

ACADEMIC MOTIVATION AS A PREDICTOR OF SELF-REGULATED LEARNING MONG FORM THREE STUDENDENTS IN NYERI COUNTY, KENYA

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DOI: <https://doi.org/10.5281/zenodo.7992953>

Published Date: 01-June-2023

Abstract: The aim of this study was to determine the relationship of academic motivation and self-regulated learning in Nyeri County, Kenya. The study was guided by Self-Determination Theory (SDT) (Deci and Ryan,1985). The study adopted an ex-post research design. Purposive sampling, simple random sampling, proportionate sampling and stratified sampling were used to select a sample of 200 form three students (131boys and 69 girls) from 4 public secondary school in Nyeri Central Sub-County, Nyeri County Kenya. Piloting of the questionnaire was done in one public school. Data on academic motivation was collected using Academic Motivation Scale (AMS)- high school version by Vallerand et al. (1992) and data on self-regulated learning was collected using Motivation Strategy for Learning Questionnaire (MSLQ) (Pentrinch & De Groot, 1990). Product Moment Correlation Coefficient and Multiple Regression Analysis were used to test the stated null hypothesis set at $\alpha=0.05$. Analysis of collected data was done using SPSS version 20.0 for windows while descriptive statistics such as percentage, means and frequencies were used to summarize the data. The results revealed that there was a significant relationship between academic motivation and self-regulated learning strategies ($r(196) = .77, p < .01$). Four out of the seven domains of academic motivation had a significant predictive on self-regulated learning. Intrinsic motivation towards accomplishment towards had the positive highest predictive weight ($\beta = .56, p < .05$), followed by intrinsic motivation to know ($\beta = .09, p < .05$). negative significant prediction was found in extrinsic motivation external regulation and amotivation ($\beta = -.13, p < .05$ and amotivation ($\beta = -.14, p < .05$). The recommendations of this study included educators and school administrators to devise intervention measures to help students develop high levels of intrinsic motivation.

Keywords: academic motivation, Self-Determination Theory (SDT), intrinsic motivation.

1. INTRODUCTION

Self-regulated learning refers to a multidimensional construct comprising of learning strategies, abilities and skills which help a learner in monitoring their cognitive and metacognitive processes so as to persist in a goal-directed behaviour (Schunk & Zimmerman, 2013). Globally, when students transit from primary school to high school, there is a demand for them to advance their self-regulated learning strategies for effective learning to be realized. Donker and Kostons (2012), suggests

that primary school students are not well equipped with learning skills of self-regulation. Therefore, there is need to train the learners in high school to adopt strategies of self-regulation of learning to help them meet the ultimate goal of education which is academic performance.

All over the world, the classroom learning is becoming impractical in most countries following COVID-19 pandemic thus creating room for online learning. Online learning calls for the learner to self-regulate in their studies. In the USA for instance, the impact of COVID-19 pandemic has necessitated teachers to facilitate learners to develop self-regulated learning strategies to ensure that online study is effective (Cater, Rice, Yang & Jackson, 2020). Additionally, studies have credited teachers and parents in playing a vital role in facilitating adoption of learning styles of self-regulation among learners in their studies (Perry, Fisher, Caemmerer, Keith & Poklar, 2018). Similarly, in the UK research has also shown the need to prepare teachers to train learners to adopt self-regulated learning strategies so as to help them in their autonomous studies (Oates 2019). In South Africa, just like in the USA, there is an increase in rise of online learning which has called for researchers to study on how use of self-regulation learning styles impacts academic performance. Bothma and Monteith (2004) posit that despite the fact that many of the rural areas of South Africa lack "easy access" to technology, strategies of self-regulation of learning are imperative for academic performance.

In Kenya various studies have credited students' role in learning to positively impact academic performance. For instance, Mutua, (2018) suggests that in learning, the learner has to play the pivotal role, despite the influence of the teacher and the parent, to improve their performance. This study further shows that motivational beliefs and self-efficacy contribute to the students' use of learning strategy. Mutweleli (2014) conducted a correlational study on self-regulated learning and academic performance. This study credited all the learning strategies of rehearsal learning and organization learning strategy have a positive predictive weight. Studies by Mwachu (2018) show performance in reading comprehension was influenced by cognitive strategy and metacognitive knowledge.

