



Relationship among Locus of Control, Academic Interest and Secondary School Students Academic Achievement in Anambra State, Nigeria

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Authors' contributions

This study was carried out in collaboration between both authors. Author LIA designed the study and wrote the protocol. Author ANA managed the literature searches. Author LIA wrote the first and second draft of the manuscript, performed the statistical analysis and managed the analysis of the study. Both authors read and approved the final manuscript before submission.

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ABSTRACT

Aims: To determine the relationship between locus of control and academic achievement in English language, the relationship between academic interest and academic achievement in English language, the relationship between locus of control and academic achievement in Mathematics, the relationship between academic interest and academic achievement in Mathematics.

Study Design: The study adopted the correlational survey design

Place and Duration of Study: Secondary schools in Anambra state, Nigeria.

Methodology: Disproportionate stratified sampling technique was used to select a sample size of 2,160 students from a population of 18,297 SS2 students in Anambra state government owned secondary schools. The instruments adopted for data collection were standardized locus of control scale, student's academic interest scale, these instruments were administered using the direct delivery approach. Data collected were tested using Pearson Product Moment Correlation Coefficient, while the hypotheses postulated was tested at 0.05 level of significance using t-test of correlation and multiple regression analysis.

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Results: the relationship between locus of control and academic achievement of secondary school students in English language is moderate and positive ($r = 0.469/n = 2050$), the relationship between academic interest and academic achievement of secondary school students in English language is high and positive ($r = 0.731, n = 2050$), the relationship between locus of control and academic achievement of secondary school students in Mathematics is high and positive ($r = 0.613, n = 2050$). The relationship between locus of control and academic achievement of secondary school students in English language is significant ($t\text{-cal.} = 24.03 > t\text{-cal.} 1.960$), the relationship between academic interest and academic achievement of secondary school students in English language is significant ($t - \text{cal.} = 48.46 < t - \text{crit.} = 1.960$), the relationship between locus of control and academic achievement in Mathematics is significant ($t\text{-cal.} = 35.12 > t\text{-crit.} = 1.960$), the relationship between academic interest and academic achievement of secondary school students in Mathematics is statistically significant ($t\text{-cal.} = 28.32 > t\text{-crit.} = 1.960$).

Conclusion: locus of control and academic interest are variables associated with academic achievement of secondary school students in Anambra state. Nevertheless, secondary school students spend significant part of their time in the classroom (about 7 ½ hrs a day, 5 days a week, and 36 weeks a year) with teachers and peers, there is need to help them understand their locus of control, improve their interest in learning as well as develop belief in themselves to succeed academically.

Keywords: Locus of control; academic interest; secondary school; students; academic achievement.

1. INTRODUCTION

Academic achievement among students has remained a source of concern to educators, the society and researchers, particularly as the academic achievement of secondary school students is deemed to be declining. Olusegun F [1] reported that less than 40 percent of the candidates who sat for public examination obtained up to credit passes in five subjects which are the minimum academic qualifications for admission into tertiary institutions. Similarly, [2] reported that in May/June WAEC examinations 786,016 candidates representing 49.98 per cent obtained credits and above in a minimum of five subjects including English language and mathematics. This further revealed fluctuation and decline in the performance of students when compared with that of 2016 which was 52.97 per cent, and in 2017 which was 59.22 per cent.

In secondary schools, every classroom plays host to different personality types of learners who come into the classroom differently prepared with a uniquely set characteristic that determines their level of aspirations within the same classroom environment. These personality types could determine their level of academic achievement in any given subject including mathematics and English language. Accordingly, [3] stated that the importance and role of English language has not diminished since the attainment of independence rather it has taken additional roles. the language is an important factor in the educational system,

more especially when it functions as a medium of instruction in schools. buttressing further, [4] stated that English language is the language of science and technology and a passport to educational advancement and prestigious employment, the language of commerce, trade and administration, and a means of national and international communication.

