INFLUENCE OF SELF-CONCEPT OF ENGLISH LANGUAGE AND MATHEMATICS ON ACADEMIC ACHIEVEMENT OF STUDENTS IN SECONDARY SCHOOLS

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Abstract
This study explored the extent to which the self-concept of students in Delta State influences their Mathematics, English Language and Academic Achievements. The population consisted of 7,123 senior secondary 3 (SS 3) students from the state government financed senior secondary schools in Delta State. Stratified random sampling was conducted to select 3 schools (one school each from 3 mixed schools, 5 boys’ schools and 5 girls’ schools). The sample size for the study was 364 SS 3 students from the 3 randomly selected schools. The instrument used for data collection was the Self-Description Questionnaire III (SDQ III) developed by Marsh (1990) which contains 13 self-concept facets out of which 3 facets (Mathematics, Verbal and Academics) were adopted by the researcher for this study. The subjects were tested in Mathematics and English Language. The general average scores of the students on their promotion examination from SS 2 to SS 3 were extracted from their school records. The Multiple Regression analysis was used to test one hypothesis formulated for this study. The results of the tests indicated that Mathematics, Self-concept significantly positively predicted Mathematics Achievement, but did not predict English Language and Academic Achievement; Verbal Self-concept significantly positively predicted English Language and Academic Achievement, but did not significantly predict Mathematics Achievement; and Academic Self-concept significantly positively predicted English Language and Academic Achievement, but did not predict Mathematics Achievement. The main implication of the findings of this study is that Self-concept and Mathematics, English Language and Academic Achievement of students are so strongly related that a change in Self-concept facilitates a change in achievement. It was therefore, recommended that educational programme designers and developers in Nigeria should list Self-concept development as an important facet of the educational curriculum.

Keywords: Self-concept, Mathematics Achievement, English Language Achievement, Academic Achievement.
The West African Examination Council (WAEC) as reported by Leadership (2011), on 10th August, 2011 on the released results of the May/June 2011 recorded with an abysmal 30 percent of the candidates making credits in both English and Mathematics. According to Mr. Iyi Uwadiae, Head of National Office (HNO) of the West African Examination Council (WAEC), this was an improvement on last year’s record of 25 percent. He stated that the results had fluctuated from 23 percent pass in 2008; 21 percent in 2009; 25 percent in 2010 to 30 percent in 2011. Education watches contend that the results portent danger for Nigeria’s future (Leadership, 2011).

In 2015, as reported by Head of National Officer (HNO) Mr. Charles Eguridu affirmed that candidates representing 38.68% obtained credits in five subjects and above including English Language and Mathematics indicates that there is high performance for that year as compared to other previous years.

Why the poor performance of students in English Language and Mathematics despite making the two subjects compulsory in primary and secondary schools in Nigeria – two subjects credits in which are a pre-requisite for admission into any University in Nigeria, and most other parts of the world. What can be done to check the deteriorating performances of students in English Language and Mathematics?

Some investigations revealed that the questions above and even many more others, owe their answers to the complexity of self-beliefs (e.g. self-concept) that act on the students (Chapman & Tunner, 1997; Yeung & Lee, 1999). The researches have shown close relationship between students’ self-concept and students’ academic achievement.

Self-concept means the totality of a complex, organized and dynamic system of learned beliefs, attitudes and opinions that each person holds to be true about his personal existence (Purkey& Schmidt, 1987). In particular, academic self-concept is helpful for understanding a variety of school-related issues, including educational and occupational aspirations and school achievement (Hoge&Renzulli, 1993).

Statement of the Problem

The Nigeria nation has shown tremendous concern about the poor performance of students in English Language and Mathematics (Leadership, 2011). This poor performance of students deserves the total attention of educational planners, teachers and researchers in Nigeria for a possible turnaround. According to Marsh (1986), self-concept has been shown to be a very important educational achievement indicator as well as a desirable mediating variable leading to other positive outcomes, such that educational policy statements throughout the world list self-concept enhancement as a central goal of education.

Suffice it to say that in Nigeria, researches have been carried out which confirm the significant relationship between self-concept and academic achievement (Bassey, 2002; Jamabo, 1996; Osang, 1990), a lot more studies need to be done to replicate the
above findings in Delta State and other parts of Nigeria in the bid to answer the question: “Why poor students’ performance in English Language and Mathematics?”

**Purpose of the Study**

The purpose of this study is to determine the influence self-concept has on students’ English Language, Mathematics and Academic Achievement. The following research question directed the study:

**Research Question**
To what extent does students’ self-concept influence students’ English Language, Mathematics and Academic Achievement?

**Hypothesis**

The study was guided by the following null hypotheses:

- There is no significant influence of English Language Achievement of Self-concept on Mathematics Self-concept.

**Significance of the Study**

The results of this study on poor performance among students in English Language and Mathematics could be hinged, totally or in part, on low self-concept. Thus, educationists and curriculum developers shall see the need to list self-concept enhancement as a central goal of education in Nigeria to enhance achievement among students.