Statement of the Problem

Ineffective adoption of strategies of self-regulation in academic tasks may be attributed to learners posting poor performances in the national examinations. Consequently, these learners miss out opportunity to join higher institutions of learning to further their studies and may have far reaching consequences in depriving the society manpower with skills necessary to steer economic growth. Such negative impact necessitated studying the factors that may facilitate or counter the adoption of strategies of self-regulation.

Available studies have not investigated sufficiently how academic motivation predicts self-regulated learning strategies in Kenyan context. Studies done in Kenya have focused on academic motivation and self-regulated learning as predictors of academic motivation.

Objective of the Study

The objective of the study was to determine the relationship between academic motivation and self-regulated learning.

Research Hypothesis

The following hypothesis was used

H₀₁: There is a significant relationship between academic motivation and self-regulated learning.

Theoretical Framework

The study was guided by Self-Determination Theory (Deci & Ryan, 1985). The theorists offer a substantive model of the construct motivation by probing the type of motivation that is being depicted at a particular moment through considering the drives and the motives that causes an individual to act. Three major types of motivation were identified by this model. Intrinsic motivation which makes an individual to engage in a task since involvement in the task makes one feels satisfied inherently (Deci & Ryan, 1985) was the first type.

Secondly, there is extrinsic motivation which is a psychological feature that instigates one to act towards an outcome that is separable such as a reward or status accordance. There are three domains of extrinsic motivation which occur in a continuum. The first is external regulation which involves the learner working to attain rewards. Next in the continuum is the introjected motivation where the one realizes the cause of their own behaviour from past external contingencies. The last kind of motivation is amotivation. This is shown when individuals fail to perceive necessity of their behaviour nor the rewards of

the others towards their efforts. Thus, such an individual may feel out of control of their behaviour and this will inhibit any engagement in learning tasks.

Deci and Ryan (1985) theory of self-determination formed the theoretical framework for studied by Mutweleli (2014) and Gachigi (2018). According to Gachigi (2018), the motivation orientation of the learner determines the student's interest and engagement in learning which influences their performance in mathematics. Mutweleli (2014) suggests that intrinsically motivated learners engage in learning tasks and show persistence because they are interested in academic tasks. Based on these studies, a learner who is highly academically motivated may engage in self-regulation strategies better compared to their counterpart with low level of academic motivation. In this study, the social cognitive theory aided the researcher in explaining students' academic motivation orientation and their preference in adoption of the varied learning styles of self-regulation.

2. REVIEW OF RELATED LITERATURE

Aydin (2015) studied the relationship of student's use of metacognitive strategy of learning and their academic motivation for learning Biology among students in Kars, Turkey. The sample consisted of 286 students from three high schools in Anatolia. Data on metacognitive self-regulation was collected using Motivated Strategy for Learning Questionnaire (MSLQ) Turkish version and the Academic Motivation for Learning Biology Scale was used to measure academic motivation. Findings from this study showed that metacognitive self-regulation strategy correlated positively with both extrinsic motivation and intrinsic motivation and negatively with amotivation. The study was limited only to academic motivation in learning Biology while the current study focuses on academic motivation in general without narrowing down to Biology but rather the seven domains of academic motivation.

Cetin (2015) studied the relationship of learner's academic motivation and self-regulation and their prediction to academic achievement in the USA. The sample comprised of 166 undergraduates drawn from Georgia Southern University. Academic motivation was measured using AMS and Academic Self-Regulated Learning Scale (A-SRL-S) was used to collect data on academic self-regulation. From the findings of this study, it was evident that the two study variables correlated positively. This study was conducted among university undergraduates and a different scale was used to measure self-regulated learning. The current study sought to compare findings with this study using a sample from a developing country and using a different scale to measure self-regulated learning.

Sean (2015) conducted research to examine patterns of relations between academic motivation and the level of self-regulation among 372 undergraduates in Midwest, USA taking online courses. Data on use of self-regulation was collected using MSLQ while that of motivation was collected using a self-made questionnaire. Findings from this study indicated existence of a positive correlation in both intrinsic and extrinsic motivation with the individual's level of self-regulation. This study was conducted among students taking online courses unlike in the current study where traditional classroom instruction hence was interesting to compare these findings.

