LOCUS OF CONTROL AS A CORRELATE OF PUPILS' ACADEMIC PERFORMANCE IN MATHEMATICS IN CENTRAL LAGOS, NIGERIA

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Abstract
Today, technology is the mainstay of any societal development and mathematics has been recognised as the bedrock of technology and sciences. This implies that the mathematical development of every child cannot be ignored at basic education level. Despite the importance of mathematics, pupils' performance in basic mathematics has not been encouraging. This study examines locus of control as a correlate of pupils' academic performance in mathematics. Correlational survey research design was adopted for this study. The population comprises all Basic Six pupils in Lagos Central Senatorial District from which 375 pupils were selected using multi-stage sampling technique. Pupils' Locus of Control Scale (PLOCS) and Mathematics Performance Test (MPT) were the instruments adapted and used to gather data for this research. Experts in Social Sciences Education and Sciences Education Departments were given the instruments for validation. The instruments were subjected to test-re-test method of reliability and were found to have reliability coefficient of 0.74 and 0.80 respectively. The research questions were answered using percentage and summated mean rating while Pearson Product Moment Correlation was used to test the hypothesis at 0.05 level of significance. The findings revealed that there was a positive significant relationship between locus of control and pupils' academic performance in mathematics. Among the recommendations made was that; Since pupils with external locus of control performed better in Mathematics, teachers should make reinforcement (praise, token gifts etc.) an aspect of learning whenever the pupils perform outstandingly in their academic work so as to prompt them to do better.

Keywords: Basic Education, Locus of control, Pupils, Performance in mathematics

Introduction

Basic education plays an important role in the life of an individual as well as the nation as a whole. Basic education is referred to in the Federal Republic of Nigeria (2013) as the education given to children aged six to twelve years. The Federal Government of Nigeria stated and clarified the objectives of basic education in the National Policy on Education (2013) as:

- Inculcating permanent literacy and numeracy, and the ability to communicate effectively.
- Laying a sound basis for scientific and reflective thinking

The mathematical development of every child cannot be ignored at basic education level. Mathematics is an important school subject because there is no activity of man that mathematics is not required.

Today, technology is the mainstay of any societal development and mathematics has been recognised as the bedrock of technology and sciences (Awofala, 2008). Regardless of the importance mathematics play in society, it is common knowledge that students at all levels of education perform very poorly in examinations (Akinsola, 2014). The subject has been identified as the most difficult subject in school, with pupils' performances worsening from year to year (Brown, Brown & Bibby, 2008). Research findings in Nigeria have shown that the performance of pupils in basic mathematics is below average which implies that the basic problem-solving skills of the pupils might also be below average. The poor performance of pupils has been attributed to many factors among which locus of control is one.

Locus of control (LOC) was originally described by Rotters (1966) in Akanni (2013) as an individual's belief about the underlying main causes of events in his/her life. Rotters was the first scholar who categorised locus of control into two namely; internal and external locus of control. A pupil who has internal locus of control orientation believes that his or her behaviour is guided by his or her personal decisions and efforts, while a pupil with external locus of control orientation believes that his or her behaviour is guided by fate, luck or external circumstance. Mamlin, Harris and Case (2001) found that having internal locus of control could also be regarded as having personal control and self-determination. In the study of mathematics, for instance, pupils who have internal locus of control must be able to demonstrate a high level of competence and intelligence in order to do well in the subject. In the words of Araromi (2012), locus of control as a construct is related to attribution which refers to people's control beliefs.

Pupils' locus of control is regarded in this study as an individual's belief system about the causes of his/her experiences (Akinsemoyin, 2016). Individuals whose locus of control is internally located, attribute their success/failure to their abilities and competences while those who have external locus of control believe that their success/failure is as a result of some external factors such as luck or providence. People who have internal locus of control think that they have a big role to play in determining the events that influence their lives. In addition, they judge themselves as possessing the power of the attitude they

want to display by having the positive ego concept, and they believe that they can direct their lives in whatever way they want (Gulveren 2008).

External locus of control attributes outcomes of events to external circumstances. Pupils with external LOC believe that fate, luck or an external influence determine their success. In general, people with external LOC will acknowledge and show praise to others, tend to like and follow detailed directions and are usually humble and agreeable (Allison, 2012). The individuals with an external locus of control prefer the activities in which they can show the role of chance in their lives and believe that many things that happen in their lives are not within their control. They blame others rather than themselves for any negative outcome. Mandy (2002) found male scores to be more internal than females. However, this may be due to social desirability. Based on traditional gender roles, females tend to believe that an internal perspective is inconsistent with female gender roles, and thus is socially undesirable.

