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The relationship between academic self-efficacy as a determinant of career aspiration and academic performance of students in public secondary schools in Nairobi county, Kenya

Margaret Nduta Mwaura[1], Dr. Mwaura Kimani[2], Dr. Beatrice Manyasi[3]
[1] Masaai Mara University, Narok, Kenya
[2-3] Lecturer, Masaai Mara University, Narok, Kenya

Abstract
The study purpose to investigate how academic self-efficacy was related to academic performance of secondary schools students. The students' performance plays a significant role in producing the finest quality graduates who will become great leaders and source of manpower for the country. Poor academic performance not only limits the opportunities available to a person but lead to serious psychological, social and economic outcomes. In spite of this, a decline in academic performance has been registered in KCSE exams in secondary school in Nairobi County, Kenya hence the need to investigate whether academic self-efficacy which is a psychological factor is associated with academic performance. This study was guided by Social Cognitive Theory by Albert Bandura (1986). The study employed correlational research design. Questionnaires were administered to provide quantitative and qualitative data using a sample of 397 form four students from 12 public secondary schools in Nairobi County. Purposive, stratified and simple random sampling procedures were used in the selection of the locale, schools and respondents for this study. The data was analyzed qualitatively and quantitatively, guided by the study objective. Product Moment Correlation Coefficient test statistic was used to establish the relationship between academic self-efficacy and academic performance. The level of significance in rejecting the null hypothesis was at $p = \leq .05$. The study found a significant and positive relationship between students' academic self-efficacy and academic performance ($r(367) = 0.160$, $P < 0.05$). A major implication and recommendation of the study was that all stakeholders in education should work together in enhancing schools and homes environments for fostering the development of academic self-efficacy. Various strategies including exposing the students to various sources of self- efficacy and counseling approaches should be employed for initiating and increasing students' academic self-efficacy.

Keywords: academic self-efficacy, enactive mastery experiences, vicarious experiences, verbal persuasions, physiological states

1. Introduction

Within the framework of Social Cognitive Theory by Bandura (1997) academic self-efficacy denotes to students' confidence and beliefs in their ability to carry out academic duties as preparing for examinations or assessment. Accordingly, if a person's perceived self-efficacy is high, his performance actually reaches higher levels but if his self-efficacy is low, he performs under his level of capacity (Gun & Yildiz, 2014) [8]. According to Zimmerman 2000) efficacious students are more motivated than their less efficacious counterparts hence performs better academically. According to Bandura (1993, 1995, and 1997) [89, 5] the outcome of self-efficacy beliefs determine whether people think erratically or strategically, optimistically or pessimistically. Previous studies have reported a causal link between career aspiration and self-efficacy such that the students who lacked a career aspiration reported more hopelessness and less self-efficacy (Bandura, 1995 [5]; Bandura, 1977 [1]; Pajares, 2006 [17, 24]; Stajkovic, *et al*., 2018. Academic self-efficacy therefore plays a chief role in predicting career aspirations and academic achievement (Bandura, 1995; Pajares, 2006; Stajkovic, *et al*., 2018) [5, 17, 24]. Although self-efficacy's predictive prowess has been well established, less is known about how these beliefs influences academic performance of secondary schools' students in Nairobi County, hence the current study.

As Zimmerman and Cleary (2006) [24] summarized from numerous studies, students with a high degree of self-efficacy are more involved in the activity, work harder, and sustain high levels of effort even when difficulties are encountered. This results to improvement of academic performance for those students with less natural aptitude for academics. A great number or studies support this idea yet students remain unexposed to sources of self-efficacy. Students with high self-efficacy are probable to have high academic motivation and vice versa, (Badura, 1977) and this relationship can also work in the other direction to create a kind of success cycle; when a student is highly motivated to learn and thrive, they are more likely to attain their goals, giving them an understanding that donates to their overall self-efficacy. Besides, a longitudinal study by Hwang, Choi, Lee, Culver, and Hutchison (2016) revealed consistent reciprocal effects between achievement and later academic self-efficacy and between academic self-efficacy and later achievement.