Walker, Greene, and Mansell (2006) examined predictive value of intrinsic motivation on cognitive engagement (shallow processing and meaningful cognitive engagement). The sample was drawn from 191 volunteers from a large Southwestern university in the USA aged between 18 to 22 years. Data on intrinsic motivation was collected using AMS scale and on cognitive engagement was measured using Cognitive Engagement Scale. The findings indicated a positive relationship intrinsic motivation and meaningful styles of cognitive engagement while amotivation related negatively with these deep strategies cognitive engagement. Extrinsic motivation was reported to be positively correlated with the cognitive tasks which are less demanding. This study was only centered on students aged 18-20 years unlike the current study which age range was more divergent as the cohort in form three ranges from 14- 20 years in a Kenyan Context thus it would allow comparison of findings.

Zusho and Pintrich (2003) conducted a study among 485 undergraduates in the university of Michigan, USA. The study investigated the correlation of motivational component and self-regulated learning and the use of cognitive learning strategy use. Data on cognitive strategy use was collected using MSLQ. This study's findings indicated existence of a positive relationship among self-regulated learning and motivational beliefs. This study was done in the western country and among undergraduates unlike the current study that is conducted in a developing country.

3. MATERIALS AND METHODS

Participants

The participants of this study were form three students in public schools in Nyeri Central Sub- County. There were 200 students (131 boys and 69 boys) drawn from 4 public secondary school in Nyeri Central Sub-County, Nyeri County, Kenya.

Measures

Academic motivation Scale (AMS) high school version was used to collect data on students' academic motivation. Each item in this scale was measured on a 7 points Likert scale. The scale measured seven dimensions of academic motivation. Each dimension gave a score ranging from 4 – 28. Academic motivation total score ranged between -18 and 18.

Motivated Strategy for Learning Questionnaire (MSLQ) was adopted to measure self-regulated learning strategies. 22 items measuring cognitive and metacognitive learning strategies included. Items were measured on a 6 points Likert scale.

4. RESULTS AND DISCUSSION

The objective of the study sought to determine the relationship between secondary school students' academic motivation and self-regulated learning strategies. Based on this objective, a null hypothesis was formulated that there is no significant relationship between self-regulated learning. In efforts to test this hypothesis self-regulated score was computed from MSLQ. A description of self-regulated learning score in terms of maximum, minimum, standard deviation and kurtosis is presented in Table 4.1.

As shown in Table 4.1, the students self-regulation score ranged from 2.23-5.77. The mean was 3.7(SD=.93). A negatively skewed distribution was evident from the scores which implied that the students rated themselves highly in this scale.

Table 4.1: Self-Regulation Score Description

SRL	Range	M	SD	Skewness	Kurtosis
	2.23 -5.77	3.9	.93	-.12	-1.4

Note. N= 196. SRL= Self- Regulated Learning

Further, academic motivation score was computed from AMS and the results are shown in Table 4.2. From Table 4.2, academic motivation score ranged between 1.0-10.58 (M= 5.97, SD=2.29). The distribution was negatively skewed that implied that the student scored highly in academic motivation.

Table 4.2: Description of Academic Motivation Score

ACMT	S. D	Range	Min	Max	Mean	Skewness	Kurtosis
	2.29	9.58	1.0	10.58	5.97	-.15	-1.13

Note. N=196. ACMT= Academic Motivation

Further, academic motivation sub-scales scores were computed and the results presented in Table 4.3.

From the results in Table 4.3, in the sub-scales of intrinsic motivation, intrinsic motivation to accomplish the highest mean was recorded (M=20.5, SD=4.34). while intrinsic motivation to experience stimulation recorded the least mean. Also, apart from intrinsic motivation to accomplish that was negatively skewed, the rest were positively skewed. This meant that the students' exploitation of the self- regulated learning strategy was largely not contributed to intrinsic motivation domain. Extrinsic motivation external regulation sub scale had the highest mean (M=22.17, SD=2.95) in extrinsic motivation domain while in extrinsic motivation introjected subscale the least mean was recorded (M=18.48, SD=3.34). All the domains of extrinsic motivation distribution were negatively skewed which implied respondents scored high scores in extrinsic motivation. Lastly, in the domain amotivation, mean was (M=7.02, S. D= 1.87) and the distribution of scores was positively skewed which implied the students scored lowly in this domain.

