Academic Self-Efficacy as A Predictor of Academic Achievement Among Form Two Students in Subukia Subcounty, Nakuru County, Kenya

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Abstract

The academic achievement is one of the main goals of education and students are likely to be worried if their academic achievement is declining. In Kenya, this is a common phenomenon not only in national exams but also in internal exams particularly among form two students. Several factors have been attributed to decline in academic achievement but less focus has been directed to academic self-efficacy as a predictor of students' academic achievement. Thus, the paper examined academic self-efficacy as a predictor of academic achievement of form two students in public secondary schools in Subukia Sub County, Nakuru County. The specific objective was to establish the relationship between academic self-efficacy and academic achievement of form two students as moderated by students' gender. Bandura's Self-Efficacy Theory of Learning formed the theoretical framework and the correlational design was employed to determine the probable relationship among the study variables. Descriptive statistics including means and standard deviations were used to describe the quantitative data while correlation analysis (r) and regression analysis (R) were used to establish the relationship between the study variables and the predictive value of academic self-efficacy. The results showed that academic self-efficacy was positively correlated to academic achievement ($r=0.731$, $p<0.05$). There was also a significant influence of students' gender in the relationship between academic self-efficacy and academic achievement. The study has highlighted the need for the educational stakeholders to create a favourable learning environment that can promote students' need to succeed in their academic work. Hence, the findings may help the school administration to design learning environment which promotes students' academic achievement.

Key words: *Academic Achievement, Gender, Academic Self-Efficacy, Form Two Students, Subukia Subcounty, Nakuru County.*

1. Introduction

Academic achievement is one of the key goals of education (Polirstock, 2017). It provides evidence that a learner has mastered the knowledge and acquired the requisite skills in education. Steinmayr (2019) perceived academic achievement as a means of ascertaining that a learner has accomplished predetermined learning goals. According to Jak, Oort and Dolan (2020) academic achievement covers a wide range of educational outcomes whose different measures encompass metric and non-metric assessments. Some educational systems adopt the summation of continuous assessment tests to determine a learner's academic achievement. In other systems, particular grades from prescribed cumulative tests are collated over the years to provide an overview of a learner's academic achievement (Steinmayr, 2019).

The diversity of assessing academic achievement demonstrates the significant role academic achievement plays in the life of learners (Burns, 2020). At the individual level academic achievement can be adapted to graduate the learner to the next level of learning. In this regard, academic achievement provides the learners with the opportunity to advance in their education. Based on the need to ensure improved academic achievement, countries have devoted massive resources in preparing learners for both academic success and overall success in life (Fong & Kim, 2021; Klem & Connell, 2019). The United Nations (2018) contends that academic achievement is the key to achieving Millennium Development Goals (MDGs). However, meaningful academic achievement can be realized through equitable, inclusive and sustainable educational systems where learners are given equal opportunity for full participation. However, in this study, academic achievement was examined in terms of whether the students have achieved the academic targets, mastered the learning tasks, attained the set mean grade and exceeded or approached the grade expectation. Due to the importance placed on academic achievement, under-academic achievement undoubtedly conveys inherent problem in the educational system. It is on this basis that learners' academic self-efficacy is perceived to be an important predictor of academic achievement (Ray, 2019).

Kun and Gadanecz (2022) conceptualized academic self-efficacy as the confidence and trust in one's ability to succeed in academic work. In this study academic self-efficacy encompassed a learner's academic self-resilience, setting academic goals, meeting academic expectations and the use of available learning support. Considered this way, academic self-efficacy enables learners to deal with stressful learning situations and persist longer when confronted with academic challenges (Schunk & Pandrone, 2021). They are also more inclined to engage in self-regulatory processes like setting goals and using effective learning strategies. In Bandura's (1997) view, academic self-efficacy is enhanced by behavior outcomes such as goal progress and environmental input. Preliminary studies show that academic self-efficacy is a strong correlate of students' academic achievement (Zimmerman, 2023). These studies have reported that students with high levels of academic self-efficacy are motivated and confident in their skills, and use self-regulatory strategies to achieve their set goals (Pandrone & Graham, 2023; Chemer, Hu, & Garcia, 2019).

Globally, studies have revealed the impact of academic self-efficacy on academic achievement. In the United Kingdom (UK) Smith and Naylor (2019) reported that academic self-efficacy and academic achievement were linked. Mackenzie and Schweitzer (2019) investigated the psychosocial constructs influencing students' academic achievement in Australia. Self-efficacy

was recognized as one of the significant determinants of academic achievement. In the United States of America (USA), McWilliams (2021) observed that despite the government's commitment to reforming education system, students' self-belief systems remained one of the dominant factors influencing students' academic success.

In Africa, academic achievement has been a source of concern due to the great value attached to education by the parents and the government. For instance, Polirstock (2017) showed that academic self-efficacy was lacking in students who performed poorly in the examinations marking the end of secondary education in Nigeria. In Uganda, psychosocial factors such as self-efficacy have been found to influence students' academic achievement. For instance, a study among advanced level secondary school students in Mbarara Region revealed that academic self-efficacy was correlated with students' academic achievement (Kabunga, 2022).

