

RELATIONSHIP BETWEEN ACADEMIC SELF-CONCEPT AND ACADEMIC PERFORMANCE OF JUNIOR HIGH SCHOOL STUDENTS IN GHANA

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Abstract

The study investigated the relationship between academic self-concept and academic performance of Junior High School (JHS) students in Ghana. Differences between the academic self-concept of male and female students as well as students from urban and rural schools were also investigated. Participants were 756 male and 714 female JHS2 students randomly selected from 24 Junior High Schools through stratified sampling. Two research instruments namely, achievement tests in mathematics, English language, social studies and integrated science, and academic self-concept scale with a Cronbach alpha reliability coefficient (internal consistency) of 0.84 were used to collect data. Pearson product moment correlation coefficient and t-test were used in analyzing the data. The results showed a positive relationship between academic self-concept and academic performance of students. A significant difference was also found between the academic self-concept of students in urban and rural Junior High Schools with students in urban schools recording higher scores. The educational implications are discussed. This includes the suggestion that the actions and reactions of teachers, parents and significant others toward students should encourage, suggest, assure and reinforce the students that they are academically capable and competent.

Keywords: Self-Concept, academic performance, gender, urban/rural

Introduction

Students' self-perceptions about their academic capabilities form an important part of their adjustment in school. These self-perceptions play a significant role in directing students' efforts towards their academic work.

Shavelson and Bolus as cited in Frazier (2009) explain that self-concept is multifaceted, hierarchical, organized and structured, descriptive and evaluative, stable, and yet increasingly situation specific. This explanation of Shavelson and Bolus is consistent with the multi-dimensional and hierarchical models of self-concept by Shavelson, Hubner, and Stanton (1976). These models propose that academic self-concept is one of several different facets of the self that contribute to an individual's general self-concept.

Academic self-concept is an evaluative self-perception that is formed through the student's experience and interpretation of the school environment (Marsh & Craven, 1997; Shavelson, Hubner & Stanton, 1976). According to Lent, Brown and Gore (1997), academic self-concept refers to specific attitudes, feelings and perceptions about an individual's intellectual or academic abilities which represent that individual's self beliefs and self-feelings regarding the academic setting.

Literature suggests that there are two differing perspectives of academic self-concept (Cokley, Komarraju, King, Cunningham & Muhammed, 2003). The first perspective asserts that like general self-concept, academic self-concept is also hierarchical and multi-dimensional based on specific subjects (Shavelson, Hubner & Stanton cited in Scales 2006). For example, these may be English self-concept or mathematics self-concept. Educational psychology provides compelling support for this perspective (Marsh, 1993a). This is so because, important academic outcomes are substantially related to academic self-concept but are relatively unrelated to self-esteem and non-academic component of self-concept (Bryne, 1996a; Marsh, 1993a).

The second perspective views academic self-concept unidimensionally, such that academic achievement is influenced more by the broad notion of academic self-concept often measured by overall Grade Point Average (Cokley, 2000). Researchers with this orientation, measure academic self-concept broadly using overall academic achievement, as opposed to examining subject specific perceptions.

While both positions are beneficial, it is useful to have an understanding of how students feel, generally, about their academic abilities (Scales, 2006; Cokley, et al, 2003), because studies have shown that there is a relationship between general academic self-concept and overall academic achievement (Reynold as cited in Scales, 2006).

Researchers have extensively debated whether prior academic self-concept influences academic achievement or prior academic achievement causes subsequent academic self-concept (Marsh,Hau and King, 2002). Marsh, Hau and King (2002) considered this a "chicken and egg" question. In an attempt at determining the direction of the relation between academic

self-concept and academic achievement, literature shows that three models; (a) the self enhancement, (b) skill development and (c) the reciprocal effects have been useful (Liu, 2009).

According to the self enhancement model, academic self-concept is a determinant of academic achievement. This means that academic achievement is a consequence of academic self-concept. On the contrary, the skill development proposes that academic self-concept is a consequence of academic achievement. To this model, enhancing students' academic self-concept is to improve students' academic performance (Liu, 2009). An examination of these two models reveals that the direction of the causality is towards one direction. This has generated a lot of controversy among researchers. As a compromise between the self-enhancement and skill development models, the reciprocal effects model emerged. According to this model, academic self-concept and academic achievement are reciprocally related and mutually reinforcing. That is, prior academic self-concept affects subsequent academic achievement and prior achievement affects subsequent academic self-concept (Guay Guay, Bol;vin & Marh as cited in Green, Nelson, Martin and Marsh, 2006).