The impact of locus of control on academic performance in mathematics has not enjoyed much research attention inspite of its importance. Mathematics plays a significant role virtually in all activities of man, especially in this modern age of science and technology. Its demand is therefore at a premium position. The performance of Yet pupils' in basic mathematics is still very poor as observed by Akinsola (2014). Also, research findings on locus of control are contradicting; Uguak, Elias, Uli and Suandi (2007) explored the influence of locus of control predicting students' academic achievement and result revealed that locus of control is significantly and positively related to academic achievement. While, Fatemi and Elahi (2010) and Idialu (2014) found that there was no positive significant relationship between students' locus of control and their academic performance. This study therefore, examined the factor of locus of control on mathematics performance of pupils in Lagos Central Senatorial District.

Research Questions

On the basis of the purpose of study, the following research questions were raised and answered:

1. What is the locus of control of pupils in Lagos Central?
2. What is the level of male and female pupils' locus of control in Lagos Central?
3. What is the performance of pupils in basic mathematics?

Research Hypothesis

Ho_1: There is no significance relationship between pupils' locus of control and academic performance in mathematics.

Methodology

The research design employed for this study was a correlational survey research design. The population for this study comprises 12,005 basic 6 pupils of 211 public basic schools in Lagos Central Senatorial District. The District consists of Apapa, Eti-Osa,

Lagos Island, Lagos Mainland and Surulere LGEAs. While the target population consisted of 5,200 basic six pupils from the two selected LGEAs in the Senatorial District. The sample for this study comprised 375 basic six pupils from the two selected LGEAs in the Senatorial District. According to research advisor, 375 samples fairly represent the population of 5,200 at the margin error of 5.0%. It is therefore believed that the sample selected fairly represent the population of this study. Basic six pupils are considered appropriate for this study because, it is believed that pupils in this group have the capacity and knowledge to fairly manage the task of responding to questionnaire and test instruments of this study.

Purposive sampling and simple random sampling techniques was used at different stages of sampling (LGEAs, Schools and Pupils). At the first stage, purposive sampling technique was used to select two LGEAs from Lagos Central Senatorial District namely, Lagos Mainland and Surulere LGEAs. The two LGEAs were selected because the two LGEAs have the highest concentration of public basic schools in the Senatorial District. At the second stage, simple random sampling technique was used to select 10 schools each from the sampled LGEAs. However, intact class of basic six pupils was randomly selected in each school that participated in this study.

Two instruments were used for this study. They are; Pupils' Locus of Control Scale (PLOCS) which was adapted from a Self-Report Assessment Scale developed by Lanuius (2001) and Mathematics Performance Test (MPT). The scoring key is as follows; External Score ((21-40) and Internal Score (1- 20). While 2011 - 2015 Lagos State placement examination in mathematics tagged Mathematics Performance Test (MPT) was adapted. Experts were given the instruments for validation and Test re-test method was used to establish the reliability of the instruments. Two sets of test administrations were carried out at the interval of two weeks. Data obtain from the first and second administration was collated separately and subjected to reliability using Pearson Product Moment Correlation (PPMC) to ascertain the reliability of the instruments. The reliability coefficient was found at 0.74 and 0.80 respectively. The research questions were answered using percentage, frequency count and summated mean while Pearson Product Moment Correlation was used to test the research hypothesis at 0.05 significant level.

Results

Research Question One: *What is pupils' locus of control in Lagos Central Senatorial District?*

Table 1: Frequency and Percentage of Pupils' Locus of Control in Lagos Central Senatorial District

Locus of Control	Frequency	Percentage
Internal Score	73	19.5
External Score	302	80.5
Total	375	100.0

Result in Table 1 showed that 73 (19.5%) of the pupils who participated in the study had internal locus of control orientation while 302 (80.5%) of the pupils had external locus of control orientation. From this result, it is apparent that pupils with external locus of control orientation were more in number than pupils with internal locus of control orientations. This implies that most pupils in Lagos Central Senatorial District have external locus of control whereby the pupils believe that success and failure are primarily a matter of luck and chance. Others who had internal score believe they can influence the course of what happens to them.

Research Question Two: *What is the level of male and female pupils' locus of control in Lagos Central Senatorial District?*

Table 2: Levels of Male and Female Pupils' Locus of Control in Lagos Central Senatorial District

Locus of Control	Male	Female
Internal Score	49(13.1%)	24(6.3%)
External Score	124(33.1%)	178(47.5%)
Total	173(46.2%)	202(53.8%)

Table 2 shows the male and female pupils' locus of control level in Lagos Central senatorial District. 13.1% and 33.1% of male pupils had internal locus of control orientation and external locus of control orientation respectively while 6.3% and47.5% of female pupils had internal and external locus of control orientation respectively.