**Review of Related Literature**

The study is based on the Psychology tradition. Psychologists postulate that all persons create their own reality through their perceptions of what they believe to be real. And that a person’s behaviour is contingent on how an individual perceives and interprets his/her experiences (Combs and Gonzales, 1994). Thus, from the perspective of the psychology, it is clear that to understand an individual’s behaviour, we need to know how that individual perceives and interprets his/her experiences. In other words, to appreciate students’ academic performance, we need to understand student’s perception about school.

In Rogers’ view, the self is the central ingredient in human personality and personal adjustment. Rogers described the self as a social product, developing out of interpersonal relationships and striving for consistency. He emphasized that there is a basic human need for positive regard both from oneself and that every person there has a tendency towards self-actualization.

Self-concept is the cognitive or thinking aspect of self and generally means the totality of a complex, organized and dynamic system of learned beliefs, attitudes and
opinions that each person holds to be true about his or her personal existence (Purkey & Schmidt, 1987). Self-concept also means the general idea of ourselves. The idea of self-concept includes attitudes, feelings and knowledge about ability, skills and social acceptance capability of the self. According to Gross (1992), self-concept is simply a collection of personal attitudes towards oneself.

Psychologists have paid a lot of attention to factors related to the formation and development of self-concept (Gross, 1992). It is suggested that if self-concept is positive and normal, the individual will possess normal mental health. Adversely, if self-concept is negative and abnormal, the individual may behave abnormally in his or her environment. According to Gross (1992), the consensus appears to be that self-concept is largely acquired. This point is very pertinent for students and for those who are involved in their upbringing, particularly their parents and teachers. The implication is that students’ self-concept can be changed over time.

Marsh (1990a) showed that the relationship of self-concept to school achievement was very specific. According to Marsh, general self-concept and non-academic aspects of self-concept are not related to academic work, but general academic achievement measures were found to relate positively to general academic self-concepts and are highly related to success in the content area.

A poor attitude towards a discipline is thought to plague learners at every level of schooling. According to Wong (1992), Mathematics achievement is closely related to self-concept and attitude towards Mathematics. As in the case of the self-esteem, more mathematically confident students have significantly higher scores on Mathematics computations. Osang (1990), in his study, tested the relationship between students’ performance in Mathematics and self-concept. He found that students’ performance in Mathematics depended on their Mathematics self-concept. That is, their achievement in Mathematics depended on what they thought of or believed about themselves, with reference to Mathematics as a subject.

In a study conducted by Byrne (1984), he found that relationship between students’ self-concept in Mathematics is highly related to what an individual thinks of Mathematics. That is, ones Mathematics self-concept will influence ones achievement in Mathematics. Also students’ self-perceptions of Mathematics ability influence their Mathematics achievement, and that their attitude towards Mathematics during high school has positive effects on their choosing careers in science and Mathematics.

Hunt (1997) in a study of personality, reading ability and response to classroom lesson found a high significant positive relationship between verbal self-concept and achievement in English Language. Skaalvik and Rankin (1992) examined over 400 6th-grade Norwegian students in achievement and self-concept (math and verbal). They found math and verbal self-concept were strongly correlated and there were no significant negative correlations between achievement in one area and self-concept in the one another. However, in a major survey of over 14, 000 high school students in
over 1,000 schools, Marsh (1990) found that math and verbal self-concepts were uncorrelated despite a substantial correlation between math and English test scores.

**Methodology**

The research design was the Correlation Research Design. The population of the study consisted of 7,123 SS 3 students of 13 state government financed post primary schools in Delta State. Only the state schools were chosen (as against unity schools and private schools) to make for homogeneity: that is, to ensure the use of subjects that have similar characteristics.

The sample for this study consisted of 1,425 SS 3 students that were chosen from 3 randomly selected schools from 13 senior secondary schools in Delta State. The study employed the stratified random sampling technique, each school type (single boys, single girls and mixed schools) was considered a stratum and a senior secondary school selected at random. The hypotheses were tested using the Multiple Regression.

**Results**

In all the tables that follow, Acad Concept=Academic Self-concept, Mathconcept = Mathematics Self-concept, Verbconcept = Verbal Self-concept, Engsscore=English Language Achievement, Mathscore = Mathematics Achievement.