In Kenya studies have shown that a number of psychological factors correlated with students' academic achievement. For instance, nurturing academic self-belief has been found to enhance academic achievement. However, Ochieng (2021) postulated that most students are deficient in academic self-efficacy. This is particularly common among form two students in public day secondary schools in Subukia Sub County where Mwangi (2023) identified problems with students' self-concept, academic resilience, self-esteem and achievement motivation. Hence, the paper examined academic self-efficacy as a predictor of academic achievement of form two students in Subukia Sub County as moderated by tudents' gender.

Statement of the Problem

Academic achievement represents academic achievement outcomes that indicate the extent to which learners have accomplished specific learning goals in school. However, many students have posted substandard academic achievement particularly among form two students. As a result, a lot of concern has been raised regarding poor academic achievement of form two students. Previously researchers have attempted to determine the factors responsible for the decline in academic achievement. In these studies, it has been established that academic self-efficacy is a prospective concept worthy of investigation. In particular, academic self-efficacy is being considered as being capable of influencing learning outcomes. As a result, academic self-efficacy is apparently emerging as a correlate of students' academic achievement. Thus, research studies focusing on the predictive role of academic self-efficacy could play an important role in determining academic achievement. However, there have been inadequate investigations covering academic self-efficacy as most studies have been preoccupied with single variables. Therefore, there was need to conduct a study to find out how these two variables are related to academic achievement. The paper examined academic self-efficacy as a predictor of students' academic achievement among form two students in day secondary schools in Subukia Sub- County, Nakuru County. It also examined whether students' gender moderated the relationship between academic self-efficacy and students' academic achievement.

2. Literature Review

Theoretical Framework

This paper was anchored on the self-efficacy Theory of Learning, pioneered by Albert Bandura. Bandura (1997) defined self-efficacy as the belief in one's competence to organize and execute courses of action required to generate specific outcomes. Self-efficacy is the result of both external experiences and self-perception. The construct of academic self-efficacy reflects a bright side of the self as it underscores the ability of an individual to cope with any impending difficulty to obtain the required results. The theory considered four critical components of academic self-efficacy that influence academic achievement. These are academic achievement accomplishments, vicarious learning, persuasion, and emotional arousal (Bandura, 1997). Academic achievement accomplishments show how a previous event influences how a person deals with subsequent situations or activities. When a student completes a task successfully, he or she develops a high sense of self-efficacy. A student's self-efficacy, on the other hand, may be harmed by past failures. Vicarious learning demonstrates the impact of other people's actions on the individual. Verbal or social encouragement from others also boosts self-efficacy by removing self-doubt. Finally, an individual's perspective of their physiological reactions to stressful events influenced their academic self-efficacy. Students with high self-efficacy believe they are capable of completing learning tasks and are more likely to set tough goals and remain committed to them despite the chance of failure (Bandura, 1997).

Studies have found that Bandura's theory of academic self-efficacy is vital in academic work because it fosters academic resilience (Chemers, Hu & Garcia, 2022). It highlights academic self-efficacy as a motivating attribute that enables learners to succeed even when faced with overwhelming odds. This is because with self-efficacy learners are able to try out new ideas and set higher academic expectations for future academic achievement (Ormrod, 2018). Academic self-efficacy also increases academic persistence allowing the learner to focus on a given learning task beyond the prior one. Hence, the theory was considered relevant in guiding this paper to ascertain how academic self-efficacy correlated with academic achievement.