Studies have been carried out to determine the direction of the causal relationship between academic self-concept and academic achievement. Marsh, Trautwein, Ludtke, Koller and Baumert (2005), for example, have suggested that improving students' academic achievement without enhancing their self-concept in the related academic domains is most likely to lead to only short-term gains. This suggestion by Marsh, et al (2005) was supported by Liu (2009). According to Liu (2009), students who have less satisfying academic performance may develop less positive academic confidence, which in the end, may lead to lower academic self-concept. On the other hand, students with less positive academic self-concept are more likely to lack learning motivation, which may result in poor academic performance. Liu (2009), thus, concluded that academic self-concept and academic achievement tend to affect and determine each other. This conclusion by Liu (2009) agrees with the suggestion by Marsh and Craven (undated) that academic self-concept is a cause as well as an effect of academic achievement in that, prior academic self-concept influences subsequent academic achievement beyond the effects of prior academic achievement.

Guay, Ratelle, Soy and Litalien (2010) in a study found that students who perceived themselves as academically competent obtained higher grades because their academic self-concept led them to be more autonomously motivated at school. In contrast, students with negative perceptions about their academic capabilities, according to Bandura et al as cited in Williams and Williams (2010), shy away from academic tasks because (a) they view them as personal threats, (b) have low aspirations and weak commitments to

task-related goals and (c) dwell on their personal deficiencies and adverse outcomes. Zimmerman, and Martinez-Pans cited in Williams and Williams (2010) explain that once these beliefs are formed, they affect a student's performance through their influence on choice of activities, the amount of effort applied, the level of persistence, and the kinds of meta-cognition learning strategies invoked.

Similarly, Skaalvik, Valas, and Sletta (1994) opined that students with high academic self-concept may focus on out-performing their colleagues academically. This orientation according to Skaalvik, et al. (1994) predicts a positive path between academic self-concept and performance goals. This means that students with positive academic self-concept might orient themselves towards the mastery of their school work.

In the field of education, research suggests that the attainment of a positive academic self-concept affects academic behaviours, academic choices, educational aspirations and subsequent academic performance (Marsh as cited in scales, 2006). In recognition of the role played by academic self-concept in students' academic performance, researchers have been concerned with analyzing the type of relationship that exists between academic self-concept and academic performance. Although the relationship between academic self-concept and academic performance is well established in the literature, little research work has been done on the topic in Ghana, especially at the Junior High School (JHS) level. This study, therefore, is intended to make a contribution towards filling this gap. To this end, the current study examined the relationship between academic self-concept and academic performance of Junior High School students in Ghana. Specifically, it examined:

- the relationship between academic self-concept and students' academic performance;
- the differences in the academic self-concept of students based on gender, and
- the differences in the academic self-concept of students based on location (Urban and Rural).

Hypotheses

1. H_0 : There is no statistically significant relationship between academic self-concept and academic performance of students in Ghanaian JHSs
2. H_0 : There is no statistically significant difference between the academic self-concept of male and female students in Ghanaian JHSs

3. Ho: There is no statistically significant difference between the academic self- concept of students in Ghanaian Urban and Rural JHS.

The assumption here is that research hypotheses are non-directional: Based on the literature review, why not formulate a directional hypotheses for 1 and 3.

Methodology

Participants

The study was a national survey and in order to make the sample have a national representation, steps were taken through appropriate sampling procedures to ensure that students from different parts of the country were included. A sample of 1,470 JHS Form two students was selected from 24 public Junior High Schools through stratified random sampling using gender and location as criteria for stratification. The participants consisted of 756 (51.4%) males and 714 (48.6%) females. Out of the 1,470 participants, 750 (51.0%) were from urban schools and 720 (49.0%) were from rural schools.

Instruments

The main instruments that were used to collect data for the study were academic achievement tests in mathematics, English language, social studies and integrated Science which are the four core subjects taught at the JHS, and the Academic Self-concept Scale (ASS). The test items were constructed by the Centre for Performance Monitoring and Evaluation, a consultancy centre in Accra and were based on the JHS 2 syllabi. The tests were in multiple-choice item format with four options. These tests were administered to all the respondents. The mean score of each student in the four subjects was computed and used as proxy for academic performance.

