0.594	0.521	0.441	2.025

Table 3 shows the analysis of the joint contribution of Locus of control and self-efficacy to the prediction of academic achievement in Senior Secondary School Mathematics in Lagos State. The results of the analysis give a coefficient of multiple regression of 0.59 and the adjusted R-square of 0.52. This shows that Locus of control and self-efficacy jointly predict about 52% of the variation in the academic performance of the students in mathematics. This indicates that they are jointly good predictors of academic achievement in Senior Secondary School Mathematics in Lagos State.

Table 4: Summary of Analysis of variance of the variables (ANOVA)

Model	df	Sum of Squares	Mean squares	F	Sig.
Regression	2	26854.62	13427.31	3273.10	0.000
Residual	717	2941.36	4.10		
Total	719	29795.98			

An analysis of variance (ANOVA) presented in Table 4, is used to further test the level of significance of the effect of predictor variables (Locus of control and self-efficacy) on academic achievement in mathematics. The calculated F ratio of 3273.10 at 0.05 level of significance and (2, 717) degree of freedom is found significant. Therefore, the null hypothesis is rejected and it is concluded that there is a significant joint contribution of Locus of control and self-efficacy to the prediction of academic achievement in Senior Secondary School Mathematics in Lagos State. This result is in agreement with the outcome of many previous research works (Abel & Moyosola, 2013; Adeyemo, 2007; Akomolafe, 2010; Akomolafe, Ogunmakin & Fasooto, 2013).

Table 5: Relative contribution of Locus of control and Self-efficacy to the prediction of Academic achievement in Mathematics

Predictor Variables	Unstandardi sed	Co- efficient	Standardised	T	P
	β	SEB	B		
Locus of Control	-0.219	0.022	-0.173	-6.048	.000
Self-efficacy	0.657	0.020	0.815	9.256	.000

Table 5 above shows that each of the independent variables (Locus of Control and self-efficacy) made a significant contribution to the prediction of academic achievement in mathematics. From the table, Self-efficacy makes the most significant Contribution (Beta = 0.657, $t = 9.256$; $p < 0.05$), follow by Locus of Control (Beta = - 0.219, $t = - 6.048$; $p < 0.05$).

3.5.2 Research Questions Two

Is there any significant relationship between Locus of control and academic achievement in Senior Secondary School Mathematics in Lagos State?

Table 6 : The relationship between Locus of control (SLOC) and academic achievement in mathematics (MAT)

Variable	N	mean	SD	df	r_{cal}	sig
SLOC	720	21.77	5.10	718	-0.52	0.00
MAT	720	26.16	6.44			

Table 6 revealed that there was a significant negative relationship between Locus of Control and academic achievement in mathematics ($r = -0.52$, $p < 0.05$). This result collaborate the outcome of Adeden, (2006).

3.5.3 Research Question Three

Is there any significant relationship between Self-efficacy and academic achievement in Senior Secondary School Mathematics in Lagos State?

Table 7 : The relationship between Self -efficacy (SSEF) and academic achievement in mathematics (MAT)

Variable	N	mean	SD	df	r_{cal}	sig
SSEF	720	29.48	5.48	718	0.84	0.00
MAT	720	26.16	6.44			

Table 7 reveals that there is a significant positive relationship between Self-efficacy and academic achievement in Mathematics ($r = 0.84, p < 0.05$). The implication of this is that an increase in the self-efficacy of the students will bring about an increase in their academic achievement in Mathematics.

4.0 Summary Of The Findings

The findings of the study shows that;

- 1) There is a significant combined effect of Locus of Control and Self-efficacy on the prediction of academic achievement in Senior Secondary School Mathematics in Lagos State.
- 2) The predictor variables (Locus of Control and Self-efficacy) jointly account for 52% variation in students' achievement in Senior Secondary School Mathematics in Lagos State.
- 3) There is a strong and significant positive relationship between Self-efficacy and academic achievement of students in senior secondary school Mathematics in Lagos State ($r = 0.84, p < 0.05$).
- 4) There is a significant negative relationship between Locus of Control and academic achievement of Students in Senior Secondary School Mathematics in Lagos State ($r = -0.52, p < 0.05$).

4.1 Educational Implication

Based on the findings from this study, students' academic achievement in Senior Secondary School Mathematics in Lagos State is a concern. Thus, this study has implications, for all parties, including governments, teachers, students, schools and parents. The study reveals that academic achievement of the students in Lagos State Secondary Schools, in Mathematics is predicted by all the independent variables (Locus of Control and Self-efficacy). The implication of this is that educational planners and policy makers should take into account the students' personality variables (Self-efficacy and Locus of Control) in determining effective and appropriate strategies in teaching and learning Mathematics. In this way, it is hoped that the achievement of the students in Mathematics will be enhanced. On the other hand, schools should be more proactive in enhancing the Locus of Control and self-efficacy of their students, since both are necessary and vital tools for students' success in Mathematics.