Conceptual Framework

The conceptual framework displays the perceived relationship between the independent variable (academic self-efficacy) and the dependent variable (students' academic achievement) and the moderating variable (gender). Thus, the interaction of the variables is diagrammatically presented in Figure 1.
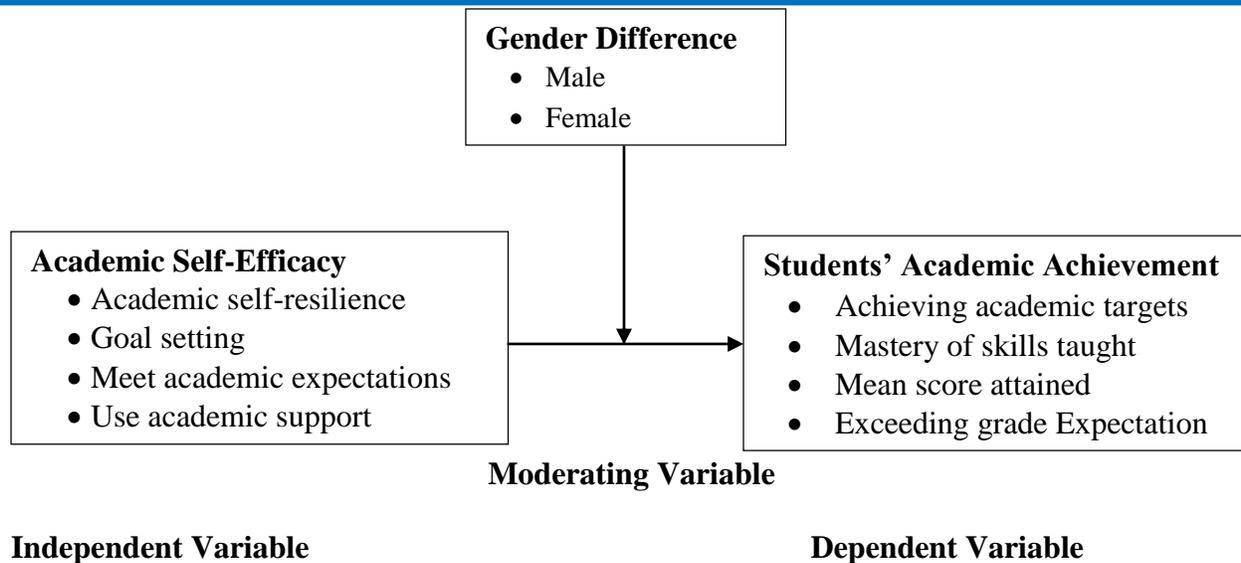
Gender Difference
- Male
- Female

Academic Self-Efficacy
- Academic self-resilience
- Goal setting
- Meet academic expectations
- Use academic support

Students' Academic Achievement
- Achieving academic targets
- Mastery of skills taught
- Mean score attained
- Exceeding grade Expectation

Moderating Variable

Independent Variable   **Dependent Variable**

Figure 1: Conceptual framework

The conceptual framework illustrates the interaction among the research variables. Academic self-efficacy was the predictor variable whereas the outcome variable was academic achievement. Gender was the moderating variable. Academic self-efficacy was conceptualized in terms of academic self-resilience, setting academic goals, meeting academic expectations and the ability to utilize the available learning support. Academic achievement was designated by achieving academic targets, mastery of skills taught, mean grade attainment and exceeding grade expectation. The mean grade obtained was considered to be representative of these parameters. Academic self-efficacy was hypothesized to be a predictor of academic achievement. However, the gender of the learners was considered to moderate the relationship between academic self-efficacy and academic achievement.

Academic Self-efficacy as a Predictor of Students' Academic Achievement

Various studies have been conducted in the area of academic self-efficacy and academic achievement across the world. However, the contributions of these studies in the area of academic self-efficacy have been broad and diverse yet instrumental. For instance, Li (2020) studied the relationship between academic self-efficacy and academic achievement of college students. Self-administered questionnaire was chosen to collect primary data from a sample of 153 students drawn from the Department of Applied Social Studies in the City University of Hong Kong. After analyzing the data, Pearson's correlation coefficient reflected that there was a positive correlation between academic self-efficacy and academic achievement (B=0.324, p<.01). However, academic self-efficacy explained only 41.1% of variation in the actual grades obtained by the students (R^2=.411, F (152) =78.128, p<.05). The study ascertained the extent to which academic self-efficacy was correlated with academic achievement of form two students in Subukia sub-County

White (2017) examined the relationship between academic self-efficacy and student achievement. He used the Students' Self-Efficacy Scale (SSS) and Comprehensive Test of Basic Skills (CTBS) in a study involving about 800 eleventh grade students and 39 teachers in southwest Florida. An

ex-post-facto correlational design was adapted in the study. Pearson product-moment correlation coefficients were computed at an alpha level of 0.05. Mean scores for the three major dimensions and nine subscales of the SSS and CTBS were computed. White found a positive and significant relationship between academic self-efficacy and student achievement (r=0.57) but the study may not apply in the current paper due to methodological differences.

Goulao (2014) examined the relationship between the self-efficacy of adult learners in an online learning context with their actual academic achievement. Data were collected from 63 students, with average age of 42 years old. An adapted questionnaire was used to measure self-efficacy (α=.908) and their academic achievement analyzed in academic course specifics. The Pearson correlation coefficient was used to ascertain the relationship between academic self-efficacy and academic achievement (Goulao, 2014). The results showed the existence of a strong positive relationship between academic self-efficacy and academic achievement (r=0.789, p<0.05) but the focus of the paper was not on form two students (teenagers).

In Kenya, Moturi (2020) examined the relationship between academic self-efficacy and academic achievement in Mathematics and English language among secondary school students in Nyamira County. The study employed both quantitative and qualitative research techniques. A study sample of 240 students from public secondary schools was selected using simple random sampling. Data was collected through a questionnaire whose reliability coefficient was determined at 0.76. Pearson Product Moment correlation, one-way ANOVA and t-test were used in data analyses. The results indicated no significant relationship between academic self-efficacy and academic achievement (r=-0.03; p>.05). No statistically significant relationship was found between academic self-efficacy and academic achievement in English language (r=.066, p>.05). However, the findings showed that there was a statistically significant relationship between academic self-efficacy and academic achievement in Mathematics (r=.13, p<.05). The current paper considered general academic achievement.