Bryant (2017) study revealed that students' academic motivation was based on their personal perceived academic self-efficacy. Self-efficacy theory suggests that there are four hypothesize sources of information used by individuals when forming self-efficacy judgments (Bandura (1977) [1]. These sources are enactive mastery experiences or performance accomplishments, vicarious experiences

(comparisons), verbal persuasions and allied types of social influences or and physiological and affective states. When a person experiences difficulties and setbacks and learns to overcome these hindrances, he becomes resilient and later obtains the necessary experience required to overcome difficult educational tasks (Bandura, 1994) [4]. A study validated this source of self-efficacy further by showing that achieving students displayed significantly higher academic self-efficacy than their peers (Karen, Camelo, Sanchez, & Pinto, 2017. Extensive body of work shows that mastery experiences are the strongest predictors of students' self-efficacy through domains and age groups (Banbura, 1997; Usher & Pajares, 2008; Phan & Ngu, 2016 [18], Usher & Weidner, 2018) and therefore should be fortified among the students in all levels of learning.

According to Bandura (1997) domain-specific measures of perceived efficacy has a greater predictive power than global measures of the construct. Consequently, Williams and Williams (2010) [23] tested the reciprocal relationship between mathematics self-efficacy and mathematics and found positive relationship while Hannon (2014) [9] study found that students' self-efficacy was a strong predictor of performance on both high- and low-stakes mathematics exams. Tenaw (2013) was in agreement with these findings after carrying out a study with college students in chemistry. He found a significant relationship between self-efficacy and achievement (r=0.385, at 0.01) level with 98 degree of freedom). This idea was confirmed by other authors (Simzar, Martinez, Rutherford, Domina & Conley, 2015; Schobera, Schüttea, Olaf, Nele & Gebauerb, 2018). On the other hand, Tudy (2014) [21] study found that only attitude and self-efficacy towards mathematic manifested significant influence to academic performance.

Koseoglu (2015) [11] found that the relationship between self-efficacy and GPA was partially mediated by effort-regulation. These findings offer inferences for educators who may prefer to focus on the objective of increasing academic achievement by strengthening self-efficacy and effort-regulation. A local study by Nyamwange's (2016) on self-efficacy and achievement with (296) first year students selected from six universities in Kenya also reported that self-confidence or self-efficacy is a major predictor for achievement in science and mathematics while Ochieng (2015) [15] study among secondary schools' students in Nyakach Sub-County indicated that students with high self-efficacy perform better in Mathematics than those with lower self-efficacy.

Self-efficacy is underexplored outside of the developed world and especially in Kenya and in secondary schools, yet potentially useful concept in school learning. Academic performance in Nairobi County which has been declining over the years could be improved by improving the students' academic self-efficacy. Forewarning educators to the merits of enhancing self-efficacy beliefs and providing them with the intellectual tools, knowledge and strategies would be of significant value in a variety of pursuits throughout the students' lifetime particularly given the strong correlation between academic attainment and self-efficacy (Bandura, 1997). Policy makers should redesign a curriculum to incorporate programs that enhances the students' academic self-efficacy as well offering professional training to teacher trainees on how to be efficacious and stimulate the same to the students.

Academic performance in this study is an indicator of the extent to which secondary schools' students attain the Universities cut-off grade which is C+ and above. Nairobi County has witnessed a steady decline in educational standards over the last 4 consecutive years. In 2009, 2010 and 2011 K.C.S.E statistics indicates that, out of the maximum 12 points, the Nairobi County combined mean score was approximately six which is the equivalent to a mean grade of C (KNEC, 2017). Accordingly, 2013, 2014, 2015, 2016 and 2017 K.C.S.E statistics shows that out of the maximum 12 points, the Nairobi County combined mean score was declined to 5 which is the equivalent to a mean grade of D+ (KNEC, 2017). In 2016 and 2017, the mean grade fell further to 3.98 (D- grade) and 3.65 (D-grade) respectively. This consistent failure constitute to wastage of opportunities and resources for the individuals and the country at large despite the fact that most schools in Nairobi are well equipped with adequate educational infrastructure, human resources and technological services (elimuonline.com, 2014). Thus, a study that looks into the factors associated with academic performance is crucial at this point in time. Therefore, the present study was designed to investigate the relationship between academic self-efficacy and academic performance which is not adequately addressed in Nairobi County.