Adekola [5] in the National Policy on Education stipulates the importance of English language as one of the core subjects that will enable students offer any course in higher institution. As one of the core subjects, it is naturally expected that the level of attainment of students in English language will be evident in their performance in other subject areas. Mathematics as a subject taught in schools is seen as the analytical tool for the rationalization and development of science and technology [6]. Mathematics cuts across all other subjects; apart from science and engineering, it is also heavily used in business, economic, social studies and communication.

According to [7], students' academic achievement is described as the ability to study and remember subject content and be able to communicate such knowledge orally or in written form even in an examination condition. Teachers in secondary schools measure the academic achievements of students with the aim of achieving desired educational goals and objectives. The realization of such objectives is the touchstone for any system, hence if the achievement corresponds to the objectives, the

system has justified its existence. In addition, academic achievement is associated with other socio-psychological variables such as locus of control, academic interest, self-esteem among others.

Locus of control is a personality characteristic that determines the degree with which an individual believes they are in control of life events. The concept of locus of control has been originally developed by Julian Rotter, and can be generalized into basic dichotomy which is internal and external locus of control [8]. Academic interest most likely could be another variable which could hamper academic achievement among secondary school students. According to [7], academic interest is the affective reaction triggered by specific or appealing stimuli in the learning environment. Academic interest is said to be enhanced through the manipulation or modification of certain aspects of the learning environment and contextual factors such as teaching strategies, task presentation and structuring of learning experiences.

In a study conducted by [9] investigating factors affecting students' interest in Mathematics in secondary schools in Enugu State. The findings of the study revealed that seven factors were effective in predicting secondary school students' interest to learn mathematics. More so, teacher factor, student factor, instructional strategy, Mathematics anxiety and infrastructural problem correlate positively with the dependent measure, while class size and government factor correlate negatively with the dependent measure. The findings further revealed that the seven factors have significant relative effects on mathematics interest. In a similar study, [10] conducted a study on classroom environment and academic interest as correlates of achievement in senior secondary school chemistry in Ibadan South west Local Government area, Oyo State, Nigeria. The findings of the study revealed significant relationships between classroom environment and academic achievement, students' academic interest and achievement in Chemistry. The findings also revealed that composite contribution of classroom environment and academic interest was significant. However, classroom environment better predicted achievement than students' academic interest.

Nevertheless, the joint relationship among locus of control, academic interest and secondary school student's academic achievement seems

not to have been empirically established. Particularly, in certain geographical areas, where the unstable state of academic achievement as highlighted earlier seems to dwindle and calls for measures to refurbish the system where students' achievement could be optimal and acceptable. Based on the foregoing, the need to examine psychological variables (locus of control, academic interest) in relation with academic achievement among secondary school students becomes paramount. Hence this paper examined the relationship among locus of control, academic interest and secondary school student's academic achievement in Anambra state, Nigeria. Specifically, this paper determined the relationship between locus of control and academic achievement in English language, the relationship between academic interest and academic achievement in English language, the relationship between locus of control and academic achievement Mathematics, the relationship between academic interest and academic achievement in Mathematics.

1.2 Research Questions

1. What is the relationship between locus of control and academic achievement in English language?
2. What is the relationship between academic interest and academic achievement in English language?
3. What is the relationship between locus of control and academic achievement in Mathematics?
4. What is the relationship between academic interest and academic achievement in Mathematics?

1.3 Hypotheses

1. There is no significant relationship between locus of control and academic achievement of secondary school students in English language.
2. There is no significant relationship between academic interest and academic achievement of secondary school students in English language.
3. There is no significant relationship between locus of control and academic achievement of secondary school students in Mathematics.
4. There is no significant relationship between academic interest and academic achievement of secondary school students in Mathematics.