In a much-related study, Onkundi (2018) sought to determine whether academic achievement could be predicted by academic self-efficacy among students in three secondary schools in Kisii County. The study adapted a correlation research design and both descriptive and inferential statistics were employed to analyze the data. Three schools were sampled using stratified random sampling. Self-efficacy Scale (SES) was used in data collection to measure self-efficacy. Scores on academic achievement were obtained through document analysis by computing mean scores from three consecutive end-of-term examinations. The relationship between academic self-efficacy and academic achievement was tested using Pearson Product Moment Correlation coefficient. The relationship was found to be moderate and statistically significant (r=.308, p<.05). The study population of interest in this study consisted of all students and not sophomores. Most of these past related studies have reported a positive relationship between academic self-efficacy and students' academic achievement. Although the studies used various instruments to measure academic self-efficacy, the results have shown a relationship nonetheless. Also noteworthy is the fact that most of these studies have used survey methods to determine the relationship between the two or three variables.

Moderating Role of Students' Gender in the Relationship between Academic Self-efficacy and Students' Academic Achievement

Previous studies have exemplarily surveyed the supposed moderating role of gender in relation to the predictors of academic achievement. For instance, Tenaw (2022) examined the relationship between self-efficacy, academic achievement and gender among students pursuing analytical chemistry. A t-test was used to examine the difference in academic achievement. The mean achievement test result was 61.8444 for females and 66.5636 for males with standard deviations of 9.88 and 12.12, respectively. The relations between students' self-efficacy and their achievement were calculated using Pearson correlation coefficient(r). The correlation between achievement and academic self-efficacy for both sexes was found to be r=0.385, which was statistically significant at 0.01 with 98 degree of freedom (2-tailed). Correlation between achievement and academic self-efficacy for females was r=0.377*, which was statistically significant at 0.05 with 45 degree of freedom (2-tailed). Correlation between achievement and academic self-efficacy for males only was r=0.362, which was statistically significant at 0.01 with 55 degree of freedom (2-tailed). From these results it was evident that the females' mean achievement test result was lower than the males suggesting that students' gender was a moderating factor.

Shkullaku, (2022) examined the role of gender difference in the effect of academic self-efficacy on academic achievement among Albanian students from two universities in Tirana, Albania. The study involved 180 students (102 females and 78 males) selected from first, second and third level studies. A questionnaire was used to measure self-efficacy and the Grade Point Average GPA of the first semester was employed to measure students' academic achievement. T-test was used to compare the effect of academic self-efficacy on academic achievement for male and female participants. The results showed a significant difference between males and females in self-efficacy. However, there was no difference between males and females in academic achievement. This presented mixed results making the results un-generalizable to form two students.

Badiee et al. (2014) interrogated whether students' gender moderated the effect of academic self-efficacy on students' academic accomplishment in maths in intermediate schools in Tehran. The study's sample consisted of 180 girls and 180 boys. A survey design was employed and primary data was gathered through the use of guided interviews. Owing to the study attributes, the researchers reported that gender of students did not moderate the influence of academic self-efficacy on students' scholastic attainment in maths. However, the correlation coefficient illustrated that boys performed better than girls in maths. The current paper explored the presumed moderating role of students' gender in the relationship between academic self-efficacy and academic achievement.

Lerdpornkulrat (2021) interrogated whether the effect of academic self-efficacy on scholastic attainment in biology and physics was moderated by students' gender. The study considered 1538 students carefully selected from high schools in Thailand. It was evident that the academic achievement of the females was significantly better in biology (than boys) than in physics. This was attributed to the self-efficacy suggesting that the effect of academic self-efficacy on students' academic achievement in biology and physics could be moderated by gender. Based on the goal setting theory, Litalien, Morin and McInerney (2017) analyzed whether the female and male

students subjected to similar learning conditions would achieve the same academic achievement goals. A large sample of 7848 high school students from sixteen schools in Hong Kong participated in the study. There were eight learning conditions including self-efficacy. The results were collected using questionnaires and the data analyzed using regression analysis. The results showed similarity in the students' perception of self-belief but academic achievement did not differ across gender before and after moderation. However, there was need to ascertain whether gender difference would moderate the relationship between academic self-efficacy and academic achievement of on form two students in Kenya.

Summary of Review of Related Literature

The studies reviewed have not provided consistent support for the predictive validity of students' perception of classroom climate to blend with their academic self-efficacy as precursors to academic achievement. It is apparent that studies on academic self-efficacy and students' academic achievement have previously been done. It is also significant to note that the findings have pointed out that academic self-efficacy predicted students' academic achievement at varying levels especially when students' gender was considered. Given that most of the studies are conceptually and contextually diverse, the conclusions from these studies are generally inconclusive making them inapplicable in the current context. Moreover, most of the studies attracted participants from post-secondary level of education and therefore the results may not be generalized to all the form two students in secondary schools in Kenya. Therefore, the paper addressed these pertinent research gaps by exploring how academic self-efficacy predicted students' academic achievement as moderated by gender.