The objective of the study was to examine the relationship between academic self-efficacy as a determinant of career aspiration and academic performance of the public secondary schools' students in Nairobi County.

2. Methodology

This study adopted the ex post facto- correlational design. Correlation involves collecting data in order to determine strength and direction of a relationship between two or more quantifiable variables. The degree of this relationship is expressed in correlation- coefficient (Mugenda &Mugenda, 2003) [13]. This design is useful in trying to make prediction about a behavior and open up new lines of research.

The respondents were drawn from the accessible population of form four students' from12 out of 84 public secondary schools who were registered to sit for KCSE, 2017 by Kenya National Examination Council (KNEC). This represents 14 % of the total numbers of public secondary schools in Nairobi County which is considered enough in social science study which recommend a minimum of 10% (Gay, 1981). The sample consisted of 397 participants was obtained through simple random sampling (and stratified sampling for mixed schools) procedures using Yamane (1967) formula for determining a sample size.

The Yamane formula is stated as:

n = N/1+N (e) 2Where n is the corrected sample size, N is the population size and e (0.05) is the desired level of precision (margin of error). A 95% level of confidence is assumed. Calculation of sample size was done as follows; n = 26477/ 1 + (264778*.0025) = 394. The sample for the current study (397) is slightly more than the one recommended by Yamane (1967). The questionnaires and document analysis were used as the main research instruments to collect data from the students. According to Orodho (2004) [16] questionnaires are commonly used to collect important information from any given population.

2.1 Analysis of the Findings

Both qualitative and quantitative data were obtained from the questionnaire which were then scored and coded for

statistical analysis by the computer using Statistical Packages for Social Sciences – SPSS – software. Qualitative data was thematically analyzed and quantitative data was coded in variable view window of SPSS.

3. Research Findings

The academic self-efficacy was the independent variable which was measured using a scale adapted from Chemers *et al*. (2001) [7]. The scale consists of 8 items which were all positive on a 7 point Likert-type scale from 1 (Very Untrue) to 7 (Very True). Participants were asked to rate on a 1 to 7 scale how well they perceive of their competence to complete their class work or perform certain academic tasks. Thus, the maximum score that was obtained by a respondent is 56 and minimum of 8. The total score obtained by each respondent was calculated and the statistical constants for the distribution were found out. The levels of academic self-efficacy were categorized into low and high ranging from 8-32 and 33-56 respectively. Descriptive analysis of academic self-efficacy scores possessed by secondary school students was calculated and results are shown in Table 1

Table 1: Descriptive analysis of Academic self-efficacy scores of the Respondents

	N	Min	Max	Mean	Sd	Skew SE	
Academic Self-efficacy Score	369	8.00	56.00	44.2900	7.72313	-1.158	.127
Valid N (listwise)	369						

Key: Min- minimum; Max-maximum; Sd- Standard Deviation Statistics; SE- Standard Error

Table 1 represents an average score for the 8 items of the self-efficacy scale as 44.29 and a Sd of 7.72. The minimum and maximum range of the scale of self-efficacy is also indicated (Min = 8; Max = 56) for 369 respondents. Coefficient of skewness is negative (sk= - 1.158) which mean that majority of the respondents had high scores on the self-efficacy scale. High scores in self-efficacy are hypothetically associated with good academic performance. Standard error is also small (.127) showing less deviation of the sample mean from the actual population mean.