2. METHODOLOGY

The study adopted correlational survey research design. The population of the study comprises of 18,297 senior secondary school II students from 261 secondary schools. The sample for this paper comprises 2,160 secondary school students selected through the multi-stage sampling technique. Simple random sampling technique of balloting without replacement type was used to select 6 secondary schools from each education zone sampled, this results in 36 secondary schools selected in all. Disproportionate stratified sampling technique was employed to select 60 senior secondary school II students from the secondary schools selected. The instrument adopted for data collection is Trice's academic locus of control scale was developed by Asthon Trice in 1985, students' academic interest scale developed by Althoff in 2010. The administration of the instrument was done through direct delivery approach to the students (SS II), in administering the instrument, A total of 2,160 (100%) questionnaires were administered with a retrieval rate of 2050 (95%). This represent a high percentage of the sample drawn for the study and hence generalizability is not affected as well as pose no risk on the interpretation of results.

Data collected relating to research questions were tested using Pearson Product Moment Correlation Coefficient, while the hypotheses postulated was tested at 0.05 level of significance using t-test of correlation and multiple regression analysis. The scores of student's terminal examination results which comprises scores and grades of student's in English language and Mathematics indicating their achievement in school is reported using standard examination grading system. In testing the hypothesis, where p-value is greater than the significant value 0.05, the null hypothesis will not be rejected, otherwise, where p-value is lesser than the significant value 0.05, the null hypothesis will be rejected. This analysis was computed using the Statistical Package for Social Sciences version 21 (SPSS 21).

3. RESULTS AND DISCUSSION

3.1 Research Question 1

What is the relationship between locus of control and academic achievement in English language?

3.2 Hypothesis 1

There is no significant relationship between locus of control and academic achievement of secondary school students in English language.

Data presented in Table 1 reports data analysis results of the relationship between locus of control and academic achievement in English language. The findings revealed that there is a moderate positive correlation between locus of control and academic achievement of secondary school students in English language ($r = 0.469$, $n = 2050$). Findings relating to hypothesis 1 presented in Table 2 indicates that the t-calculated value is greater than the t-critical value at 0.05 level of significance. Hence, the null hypothesis is rejected. This shows that there is a significant relationship between locus of control and academic achievement of secondary school students in English language ($p\text{-value} = 0.05$, $t\text{-cal.} = 24.03$, $t\text{-crit.} = 1.960$).

This conforms to the findings of [11] who found that internal locus of control was high and positively correlated with academic achievement among the male students and positively correlated with external locus of control. The findings further revealed that the internal locus of control was positively correlated with academic achievement among female students and negatively correlated with external locus of control.

3.3 Research Question 2

What is the relationship between academic interest and academic achievement in English language?

3.4 Hypothesis 2

There is no significant relationship between academic interest and academic achievement of secondary school students in English language.

Data presented in Table 3 reports data analysis result on the relationship between academic interest and academic achievement in English language. The findings revealed that there is a high positive correlation between academic interest and academic achievement of secondary school students in English language ($r = .731$, $n = 2050$). The finding relating to the hypothesis 2 presented in Table 4 revealed that the t-calculated value is greater than the t-critical value at 0.05 level of significance. Hence the null

hypothesis is rejected. This shows that the relationship between academic interest and academic achievement of secondary school students in English language is statistically significant (p -value = 0.05, t -cal. = 48.46, t -crit. = 1.960).

This finding conforms with the findings of [12] which revealed positive relationship between students' attitude and their academic achievement in English language. It further supported as it revealed significance difference in the academic ability of male and female students with male students having higher ability mean achievement scores. Furthermore, this aligns with the findings of [10] which found significant relationships between classroom environment and academic achievement, students' academic interest and achievement in Chemistry. The findings also revealed that composite contribution of classroom environment and academic interest was significant.

3.5 Research Question 3

What is the relationship between locus of control and academic achievement in Mathematics?

3.6 Hypothesis 3

There is no significant relationship between locus of control and academic achievement of secondary school students in Mathematics.

Data presented in Table 5 reports the data analysis result on the relationship between locus of control and academic achievement in Mathematics. The finding revealed a high positive correlation between locus of control and academic achievement of secondary school students in Mathematics ($r = .613$, $n = 2050$). Findings relating to the hypothesis 3 presented in Table 6 shows that the t -calculated value is

greater than the t -critical value at 0.05 level of significance. Hence the null hypothesis is rejected. This shows there is a significant relationship between locus of control and academic achievement of secondary school students in Mathematics (p -value = 0.05, t -cal. = 35.12, t -crit. = 1.960).