The Academic Self-concept Scale was developed by the researchers after an extensive review of literature. This instrument consisted of two sections. The first section contained five items that focused on the demographic characteristics of respondents. The second section contained twenty items which measured the academic self-concept of the respondents. All the items in this section were structured on a five-point Likert type scale of Strongly Agree (5), Agree (4), Not Sure (3), Disagree (2) and Strongly Disagree (1). The Academic Self-concept Scale had a Cronbach alpha reliability coefficient of 0.84.

Procedure

The research instruments were personally administered by the researchers. At each of the JHS used for the study, all the selected students

were gathered in a classroom. The purpose of the study was explained to the students after which the research instruments were distributed to them. The Academic Self-concept Scale was the first instrument to be administered. It was followed by the tests in mathematics and English language. The students were given a fifteen minute break, after which the Social Studies and Integrated Science tests were administered. The test in English language, social studies and integrated science which consisted of 25 items each, were written within 25 minutes. However, the mathematics test which consisted of 20 items was written within 30 minutes. Each of the tests was scored out of 100 and the mean score of each participant in the four tests was computed and used as the academic performance of the participant.

Results

It was hypothesized that there is no statistically significant relationship between academic self-concept and academic performance of students in Ghanaian Junior High Schools. The results of the analysis are presented in Table 1.

Table 1: Result of Pearson Product Moment Correlation Analysis between Academic Self-Concept and Academic Performance of Students in Ghanaian JHS (N = 1,470)

Variable	Mean	SD	r	Df	p-value
Academic self-concept	61.563	7.111	.306**	1468	.000
Academic Performance	52.604	11.858			

** Correlation is significant at 0.01 level (2 tailed)

The information in Table 1 reveals a statistically significant relationship between academic self-concept and academic performance ($r = .306$, $df = 1468$, $p < 0.01$). The information shows a positive relationship between academic self-concept and the academic performance of students in Ghanaian Junior High Schools. On account of the results, the null hypothesis is rejected.

A second hypothesis formulated for the study was, there is no statistically significant difference in the academic self-concept of male and female students in Ghanaian JHS. The results of the analysis are presented in Table 2.

Table 2: Results of t-test Analysis of Ghanaian JHS Students' Academic Self-Concept by Gender (Male/Female)

Gender	N	Mean	SD	t-value	df	p-value
Male	756	61.738	7.307	.970	1468	.332
Female	714	61.378	6.898			

Not Significant $P < 0.05$

The results in Table 2 indicate that statistically, there is no significant difference in the academic self-concept of students in Ghanaian Junior High Schools on the basis of gender $t(1470)=0.970$, $p>0.05$. The null hypothesis is therefore retained.

A third hypothesis was that there is no statistically significant difference between the academic self-concept of students in Ghanaian Urban and Rural Junior High Schools. The results of the analysis are shown in Table 3.

Table 3: Results of t-test Analysis of Ghanaian JHS Students' Academic Self-Concept by Settlement/Location (Urban/Rural)

Location	N	Mean	SD	t-value	df	p-value
Urban	750	62.420	6.902	4.749	1468	.000
Rural	720	60.671	7.220			

Significant $P<0.05$

The data in Table 3 shows that students from Urban Junior High Schools had a mean score of 62.420 and a standard deviation of 6.902 on the academic self-concept scale, while their counterparts in Rural Junior High Schools had a mean score of 60.671 and a standard deviation of 7.220. Further, the data shows a t-value of 4.749 and a p-value of 0.000. This shows that $p<0.05$ at $df = 1468$. The analysis, therefore, shows a statistically significant difference between the academic self-concept of students from Urban and Rural schools. The analysis shows that students from Urban JHS, had a higher academic self-concept than their colleagues from Rural JHS. The null hypothesis is therefore rejected.

Discussion

The results of the study showed a positive and statistically significant relationship between academic self-concept and academic performance of students in Ghanaian Junior High Schools. This finding suggests that the views that students hold about their academic competence and capabilities are valuable variables that have the potential to facilitate the realization of students goals in a range of settings including the school.

This finding underscores the importance of how students feel about their competence and ability to be successful in their educational programmes. Students who are convinced that they are good and have the ability to succeed or control their educational experiences are likely to make efforts to excel in school-related work. This argument corroborates the explanation of Bandura as cited in Wentzel and Wigfield (1998) that students who think they are capable and can accomplish an academic task or activity are more likely to choose to do it, keep working on it even when they encounter difficulties and ultimately complete it successfully.