3. Methodology

Research Design

The study adopted the correlational research design to determine whether there was a relationship among the study variables (Creswell, 2014). The design enabled the researcher to determine the strength of the relationship among the study variables (Castillo, 2019). Through the correlational research design, the participants completed a questionnaire related to the study variables to enable the researcher gather data on the given variables. Through the correlation research design, the researcher was able to explore the linkages between academic self-efficacy and academic achievement as moderated by students' gender.

Target Population, Sampling Procedure and Sample Size

The target population emanated from public day secondary schools in Subukia Sub-County. There are 23 public day secondary schools in the Sub-County. All the schools are categorized as mixed day sub-county schools. The accessible population was form two students. The total number of form two students in the 23 public day secondary schools is 3519 (Subukia Sub-County Education Office, 2023). Three sampling techniques were employed namely purposive, simple random and proportionate sampling. Purposive sampling was used to select 5 day secondary schools and form two students. The five secondary schools were randomly selected from the list of 23 public day

secondary schools. The presence of form two students and a five-year period of existence were selection criteria. The distribution of the students is presented in table 1.

Table 1: Distribution of Form Two Students

No.	School Category	No. of Form Two Students	Percentage
School 1	Sub-County	59	14.93
School 2	Sub-County	74	18.73
School 3	Sub-County	105	26.58
School 4	Sub-County	66	16.71
School 5	Sub-County	91	20.04
Total		**395**	**100**

Source: Subukia Sub-County Education Office (2025)

Yamane's (1973) formula for estimating a sample size *n* from a known population, *N* was adapted:
$n = N/(1+Ne^2)$ Where

    n: the sample size
    N: target population, 395 in this case
    e: the acceptable sampling error (0.05)

Substituting these values in the equation, the estimated sample size were 184 form two students. Simple random sampling was then applied to select the sample size from the form two students from each of the five public day secondary schools. The required sample size was proportionately distributed to the 5 public day secondary schools and stratified (classified by gender) and simple random sampling applied in selecting the actual study participants. The sample size was proportionately distributed to all the five public day secondary schools as shown in table 2.

Table 2: Distribution of Sample Size by Per School

Type of School	No. of Students	Sample Size	Percentage
School1	59	27	14.67
School2	74	34	18.73
School3	105	50	26.58
School4	66	31	16.71
School5	91	42	20.04
Total	**395**	**184**	**100.00**

Source: Subukia Sub-County Director of Education (2023)

Data Collection Instruments

In this study, students' questionnaire and pro forma were used for data collection. The students' questionnaire was used to collect bio-data and data on the two independent variables. The questionnaire was structured to collect information concerning the students' academic self-efficacy. The expected minimum score was 1 and the maximum score was 5. The participants' end of term two marks for 2023 was recorded in a pro-forma. The class teachers were contacted to provide the results for the end term examinations. The mean score of each student in all the subjects taken was calculated. The scores were converted into standard t-scores to make them comparable across schools. The scores were categorized into four academic achievement groups. Values below 40 were classified as low levels of academic achievement, whereas, 40 to 59 were considered as average and 60-74 were considered high levels of academic achievement. Scores above 74 were considered as excellent levels of academic achievement. The grading enabled the researcher to determine whether the students achieved their academic targets, mastered the skills taught or exceeding the grade expectation. The scores were taken as continuous data to comply with the assumptions of Pearson correlation coefficient and the regression analysis (Mbaluto, 2022). The decision to use teacher ratings has been informed by the use of similar grades in related studies which have asserted that academic achievement tends to uniform across schools in Kenya because the similarity of the curriculum (Musyoka, 2020). In the cited studies, grades were taken from school records, and an overall mean score computed and the scores standardized using t-scores.

Data Analysis

The data was systematically categorized according to the specific objectives. Eventually data was analyzed with the aid of the latest version of the Statistical Package for Social Sciences (SPSS). Descriptive and inferential statistics were adapted to analyze the data. The demographic details of the respondents were described using frequencies, percentages, means and standard deviations. Pearson Correlation analysis and multiple regression analysis were employed to determine the relationship between the predictor variables and the outcome variable. To test the null hypotheses, the researcher used simple regression analysis. Each of the independent variables was regressed against form two students' academic achievement. For the prediction, the regression analysis was used to determine whether academic self-efficacy predicted academic achievement. The regression model was as follows: $Y= \beta_0+\beta_1 x_1+\varepsilon$

Where: Y = Academic Achievement
β_0 = Constant Term
β_1 = Regression Coefficients
X_1 = Academic self-efficacy
ε = Error

The influence of the criterion variable paved way for the analysis of the moderating influence of students' gender on the relationship between academic self-efficacy and students' academic achievement. The regression analysis was used to determine whether gender differences moderated the relationship between academic self-efficacy and academic achievement. The output of the regression analysis consisted of the R-squared, F-tests and regression coefficients. The

hypotheses were tested at α=0.05 level of significance and the results generated were presented in tables.