**Hypothesis One**

*There is no significant influence on English Language Achievement by Mathematics Self-concept*

**Table 1: Model Summary of Interaction between English Language Achievement and Verbal, Mathematics.**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R Square Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df1</td>
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<table>
<thead>
<tr>
<th></th>
<th>.747a</th>
<th>.558</th>
<th>.557</th>
<th>10.02790</th>
<th>.558</th>
<th>597.828</th>
<th>3</th>
<th>1421</th>
<th>.000</th>
</tr>
</thead>
</table>

a. Predictors: (constant), Engconcept, Mathconcept, Verbconcept

**Table 2: ANOVA of Interaction between English Language Achievement and Verbal, Mathematics and Academic Self-concept of Students**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean squares</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>180352.883</td>
<td>3</td>
<td>60117.628</td>
<td>597.828</td>
<td>.000</td>
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<tr>
<td>Residual</td>
<td>142895.816</td>
<td>1421</td>
<td>100.560</td>
<td></td>
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<tr>
<td>Total</td>
<td>323248.699</td>
<td>1424</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (constant), concept, mathconcept, verbconcept

b. Dependent variable: Engscore
Table 3: Coefficientsa of Interaction between English Language Achievement and Verbal, Mathematics.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>95% confidence interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-14.965</td>
<td>1.681</td>
<td></td>
<td>-8.900</td>
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<tr>
<td>Mathconcept</td>
<td>.007</td>
<td>.025</td>
<td>005</td>
<td>.288</td>
<td>.773</td>
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<tr>
<td>Verbconcept</td>
<td>1.202</td>
<td>.034</td>
<td>678</td>
<td>35.287</td>
<td>.000</td>
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<td>Engconcept</td>
<td>.299</td>
<td>.040</td>
<td>143</td>
<td>7.402</td>
<td>.000</td>
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</tbody>
</table>

a. Dependent Variable: Engscore

Table 1, reports Multiple Regression © of 0.747; Multiple Regression Squared (R²) of 0.558; Adjusted R² of 0.557; Standard Error of Estimate of 10.02796; and an R² Change of 0.558 which implies that all the predictors account for 55.8% of the variance in English Language Score and this is statistically significant (p<0.05). Table 2 shows that the Multiple Regression has an F ratio of 597.828 that is statistically significant (p<0.05). Table 3 reports the Standardized Coefficients (Beta) of Mathematics Self-concept = 0.007 (not significant, p>0.05); Verbal Self-concept = 1.202 (significant, p<0.05); and Academic Self-concept = 0.299 (significant, p<0.05).

On the whole, the three (3) tables show that there is a significant interaction between the predictors and Achievement in English Language, and that Verbal Self-concept and Academic Self-concept positively significantly predicts English Language Achievement. However, Mathematics Self-concept was found not to significantly predict English Language Achievement.

Conclusion

The study investigates the extent to which Self-concept influences English Language and Mathematics on Academic Achievement of students. The results of the tests indicated that Mathematics Self-concept significantly positively predicted Mathematics Achievement, but did not predict English Language and Academic Achievement; Verbal Self-concept significantly positively predicted English Language and Academic Achievement, but did not significantly predict Mathematics Achievement; and Academic Self-concept significantly positively predicted English Language and Academic Achievement, but did not predict Mathematics Achievement. The main implication of the findings of this study is that Self-concept and Mathematics, English Language and Academic Achievement of students are so strongly related that a change in Self-concept facilitates a change in achievement. Thus, to improve on the academic achievement of students, positive change in Self-concept is imperative.

According to Bandura (1997), self-concept beliefs influence the choices people make and the courses of action they pursue. Individuals tend to engage in tasks about
which they feel competent and confident and avoid those which they do not. Self-concept also helps determine the effort people will expunge on an activity, how long they persevere when confronted with obstacles and how resilient to be in the face of adverse situations. The higher the Self-concept, the greater the effort, persistence and resilience an individual puts on tasks. Self-concept exercises a powerful influence on the level of accomplishment that individuals ultimately realize. The study found that students with high Mathematics Self-concept and Verbal Self-concept scored highly in tests on Mathematics and English Language respectively.

It was further found that Verbal Self-concept is closely related to Academic Self-concept. This suggests that the development of Verbal Self-concept enhances the development of Academic Self-concept and vice versa. On the other hand, Mathematics Self-concept was found to negatively relate to Verbal Self-concept. Thus, the development of Mathematics Self-concept and Verbal Self-concept should be pursued distinctly poor performance among students in English Language and Mathematics is to be eradicated.

Recommendations

Given the significance of Self-concept in academic achievement of students, the enhancement of Self-concept outcomes should be of major concern to educators, program developers, teachers, parents and counsellors. In other words, Self-concept development should be central focus of educational policies in Nigeria.

The influence of students’ self-beliefs on their achievement does not end with their schooling. Consequently, the aim of education must transcend the development of academic competence. Schools have the added responsibility of preparing self-assured and fully-functioning individuals capable of pursuing their hopes and their ambitions.

Counselling services be provided in schools for students with problems in academic subjects or choice of subject. Through Self-concept theory is relatively new area in the Nigerian educational scene. Thus, more researches be conducted. These studies should be done to test the various facets of Self-concept in different populations. This is very important because the findings of this study point to positive Self-concept development as a panacea to students’ poor performance in English Language and Mathematics.

References

Influence of Self-Concept of English Language and Mathematics on Academic Achievement of Students in Secondary Schools - Edna Abibetu Abidde, Ph.D