Table 2: Level of Academic Self-efficacy of Secondary School Students

Category of self-efficacy		Frequency	Percent (%)	Valid Percent
Valid	Low	30	7.6	8.1
	High	339	85.4	91.9
	Total	369	92.9	100.0
	No Response	28	7.1	
Total		397	100.0	100.0

Analyses in Table 4.31 demonstrate that majority of the students (339) have high levels of academic self-efficacy (85%). Only a few (7.6%) registered low levels of the same. A total of 28 (7.1%) did not respond to the questionnaire. It is hypothesized that self-efficacy is a precursor for academic performance. Given the high levels of self-efficacy for the majority of the students in Nairobi County, better academic performance is expected. However, Nairobi County continues to register poor KCSE national examination. This could mean that the students have strong beliefs about their academic capabilities and competence but lacking in strategies for translating this beliefs into academic success.

Students in urban areas have a number of different avenues through which they can enhance their self-efficacy. For example most schools are equipped with infrastructures such libraries, laboratories and technology that can boost their sense of mastery and consequent academic performance. However, developmental and environmental issues like distractions inherent in the urban areas can prevent students from fully engaging and accomplishing rigorous and challenging tasks in high school despite high self-efficacy. They therefore need counseling and other interventions. A level of academic self-efficacy across school type was analyzed and finding shown in Table 3

Table 3: Summary of 2017 KCSE Mean Grades (academic performance) of the Respondents.

Mean Grade	Frequency	Percent
A	1	0.3
A-	3	0.8
B+	20	5.0
B	26	6.5
B-	33	8.3
C+	32	8.1
C	32	8.1
C-	27	6.8
D+	70	17.6
D	82	20.7
D-	69	17.4
E	2	0.5
Total	397	100.0

Table 4.2 illustrate that out of 397 students, only 115 (28%) were within university cut- off mark which is C+ hence a majority of 282 (78%) missed university admission and have to join other institutions of learning or work force. As can be observed, a majority of 152 (38.3%) students had D grades. The overall mean grade for Nairobi County was 3.65 which translate into D grade. This is poor performance considering Nairobi is a city where schools are furnished with learning facilities and human resources. Demographic characteristics of the respondents were calculated.

Table 4: Level of Academic Performance and Level of Academic Self-Efficacy

Level of Academic Performance			Levels of self-Efficacy		Total
			Low	High	
	Low	Count	22	186	208
		% within Level of Academic Achievement	10.6	89.4	100.0
	Average	Count	6	109	115
		% within Level of Academic Achievement	5.2	94.8	100.0

	High	Count	2	44	46
		% within Level of Academic Achievement	4.3	95.7	100.0
Total		Count	30	339	369
		% within Level of Academic Achievement	8.1	91.9	100.0

Coefficient of skewness was 0.63. The positive coefficient of skewness indicated that majority of the respondents scores were below the mean score (Mean = 4.92). If skewness is less than −1 or greater than +1, the distribution is highly skewed. This is a clear evidence of poor performance in Nairobi County which should concern all the education stakeholders in Kenya since it is a key criterion to judge one's total potentialities and capacities for advanced studies and eventual entry into the world of work. On the other hand secondary schools are the turning point in the life of an individual at which he/she makes career decisions which are determined by academic performance.

Any respondent with B grade and above was considered to have a high academic performance for these grades carry more weight in university admission into what is referred as professional and prestigious courses such as law, medicine, engineering, and finance. Only 50 (12.6%) respondents had high academic performance. Between B- and C- was considered moderate level of academic performance and encompass those students at the lower and upper edge of university and middle-level college admission respectively. This level registered 123 (31.0%) students. Low level of academic performance consisted of D+ grade and below. This consists of students who may join polytechnics for artisan courses or work force. This category formed more than half of the total respondents 224(56.4%). Indeed, this is a reflection of poor academic performance in Nairobi County, a trend echoed by Mweteleli (2015) in his study.