4. Results and Discussion

Descriptive Results for Academic Achievement

The form two students' total marks in eight subjects in the end of term examinations were computed and used to determine academic achievement. The average scores were then transformed into t-scores as summarized in Table 3.

Table 3: Classification of Participants' Scores on Academic Achievement

Category	Low (Below 40)	Average(40-59)	High(60-74)	Excellent(Over 74)	Total
School 1	7(25.7)	14(53.7)	4(15.2)	2(5.4)	**27(15.1)**
School 2	5(15.9)	17(51.9)	8(24.7)	2(7.5)	**32(17.9)**
School 3	10(21.5)	29(61.1)	7(13.7)	4(3.7)	**48(26.8)**
School 4	5(15.6)	16(50.6)	9(23.9)	3(9.9)	**31(17.3)**
School 5	8(19.9)	14(34.9)	15(37.6)	3(7.6)	**41(22.9)**
Average	**35(19.7)**	**87(48.4)**	**41(23.0)**	**12(6.8)**	**179(100%)**

Table 3 presents data on students' academic achievement. The parameters for academic achievement included achieving academic targets, mastery of skills taught, mean score attained and exceeding grade expectation. Out of a total of 179 participants, the academic achievement of 35 were classified as below average, 87 were classified as average, 41 were classified as high while 12 were considered excellent. Hence, the results indicated that 48.4% of the participants posted average academic achievement, 23.0% scored high compared to 19.7% who registered low academic achievement. Similarly, 6.8% of the respondents posted excellent results. To examine the significant differences in academic achievement among low, average, high and excellent performing students, Analysis of variance (ANOVA) was carried out and the results presented in Table 4.

Table 4: ANOVA results for the significant differences in academic achievement

		Sum of Squares	Df	Mean Square	F	Sig.
	Between Groups	89.73	1	44.86	.449	.000
Low	Within Groups	941.21	178	100.01		
	Total	**1029.94**	**179**			
	Between Groups	279.42	1	39.91	.414	.003
Average	Within Groups	722.17	178	96.33		
	Total	**999.59**	**179**			
	Between Groups	89.38	1	56.86	.526	.000
High	Within Groups	94.21	178	108.05		
	Total	**183.59**	**179**			
Excellent	Between Groups	79.62	1	39.46	.441	.000
	Within Groups	91.21	178	89.41		
	Total	**170.83**	**179**			

The results presented in Table 4 demonstrated that there were significant mean differences in academic achievement for low (0.05>0.639), average (0.05>0.337), high (0.05>0.137) and excellent (0.05>0.209) performing students.

Descriptive Results for Academic Self-Efficacy

Similarly, students' academic self-efficacy was examined in terms of academic self-resilience, goal setting, meeting academic expectations and using academic support. The results of the descriptive analysis regarding the statement on academic self-efficacy are presented in Table 5.

Table 5: Descriptive Statistics for Academic Self-Efficacy

Statements	N	M	Std. Dev
I am able to assess how useful my learning is	179	4.1429	0.81096
I always work towards meeting my academic expectations	179	4.1000	0.99441
Everyone in my class offers one another moral support	179	4.0857	1.06746
I have confidence in my ability to achieve academic goals	179	4.0714	1.03204
I am able to evaluate my ability in solving learning tasks	179	4.070	0.99960
I always worked hard under difficult circumstances	179	3.9571	0.91445
I always analyze my abilities before setting academic goals	179	3.9000	1.01681
I have the capability to concentrate on my studies	179	3.7714	1.26619
My self-confidence increases after finishing learning task	179	3.7714	1.01557
I am efficient in finding my own weaknesses	179	3.9882	0.85346
I have strong academic capabilities	179	3.8412	0.87642
I always prepare for learning before teachers come in class	179	4.1059	0.78662
I always set my own academic goals	179	2.9090	0.87848
I always use available support to improve my achievement	179	2.9100	0.89851

Table 5 shows the results regarding scores on statements related to learning support, teacher-relational-support, and school belonging and classroom management. It is evident that the respondents were able to assess how useful their learning was (M=4.1429; SD=0.8107). The respondents were also always working towards meeting their academic expectations (M=4.1; SD=0.99441). This implied that there was support that promoted students' academic self-efficacy. It is also evident that the respondents had confidence in their own ability to achieve their academic goals (M=4.0714; SD=1.03204). The respondents were also able to evaluate their ability in solving learning tasks (M=4.070; SD=0.9996). Similarly, it is evident that the respondents worked hard even under difficult circumstances (M=3.957; SD=0.91445) and were able to analyze their abilities before setting their academic goals (M=3.9000; SD=1.0168).