This finding buttresses the assertion by Akey (2006) that students' beliefs about their competence and expectations for success in school are linked to the students' level of engagement as well as emotional states that promote their ability to be academically successful. The finding also supports the research findings of Bryne as cited in Liu (2009); Guay, Ratelle, Roy and Litalien (2010). Bryne in a study in Canada found that students who performed higher academically had a higher academic self-concept. The results of Bryne's study showed that academic self-concept did not only determine school achievement, but also served as a more effective discriminator between low and high ability students. Guay, et al (2010) on their part, found that students who perceived themselves as academically competent obtained higher grades because their academic self-concept led them to be more motivated at school.

The results of the study did not reveal a statistically significant difference between the academic self-concept of male and female students in Ghanaian Junior High Schools. This finding by implication is that, both male and female students in Ghanaian Junior High Schools did not differ in the views they hold about their academic competence and capabilities. Perhaps, what could have accounted for this finding is the change in the landscape of the education sector in particular and the Ghanaian society as a whole. Equal opportunities are given to both male and female students in terms of access to school, provision of material and psychological support by the government, parents and teachers. This has made both sexes to be competitive, venturesome and open-minded in the pursuit of their educational goals. While this finding supports the research finding of Nuthanap (2007), it contradicts the results of previous studies by Brunner, et al (2009); Marsh, et al. as cited in Brunner, et al. (2009). Brunner, et al. (2009) in a cross-cultural study, evaluated gender differences in terms of point biserial correlations. The results of their study showed a positive correlation indicating that boys had a higher academic self-concept than girls. In a country specific analysis, the results of their study showed that gender differences in academic self-concept varied considerably across countries. Similarly, Marsh, et al. as cited in Brunner, et al. (2009) found that boys had a higher mathematics self-concept and girls had higher verbal self-concept. These observed gender differences in domain-specific academic self-concept according to Skaalvik and Skaalvik (2004) are congruent with the gender stereotype explanation proposing mathematics to be a male domain and females to have higher verbal ability.

The study revealed a statistically significant difference between the academic self-concept of students in Urban and Rural Junior High Schools in Ghana. The results showed that students in Urban JHS had a higher academic self-concept than their colleagues in Rural Junior High Schools. A

possible explanation for this finding could be the socio-economic status of the parents of the students. A chi-square analysis of the socio-economic status of parents of the students revealed that while 324 (43.2%) of the parents of students in Urban Junior High Schools had Post-secondary and University education, 129(17.9%) of parents of students in Rural Junior High Schools had the same level of education. It could be that with their level of education, parents of students in Urban Junior High Schools were more conscious of the benefits of education, communicated this knowledge to their school going children, and inspired them to aspire to see themselves as academically capable. Perhaps, this invariably served as a motivator to the students in Urban Junior High Schools to see themselves as more academically capable and competent than their counterparts in Rural Junior High Schools. This finding however, is inconsistent with the research findings of Nuthanap (2007). Nuthanap in a study in Dharwad found that students in rural schools had a higher self-concept than their counterparts in urban schools. The results of his study showed that while students in rural schools had a mean score of 92.14, their urban colleagues had a mean score of 87.87 on the self-concept scale.

Conclusion

The study has provided evidence to show that there is a positive relationship between academic self-concept and the academic performance of students at the Junior High Schools level in Ghana. The study also showed a statistically significant difference between the academic self-concept of students in Urban and Rural Junior High Schools. However, the study did not reveal any statistically significant difference between the academic self-concept of male and female students in Ghanaian Junior High Schools. This finding provides evidence to suggest that when both male and female students are given equal opportunities and support in school, both sexes will see themselves as academically capable and competent and will thus strive to work hard to achieve their educational goals.

Educational Implications

The finding of the study supports the view that academic self-concept correlates positively with academic performance of students. Individuals with high academic self-concepts are more likely than those with low academic self-concept to study hard in order to perform well academically. The actions and reactions of teachers, parents and significant others towards students should be such that they are intended to encourage, suggest, assure and reinforce students that they are academically capable and can do well if they work harder. These words of encouragement are likely to have an impact on the self-belief of the students making them see themselves as

academically competent and capable, and thus strive to study hard in order to perform well academically.

Gender difference in the academic self-concept of students was not found in the study. Male and female students had the same level of academic self-concept. To sustain this level of academic self-concept in the students, parents, teachers and the Ghanaian society as a whole should see both male and female students as equal competitors in education and should extend equal attention and opportunities to both sexes. Any form of gender bias or stereotype in the education sector that favours any of the sexes should be avoided.

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