4.2 Conclusion

There is no doubt that what distinguishes the developed nations from the developing nations of the world is the degree of science and technology prevalent in these nations

and Mathematics is the fulcrum on which science and technology rotate. Based on the findings from this study, students' academic performance in Secondary school Mathematics in Lagos state can be improved, if the students' non cognitive variables (Locus of control and self efficacy) are enhanced.

4.3 Recommendation

On the basis of the findings of this study, the following recommendations are made:

- 1) Individual student should be made to understand his or her “self” first in life.
- 2) Secondary school educational authorities should design educational programmes that will enhance the students' self-efficacy and Locus of Control for a better prediction of students' achievement in Mathematics in Lagos State.
- 3) School authority should always make sure that students are not left out in decision-making as this is likely to promote their sense of efficacy beliefs about themselves and their academic activities.
- 4) Government and parents should intensify their efforts in providing schools with adequate facilities. This will go a long way to stimulate and build the confidence of the students in Mathematics.

References

- Abel, O.O. & Moyosola J.A. (2013). Academic Self-efficacy Locus of Control and Academic performance of Secondary School Students in Ondo State, *Nigeria Journal of Social Science* 11(3). 79-99.
- Adeyemo, D.A. & Ogunyemi, B. (2007). *Influence of emotional intelligence on link between academic Self-efficacy and achievement of University Students* *Psychology Development Society* 19(2), 199-213.
- Adeyemo, D.A. (2001). *Self-efficacy and subject enrolment in Secondary Schools: An empirical inquiry*. *Ibadan Journal of Education Studies* 1 (1): 86-95.
- Akomolafe, M.J. (2010). *Measure influence of Self-efficacy and gender on Secondary School Students' academic performance in Ondo State, Nigeria*. *Educational Thought* 7 (1), 1-13.
- Akomolafe, M.J. Ogunmakin, A.O. & Fasoolo, G.M. (2013). *The role of academic Self-efficacy, academic Self-concept and academic motivation in predicting Secondary School Students' academic performance*. *Journal of Educational and Social Research*, 3(2) 335-342.
- Aremu, A.O. & Moyowola, J.A. (2012). *Effectiveness of Emotional Intelligence Training in Enhancing Teaching Self-Efficacy of Career-frustrated Teacher in Ondo State, Nigeria*. *The Canadian Journal of Career Development*, 11 No. 1, 18-27.

- Avoseh, O. (1985). *The Influence of Sociological and Psychological Factors in Academic performance of Secondary School Beginners. Journal of Educational Leadership II*; 11-19.
- Bandura, A. (1993). *Perceived Self-Efficacy in Cognitive Development and Functioning. Educational Psychologist*.
- Barzegar, M. (2011). *The relationship between learning style Locus of Control and academic achievement in Iranian Students, Proceedings of the 2011 International Conference on Education and Technology (13)* 195-199.
- Caroline, O.A: Grace A. & Christy O.O. (2015). *The influence of Gender, School Location and Socio-Economic status on Students' Academic Achievement in Mathematics. Journal of Education and Practice* 6(17).
- Dennis, Z.A.; Joseph S & David O. (2017). *Locus of Control as a predictor of academic attitudes among University Students. International Journal of Education Policy Research and Review Vol. 4 (6)*; 125-137.
- Gifford D.D., Bricelo, A. & Perriott J. (2006). *Locus of Control academic achievement and retention in a sample students' attitudes toward cheating behaviours Am J. Pharm. Educ (68)* 2-6.
- Heydari, A. and Kushan, M. (2002). *Study of Locus of Control and its relationship to academic achievement in nursing student. Asrar-Journal of Medical Sciences*.
- Olufemi, A.F. (2010). *Locus of Control and Emotional Intelligence as predictors of academic achievement of high achieving learners in Ibadan, Oyo State. The Africa Symposium: An Online Journal of the Africa Educational Research Network*.
- Tella A, & Adeniyi S.O. (2011). *Locus of Control, Interest in Schooling and Self-efficacy as predictors of Academic Achievement among Junior Secondary School Students in Osun State, Nigeria. New horizons in Education*.
- Tella, A (2003). *Study Habit, Interest in Schooling and Social Competence as predictors of Academic Achievement among Secondary Schools Students in Ibadan. Maiduguri Journal of Educational Studies* 6 (1): 42-49.
- Yunusa, U. & Abdulwahid U. (2015). *Effect of Instruction in Emotional Intelligence Skills on Locus of Control and Academic Self-Efficacy among Junior Secondary School Students in Niger State, Nigeria*.
- Zahra R. (2014). *Examining the Relationship between Self-Efficacy, Locus of Control and Academic Achievement of students – Girls and Boys in Secondary School of Rustam City*.