This is also in line with [13] study which revealed that students' psychological factors and students' achievement at knowledge and understanding levels are significant joint predictors of senior secondary students' performance in Mathematics at the thinking level, and that such prediction could be done using the equation: Students' performance in Mathematics thinking, interest, attitude, motivation, self-concept, test anxiety, locus of control, knowledge and understanding.

3.7 Research Questions 4

What is the relationship between academic interest and academic achievement in Mathematics?

3.8 Hypothesis 4

There is no significant relationship between academic interest and academic achievement of secondary school students in Mathematics.

Data presented in Table 7 present the data analysis result on the relationship between academic interest and academic achievement of secondary school students in Mathematics. The finding revealed a moderate positive correlation between academic interest and academic achievement of secondary school students in Mathematics ($r = .531$, $n = 2050$). The findings related to hypothesis 4 presented in Table 8 revealed that the t -calculated value is greater than the t -critical value at 0.05 level of significance.

Table 1. Relationship between locus of control and academic achievement in English language

N	Correlation coefficient (r)	Remark
2050	0.469	Moderate positive relationship

Table 2. T-test of significance relationship between locus of control and academic achievement of secondary school students in English language

Correlation coefficient (γ)	N	df	α	t-calculated	t-critical	Decision
0.469	2050	2048	.05	24.03	1.960	Significant

Table 3. Relationship between academic interest and academic achievement in English language

N	Correlation coefficient (r)	Remark
2050	0.613	High positive relationship

Table 4. T-test significance relationship between academic interest and academic achievement of secondary school students in English language

Correlation Coefficient (y)	N	df	α	t-calculated	t-critical	Decision
0.731	2050	2048	.05	48.46	1.960	Significant

Table 5. Relationship between locus of control and academic achievement in mathematics

N	Correlation coefficient (r)	Remark
2050	0.731	High positive relationship

Table 6. T-test for significance relationship between locus of control and academic achievement of secondary school students in mathematics

Correlation Coefficient (y)	N	df	α	t-calculated	t-critical	Decision
0.613	2050	2048	.05	35.12	1.960	Significant

Table 7. What is the relationship between academic interest and academic achievement in mathematics

N	Correlation coefficient (r)	Remark
2050	0.531	Moderate positive relationship

Table 8. t-test for significance relationship between academic interest and academic achievement of secondary school students in mathematics

Correlation Coefficient (y)	N	df	α	t-calculated	t-critical	Decision
0.531	2050	2048	.05	28.32	1.960	Significant

Hence the null hypothesis is rejected. This shows that there is a statistically significant relationship between academic interest and academic achievement of secondary school students in Mathematics (p -value = 0.05, t -cal. = 28.32, t -crit. = 1.960).

Nevertheless, this could be as a result of certain factors highlighted by [9], in his study he affirmed that teacher factor, student factor, instructional strategy, Mathematics anxiety and infrastructural problem correlate positively with the dependent measure, while class size and government factor correlate negatively with the dependent measure. The findings further revealed that the seven factors have significant relative effect on students' Mathematics interest. Furthermore, the findings of the study support that of [7] which revealed that improvement of students' interest learning and attitude to school could contribute in boosting their performance academically.

4. CONCLUSION

The relationship among locus of control, academic interest and academic achievement of secondary school students in English language and Mathematics in Anambra state, Nigeria is statistically significant. This goes to suggest that locus of control and academic interest are variables associated with the academic achievement of secondary school students. Nevertheless, secondary school students spend significant part of their time in the classroom (about 7 ½ hours a day, 5 days a week, and 36 weeks a year) with teachers and peers, there is need to help them understand their locus of control, improve their interest in learning in order to succeed academically. On the contrary, the students in school only spend 45 to 90 minutes per day with each teacher, so it is nearly impossible for them to unconsciously transmit all of the knowledge they need to get to them within

that time frame. so therefore, there is need for parents as well to fulfil their first job, which is to be a teacher to their children.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline participant consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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