Note. % = percentage

Interestingly, majority of the respondents (91.9%) in all the levels of academic performance registered high levels of academic self-efficacy and only a few (8.1%) registered low academic self-efficacy. This indicates that high academic self-efficacy does not necessarily translate into academic success of some students. Other mediating factors should be addressed in further studies. Nevertheless, those students withlow academic performance registered the lowest levels of academic self-efficacy (89.4%) and in those in the highest level of academic performance registered the highest level of academic self-efficacy (95.7%). This suggests a degree of association between academic performance and academic self-efficacy of the students.

This is consistent with hypothesized idea that academic self-efficacy predict academic performance and vice-vasa. To determine the relationship between levels of academic self-efficacy and mean of the academic performance, analysis was done and result is shown in Table 5.

Table 5: Level of Academic Self-efficacy versus the Mean of Academic performance

Level of self-efficacy	N	Mean of academic performance(points)	Sd	SE Mean
Low	30	3.7333	2.44855	.44704
High	339	5.0472	2.53335	.13759

Note. Sd= standard deviation; SE= Standard Error

The findings in Table 4.36 posit that majority of the students with high level of academic self-efficacy had an average of C- grade (M = 5.05, Sd = 2.53) in KCSE National examination in 2017. Those respondents with low levels of academic self-efficacy had an average of D grade (M = 3.7, Sd = 2.44). This implies that students with high levels of academic self-efficacy have chances of achieving academic success than those with low academic self-efficacy. Students can also register high academic self-efficacy but fail in academic performance. Students therefore need help to translate their high academic self-efficacy into efforts and behavior regulation in order to improve their academic performance.

The academic self-efficacy scores and academic performance had a positive and significant correlation (r (367) = 0.160, P< 0.05). Therefore the null hypothesis that there is no relationship between academic self-efficacy and academic performance in the public secondary schools students in Nairobi County was rejected.

The findings in this study emphasize the intriguing relationships between the level of academic self-efficacy of students and their academic performance in Nairobi County. This findings are compatible with those of relevant and most resent researchers whose studies found that general academic self-efficacy is significantly correlated with academic performance (Cayubit, 2014; Khan, 2013, Ochieng, 2015, Koseoglu, 2015, Azizollah *et al*., 2016, Moyosola, 2013, Gopolang *et al* 2014, Alegre, 2014, Koloa, 2018, Honicke, 2016, Honicke & Broadbent (2016). Nyamwange, 2016, Hannon, 2014, Simzar *et al*., 2015, Hwang *et al* 2016, (Bartimote-Aufflick *et al*., 2016, Ismail *et al*, 2017) [6, 10, 15, 11, 12, 14, 9, 19].

These findings are further supported by Kolo *et al*., (2017) study with college students. Goulao (2014) investigation with adult learners mirrored the previous findings by indicating that a significant relationship existed between self-efficacy and academic achievement (r=0.286, at 0.05 level). People differ in the areas in which they cultivate their efficacy and in their respective levels in which they develop even within their given pursuits. General self-efficacy therefore can bring a problem of predictive relevance and are obscure just about what is being assessed.

4. Conclusions

A relationship was found between academic self-efficacy and academic performance at.05 level of significance. Majority of the students had high levels of academic self-efficacy.

It was also observed that the students with better academic performance and higher academic self-efficacy. This implies that students with high levels of academic self-efficacy have chances of achieving academic success than those with low academic self-efficacy. However some students registered high academic self-efficacy but fail in academic performance. Students therefore need help to translate their high academic self-efficacy into efforts and behavior regulation in order to improve their academic performance.

Based on the present findings, it is advisable that educators focus and pay more attention on developing the students' construct of self-efficacy, that is, their discernments of capability from early years of education. It appears that this would allow the students to achieve during educational

course and be better prepared to succeed when they make the transition to a university level. Bandura's (1989) [3] four sources of self-efficacy (mastery experiences, modeling, social persuasion, and managing physiological arousal) should be integrated and encouraged into the teaching-learning process because individuals use these four sources of information to magistrate their capability and complete future tasks.

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