Research Question Three: *What is the general performance of pupils in Mathematics in Lagos Central Senatorial District?*

Table 3: General Performance of Pupils in Mathematics in Lagos Central Senatorial District

	Mean	SD	Minimum	Maximum
General Performance	63.03	20.573	16	86

Result in Table 3 showed the general performance of pupils in basic mathematics. The mean score of 63.03 with a minimum score of 16 and maximum score of 86 was obtained. This showed that the academic performance of the pupils in basic mathematics was above average. This implies that the performance of pupils was encouraging.

Research Hypothesis: *There is no significant relationship between Pupils' Locus of Control and academic performance in Mathematics in Lagos Central Senatorial District?*

Table 4: PPMC Showing Relationship between Pupils' Locus of Control and Academic Performance in Mathematics in Lagos Central Senatorial District

Variable	N	r-value	p-value	Decision
Locus of Control	375	.065	.000	Rejected
Academic Performance	375			

Table 4 shows the relationship between locus of control and academic performance of pupils in Mathematics in Lagos central senatorial district. There is significant positive relationship between locus of control and pupils' academic performance in Mathematics in Lagos central senatorial district. This implies that the attribution pupils make determine their performance. Thus, the null hypothesis which stated that; there is no significant relationship between locus of control and academic performance in mathematics is therefore rejected.

Discussion of Findings

The first finding revealed that, two types of locus of control existed among the pupils, namely; External and Internal Locus of Control. However, most of the pupils have external locus of control orientation which in turn has positive influence on their academic performance in mathematics. This implies that the academic performance of pupils in mathematics in Lagos Central Senatorial District depends on their external locus of control. This finding is in support of Akanni (2013) who found out that; external locus of control is more in children. Further explanation showed that, children like to be encouraged and praised when given task to complete. This is in line with the findings of Tucker, Hamayan and Genesse (2006) whose investigation revealed that many children tend to have external locus of control orientation and they become more internal as they get older. The finding of this study might have been as a result of the quality of the

school environment, the home environment and the age of the pupils. On the contrary to the findings of this study, Rana, Muoammer and Teynap (2011) found out that students generally have an internal locus of control which makes them work harder. Also, Basin and Sesen (2006) who confirmed that students with internal locus of control have more tendencies to help and perform higher when compared with those with an external locus of control. Furthermore, people with an internal locus of control believe that hard work and focus would result in successful academic process.

The second finding showed that, male pupils have internal locus orientation than the female pupils while the female pupils have external locus of control orientation than the male pupils. Apparently, external factors determine the success or failure of female pupils and the male pupils attribute their success or failure to internal factors. This finding is in agreement with the finding of Corne (2009) that males seem to be more internal than females.

One of the findings also revealed that, academic performance of pupils in basic mathematics is above average in Central Lagos. This implies that the problem-solving skill of basic school pupils is above average. This finding support that of Oke (2013) who found out that the academic performance of secondary school students in Ado-Ekiti was average. However, the finding of the study does not agree with the findings of Akinsola (2014) who found that the performance of pupils in basic mathematics is below average. The disagreement might be caused by difference in the school environment or method of teaching used by the teachers teaching mathematics in these schools.

Furthermore, the finding obtained revealed that, pupils locus of control made a significantly correlate with their academic performance in basic mathematics. This finding supports the findings of Uguak, Elias, Uli and Suandi (2007) that locus of control is significantly and positively related to academic achievement satisfaction. While, Fatemi and Elahi (2010) and Idialu (2014) found that there was no positive significant relationship between students' locus of control and their academic performance.

Conclusion and Recommendations

It is concluded that there is low positive significant relationship between pupils' locus of control and academic performance in mathematics. It is on the basis of the findings of this study that the researchers made the following recommendations:

1. Since pupils with external locus of control performed above average in Mathematics, teachers should make reinforcement (praise, token gifts etc) an aspect of learning whenever the pupils perform outstandingly in their academic work so as to encourage them to do better.
2. Educational psychologists should go beyond the academic work and mentor pupils in realizing that hard work is a key to success and success in one's life is not necessary a matter of luck.
3. Since teachers are the external influence that majorly determines the pupils' performance, seminars and workshop should be organized for the teachers in

other to improve their knowledge and method of teaching the subject in order to bring better improvement to the pupils' academic performance.

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