Table 4.3: Description of Learning Motivation Sub-Scales.

Sub scale	Range	Minimum	Maximum	Mean	S. D	Skewness	Kurtosis
IMTK	18	9	27	18.25	3.14	0.26	-.15
IMTA	16	12	28	20.5	4.34	-0.29	-1.21
IMES	17	12	28	17.68	3.76	.14	-.64
EMER	14	14	28	22.17	2.95	-.11	0.37
EMID	15	13	28	20.62	3.61	-.07	-.89
EMIN	16	12	28	18.48	3.34	-.49	-.79
AMT	8	4	12	7.02	1.87	.17	-.07

Note. N= 196 IMTK= Intrinsic Motivation to Know; IMTA= Intrinsic Motivation Accomplish; IMES= Intrinsic Motivation to Experience Stimulation; EMID= Extrinsic Motivation Identified; EMIN= Extrinsic Motivation Introjected; EMER= Extrinsic Motivation External Regulation; AMT= Amotivation.

To test the first hypothesis, a bivariate analysis was conducted on academic motivation score and self-regulated learning using Pearson Product Moment Correlation Coefficient. The results indicated existence of a positive relationship which was statistically significant between academic motivation and self- regulation ($r(196) = .77, p < .01$). Hence the rejection of the null hypothesis was rejected. Therefore, the conclusion was that a significant relationship existed between academic motivation and self- regulated learning. The results suggest that high score the learning motivation was proportionate to high the score in self- regulated learning and the lower the learning motivation score the lower the self-regulation score.

Further analysis was conducted to determine the correlation of academic motivation sub-scales on self-regulated learning using multiple regression analysis. The findings are depicted in Table 4. 4.

Table 4.4: Beta Coefficient of Academic Motivation Sub-Scales on Self- Regulation

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error			
(Constant)	1.80	.79		2.27	.02
Intrinsic know	.11	.05	.09	2.01	.04
Intrinsic Accomplish	.48	.06	.56	7.53	.00
Intrinsic Experience Stimulation	-.02	.06	-.01	-.24	.80
Extrinsic Identified	.10	.07	.10	1.49	.13
Extrinsic Introjected	.01	.05	.01	.22	.83
Extrinsic External Regulation	-.15	.05	-.13	-2.68	.00
Amotivation	-.29	.11	-.14	-2.54	.01

Note. N=196

From Table 4.9, the findings showed that four sub-scales of learning motivation were significantly predicted self- regulation. Intrinsic motivation to accomplish had the highest positive predictive weight on self- regulated learning ($\beta = .56, p < .05$) followed by intrinsic motivation to know ($\beta = .09, p < .05$). A significant negative predictive weight was witnessed in the domain external regulation whose predictive weight was negative and significant ($\beta = -.13, p < .05$) which was a similar trend in amotivation ($\beta = -.14, p < .05$).

5. DISCUSSION

The present study's findings were consistent with Cetin (2015) study which reported existence of a positive relationship between learning strategies of self-regulation and learning motivation just like in the current study despite the fact that Cetin (2015) used a different scale to measure self-regulated learning and having a sample comprising university students whereas in the current study students in high school comprised the sample. Thus, regardless of the level of school and scale, different

location and cross-cultural differences, academic motivation was shown to have a positive correlation with self-regulation. These studies suggested that academically motivated learners extensively utilized learning strategies of self-regulation.

The current study findings agreed to some extent with those of some extent with those of Sean (2015) they reported existence of positive relationship between both extrinsic motivation and intrinsic motivation domains of self-regulation. However, the current study showed that specific relationship of academic motivation domains. Self-regulated learning had correlated positively with domains intrinsic motivation to know and intrinsic motivation towards accomplish. However, intrinsic domain to experience stimulation was negatively correlated with learning self-regulation. In the case of extrinsic motivation, where Sean (2015) had reported positive relationship the current study findings differed with these findings since a negative correlation was dominant in extrinsic motivation domain since a positive relationship was only reported in extrinsic motivation domain identified with self-regulation.