The respondents concurred that they were able to concentrate on their studies (M=3.7714; SD=1.26619) which improved their self-confidence increased after finishing learning task (M=3.7714; SD=1.01557) making them efficient in finding and rectifying their own weaknesses (M=4.0882; SD=0.85348). Similarly, the respondents agreed they had strong academic capabilities (M=3.8412; SD=0.87641). Similarly, the respondents agreed that they were always prepared for learning before teachers arrived (M=4.1059; SD=0.78662). However, the respondents were noncommittal that they often set their own academic goals (M=2.909; SD=0.87848) and used the

available support to improve their academic achievement (M=2.91; SD=0.8981). ANOVA test was performed to further examine the significant differences in the academic self-efficacy among low, average, high and excellent performing students. The results for ANOVA test are presented in Table 6.

Table 6: ANOVA test in academic self-efficacy

		Sum of Squares	Df	Mean Square	F	Sig.
	Between Groups	58.77	2	27.26	30.98	.0000
	Within Groups	11.17	177	0.88		
Low	**Total**	**69.94**	**179**			
	Between Groups	71.23	2	39.11	8.30	.000
	Within Groups	22.45	177	4.71		
Average	**Total**	**93.68**	**179**			
	Between Groups	31.51	2	34.19	10.27	.0011
	Within Groups	8.29	177	3.33		
High	**Total**	**39.80**	**179**			
	Between Groups	21.33	2	55.11	10.32	.000
	Within Groups	6.25	177	5.34		
Excellent	**Total**	**27.58**	**179**			

The results presented in table 6 show the F-statistics for the main differences within and between the mean scores in the academic self-efficacy among low, average, high and excellent performing students. The results indicated that model was statistically significant in explaining the difference in academic self-efficacy. Hence, academic self-efficacy explained the differences in the mean scores in academic achievement for the low (F=30.98; p=0.000), average (F=8.30; p=0.000), high (F=10.27; p=0.0011) and excellent performing students (F=10.32; p=0.000).

Relationship between Academic Self-efficacy and Academic Achievement

The paper adopted the correlation analysis to ascertain the relationship between academic self-efficacy and academic achievement. It was hypothesized that there was no significant relationship between academic self-efficacy and academic achievement. Pearson's Product Moment Correlation Coefficient was used to determine whether the relationship between the variables was significant and the results obtained are presented in Table 7.

Table 7: Pearson Product Moment Correlation Analysis Results

		Academic Achievement	Academic Self-efficacy
Academic Achievement	Pearson Correlation	1	.731[**]
	Sig. (2-tailed)		.000
	N	179	179
Academic self-efficacy	Pearson Correlation	.731[**]	1
	Sig. (2-tailed)	.000	
	N	179	179

**. Correlation is significant at the 0.01 level (2-tailed).

The results presented in Table 7 reveal the correlation coefficient between academic self-efficacy and academic achievement. It is evident that there was a strong positive significant relationship (r=0.731; p=0.000) between academic self-efficacy and academic achievement. Therefore, it is construed that there is a significant relationship between academic self-efficacy and academic achievement of form two students in secondary schools in Subukia Sub County. The results imply that academic self-efficacy was associated with students' academic achievement. This is congruent with Khalili, Nazemi and Alborzi (2019) who confirmed that academic self-efficacy was associated with academic achievement. Similarly, the findings supported White (2017) who found a positive and significant relationship between academic self-efficacy and student achievement. Other studies that support the findings include Goulao (2014) who ascertained the existence of a positive significant relationship between academic self-efficacy and academic achievement. However, the results are inconsistent with Moturi (2020) who failed to identify any significant relationship between academic self-efficacy and academic achievement.

Students' Gender, Academic Self-Efficacy and Academic Achievement

The paper examined whether students' gender moderated the relationship between academic self-efficacy and academic achievement of form two students. The regression analysis was used to determine whether students' gender had a moderating influence on the relationship between academic self-efficacy and academic achievement. The regression coefficient results with gender as a moderator are presented in Table 8.

Table 8: Students' Gender, Academic Self-Efficacy and Academic Achievement

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.417	.224		10.976	.000
	Self-Efficacy	.508	.050	.311	3.665	.000
	Students' gender	.230	.045	.497	5.157	.000
a. **Dependent Variable: Academic Achievement**						

It is evident that academic achievement significantly improved when students' gender was considered (p=0.000). This suggested that students' academic achievement was average but with the moderator students' academic achievement improved. However, students' gender minimized the strength of the relationship ([r (197) =.311, p<.05]). It was hypothesized that students' gender did not significantly moderate the relationship between academic self-efficacy and academic achievement. It was construed that students' gender moderated the relationship between academic self-efficacy and academic achievement. This is supported by Tenaw (2022) who found that the mean achievement for girls was generally lower than that of the boys confirming that students' gender was a moderating factor. Shkullaku (2022) also found that students' gender had a significant difference between males and females in self-efficacy. Lerdpornkulrat (2021) concurred that academic achievement of girls was significantly better than boys and this difference was attributed to self-efficacy suggesting that the effect of academic self-efficacy on students' academic achievement could be moderated by gender. Similarly, Litalien, Morin and McInerney

(2017) confirmed the perceived existence of similarity in the students' perception of self-belief but academic achievement did not differ across gender before and after moderation.

Prediction of Academic Achievement based on Academic self-efficacy

The regression analysis was used to determine whether academic self-efficacy was a predictor of students' academic achievement. The results are presented in table 9.

Table 9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.836[a]	.699	.649	.10011

a. Predictor: (Constant), academic self-efficacy

The results in Table 9 show the joint prediction of academic self-efficacy on students' academic achievement. The results show that academic self-efficacy predicted 69.9% of the change in students' academic achievement (R^2=0.699). However, the adjusted R square value of 0.649 implied that academic self-efficacy predicted 64.9% of the variation in academic achievement. ANOVA results for the model applied to predict students' academic achievement based on academic self-efficacy are presented in table 10.

Table 10: ANOVA for Academic Self-efficacy

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	21.603	2	2.923	194.867	.000[b]
	Residual	4.192	177	.015		
	Total	**25.795**	**179**			

a. Dependent Variable: Academic Achievement
b. Predictor: (Constant), Academic Self-efficacy

Table 10 presents the results on the analysis of the variance (ANOVA) for the predictor variable. The results indicated that the *F*-statistic was 194.867 (p=0.000). The model applied to predict students' academic achievement based on academic self-efficacy was significant and displayed goodness. This implied that academic self-efficacy predicted form two students' academic achievement. The results of the coefficients for academic self-efficacy are presented in table 11.

Table 11: Beta Coefficients for Academic Self-efficacy

Model	Unstandardized Coefficients		Standardized Coefficients		
	Beta	Std. Error	Beta	t	Sig.
(Constant)	.572	.230		5.181	.000
Academic self-efficacy	.578	.029	.654	14.415	.000
1					

a. Dependent Variable: Academic Achievement

The results on beta coefficients presented in Table 11 indicated that without the predictor variable, academic achievement would remain fixed at 0.572 units. However, a unit increase in academic self-efficacy would lead to a significant increase of 0.654 (65.4%) in academic achievement (p=0.000). Based on the standardized beta coefficient results, academic self-efficacy was found to be a significant predictor of academic achievement of form two students in secondary schools in Subukia Sub County. This is supported by Smith and Naylor (2019) who reported that academic self-efficacy predicted academic achievement. This has also been supported by Mackenzie and Schweitzer (2019) who investigated the psychosocial constructs influencing students' academic achievement and recognized self-efficacy as a strong predictor of academic achievement.

The results are also supported by Kabunga (2022) who revealed that self-efficacy was necessary in enhancing students' academic achievement thus calling for institutionalization of academic self-resilience, goal setting, meeting academic expectations, using academic support, offering free consultation, group learning activities, overcoming fear of academic failure and healthy academic competition among learners including form two students. Moreover, the results have supported the central ideas behind the academic self-efficacy theory which was considered as the theoretical foundation of the study. It is evident that when students successfully complete learning tasks, they tend to develop a high sense of self-efficacy as postulated by the academic self-efficacy theory.

5. Conclusion and Recommendations

Conclusion

The study examined academic self-efficacy as a predictor of academic achievement of form two students in public secondary schools in Subukia Sub County, Nakuru County, Kenya. It also explored whether there were significant differences in the relationship between students' academic achievement and academic self-efficacy based on students' gender. The conclusion drawn is that academic self-efficacy accounted for the significant change in academic achievement of form two students in Subukia Sub County, Kenya. Students are more likely to thrive academically when their own personal belief to succeed is allowed to dominate their learning environment. This suggests that more attention should be directed towards academic self-resilience, goal setting, meeting academic expectations and using academic support by the form two students in order to enhance academic achievement. Thus, academic self-efficacy plays a significant role in determining students' academic achievement. It is evident that the findings reflect the theoretical assumptions and previous results in the reviewed literature. The results have revealed that self-efficacy theory of learning is appropriate in examining academic self-efficacy as it relates to students' academic achievement.

Recommendations

Given that academic self-efficacy predicted academic achievement, students need to be encouraged to pursue learning goals that are in harmony with their interest. Teachers should be encouraged to strengthen the application of inherent motivation. This can be done by encouraging the students to interact freely with the teachers so that their intrinsic motivation can be nurtured. Teachers should offer support in a manner that corresponds with the identified self-efficacies of the learners. The teachers could be advised to offer guidance rather than punishment to the students

who are unable to cope with learning tasks in the prevailing classroom environment. The study has also highlighted the need to create a conducive learning environment that can harness the students' need to succeed in their academic work. This finding, therefore, implies that school curricula and evaluation systems should be directed towards creating a balance between external environment and intrinsic learning orientations.

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