The current findings on the relations of amotivation and self-regulation validated findings of Aydin (2015) and Walker, et al, (2006) which reported a negative relationship between the two variables. This implied that amotivation was a hindrance effective use of strategies of self-regulation among learners. However, the present findings in the other two types of academic motivation (intrinsic and extrinsic motivation) were inconsistent with those of Aydin (2015) and Walker, et al, (2006). For instance, both Aydin (2015) and Walker, et al, (2006) reported a positive relationship of intrinsic motivation and self-regulation strategies. This was similar trend observed in two out of the three domains of intrinsic motivation (to know, to accomplish) but a negative relationship was observed in the domain intrinsic motivation to experience stimulation and self-regulation. Lastly, for the case of extrinsic motivation, the current study reported a negative correlation in two domains of extrinsic motivation (introjected and external regulation) whereas the domain extrinsic motivation identified was the only domain with a positive correlation value with self-regulation. These findings contrasted with that of Aydin (2015) which reported a positive relationship of extrinsic motivation with metacognitive regulation. This variation in findings may be attributed the fact that the scale that was used to measure academic motivation in Aydin (2015) was limited to only motivation shown in learning biology only as opposed to that of the current study one.

Findings from multiple regression analysis revealed that some academic motivation domains were significant predictors of self-regulation. The findings reported by Walker, et al, (2006) study that intrinsic motivation had a positive predictive value on student's self-regulation are supported by the current finding. Although this study did not narrow down to the specific domains of intrinsic motivation the researcher did in the present research, a positive and significant weight was reported intrinsic motivation (to accomplish and to know). Findings on amotivation having a predictive value that was negative and significant on cognitive learning strategy was consistent with that of the current study. Despite the current study's findings that extrinsic motivation (identified and introjected) domains had positive predictive value, on self-regulation, the value was not significant. Hence students who depicted this kind of motivation were not likely to exploit both cognitive and metacognitive strategies thoroughly as this score in extrinsic motivation domain would be attributed to chance. This was a contradiction of the earlier findings by Walker, et al, (2006) that extrinsic motivation positively predicted shallow cognitive engagement tasks.

Finally, students who scored highly in academic motivation scored highly in self-regulation in comparison with the ones who scored low level of the same. This finding supported Mutweleli (2014) who attributed student with high level of academic motivation to have more academic achievement as a result of engagement in learning activities. Further, these findings were in support of Ajayi, Lewani and Salomi (2012) postulation that learning motivation was an integral construct in learning and consequently academic motivation.

6. CONCLUSION AND RECOMMENDATION

The study's objective was to explore the relationship between academic motivation and self-regulated learning. The findings revealed that there was a significant relationship between academic motivation and self-regulated learning strategies ($r(196) = .77, p < .01$). These findings supported earlier studies by Cetin (2015) although his studies were conducted among university students. The results illustrated that academic motivation and achievement emotions had significant relationship with learning strategies of self-regulation. Academic motivation correlated positively and significantly with self-regulation. However, negative relations were identified in domains extrinsic motivation external regulation and amotivation. These domains can be used to single out learners with high likelihood to have difficulties using self-regulation strategies. Both parents and teachers may devise with ways of firing inner drive among the learners by explaining to them the significance of high school studies on their future lives. This may help the student to develop both intrinsic motivations to know and

intrinsic motivation towards accomplishment that will facilitate the use of strategies of self-regulation. Amotivation was recorded the highest negative significant influence on self-regulated learning. This kind of motivation crops up among learners when they lack initiative or the impetus to carry on the learning tasks. Since study has proved that students' lack of motivation has negative influence on self-regulation, teacher and parents should aspire to create in the learner the initiative and the desire to learn so that the learner can persist in learning tasks willingly. This can be done through creating a learner friendly environment and also being sensitive in the students' issues. Teachers should therefore; incorporate teaching methods that enhances students' curiosity, long-term persistence and inner drive so as to enhance self-regulated learning strategies.

The study only focused on form three students in Nyeri County. It focused only on cognitive and metacognitive domains of self-regulation. A similar study can be conducted in other counties in Kenya as well as other countries in the world and include other domains of self-regulation like motivational beliefs.

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