Cognitive Academic Engagement as a Predictor of School Completion Intention of Pupils in Upper Classes in Primary Schools in Tharaka Nithi County, Kenya

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Keywords:	Abstract
	Primary school education in Kenya struggles with many pupils not finishing school, which is a significant issue for both individuals and society. Academic engagement is a vital but often debated factor for educational success, yet research on this in Kenya is limited. This study explored the connection between cognitive academic engagement and pupils' intention to complete school in Tharaka Nithi County, Kenya. Guided by social cognitive theory and using correlational design, this study targeted all 12,250 pupils in 63 primary schools in Tharaka North Sub-County. A stratified sample of 295 pupils in grades six, seven, and eight completed the questionnaires. Research instruments were piloted with 60 pupils from one school that was exempted during the actual data collection period. Data were analyzed using both descriptive and inferential techniques. The results revealed a significant positive moderate correlation between cognitive academic engagement and school completion intention $(r\ (283) = 0.50,\ p < .01)$. Regression analysis revealed that cognitive academic engagement significantly predicted school completion intention $(F\ (1, 283) = 92.25,\ P = .00)$, accounting for only 24.60% of variability in this intention. Pupils' academic engagement significantly influences their intention to leave primary school early, suggesting schools should improve this engagement.

INTRODUCTION

Background of the Study

In today's competitive, globalized and knowledge economy, it is paramount for every country to make sure that all young people gain knowledge and skills needed to participate successfully and

innovatively in the employment sector and in society at large (Gatsi 2018) and (Pilotti et al., 2017). Therefore, having pupils join school and complete education and knowing the factors that influence their intention to complete school is of great concern to all educators. To realize this crucial goal, each country has made remarkable investment in education to ensure quality education for all by striving for successful and hundred percent completion of education by learners from primary school level to tertiary level. United Nations also declared education a human right and pivotal in the pursuit of development, economic and social transformation (UNICEF, 2007).

As a result, most international communities made the financing of education a nation duty to ensure all children are able to access and complete school. For instance, according to NCES (2015), the government of USA is in charge of financing the education of more than 90% of all children in elementary and secondary schools. Similarly, Ghana government introduced free compulsory basic education programme (FCUBE) in 1995 (Ekundayo 2018). Making primary education compulsory is important for a number of reasons. It enables children to learn fundamental literacy and numeracy skills, broaden their understanding of the world, equips them with basic life skills, fosters socialization, nurture critical thinking, and essentially, address the problem of students dropping from school before they complete their primary school education for lack of fees (Roser & Ortiz 2021).

The issue of not completing school by pupils continues to remain a persistent concern. Intention to leave or not to complete school is viewed as an ultimate stage in a cumulative process of disengagement (Archambault & Dupere, 2017; Rumberger et al., 2017; Rumberger & Rotermund 2012). This has made educators and educational psychologists to focus their research on the role of individual factors such as academic engagement on pupils' intention to complete school (Roser & Ortiz, 2021; Mastrorilli, 2016; Robinson, 2016; Rouse, 2019). Extant literature delineates academic engagement into three dimensions, that is, behavioral, cognitive and emotional/psychological academic engagement (Robinson, 2016; Burnette, 2017; Truta et al., 2018). Behavioral academic engagement focuses on the practices and actions directed towards school and school experiences. Cognitive academic engagement entails learner's mental investments to academic activities and emotional academic engagement refers to positive affective reaction towards school experiences (Robinson, 2016; Burnette, 2017; Truta etal., 2018).

In Europe, Rouse (2019) study identified academic disinterest/disengagement among other factors like teacher connection and a sense of hopelessness as potential push and pull factors influencing school children's verdict to leave high school early. However, the study was focused mainly on high school learners in a developed country. Since the age of learners in high school and culture could have influenced the results, the present researcher concentrated on class six, seven and eight pupils in Kenyan context to compare the results across age and culture. Another research in Southeastern Virginia by Robinson (2016) also links the three levels of academic engagement-behavioral, emotional and cognitive engagement to high school learners' intention to leave school. Behavioral was assessed in terms of reasons for attending school, participation within the class and involvement with teachers. From these results, it can be inferred that students with high score in participation and involvement with school experiences have also high intention to complete school. Based on these results, the current study was undertaken to investigate the intention to complete school under the phenomenon academic engagement.

Regionally, Gatsi (2018) study in Zimbabwe stated that the learners drop out of school due to personal factors. To understand the issue of school dropout he sought first-hand information from the dropout from the themselves. The study, however, did not shed light on which personal factors. Therefore, objective of this study was to examine academic engagement as one of the personal factors

influencing pupils' intention to leave school early. Kenya government also started offering free and compulsory education in 2003 to facilitate students who were at-risk of leaving school early to complete their basic primary education (Education System Kenya, 2012). However, despite the Kenyan government effort to implement free and compulsory education thousands of children are still not completing primary education (Kenya National Bureau of Statistics (KBNS) (2013-2019). The KBNS (2013-2019) statistics shows that despite the improving completion rate, over years slightly above 30 percent of primary school candidature fail to sit for the KCPE. These statistics indicated the need to investigate into factors contributing to non-completion rate among pupils in primary school pupils that have not been paid attention to.

Problem of The Study

Primary school education has continued to face the challenge of many pupils not completing school in Kenya. In Tharaka Nithi, particularly, Tharaka North Sub-County, the issue of students not completing school is worrisome as reflected by educational statistics from Sub-County Education Office (Tharaka North Sub-County, 2020). These statistics reveal that 759 out of 1272 boys (60%) and 675 girls out of 1195 girls (56%) of pupils who enrolled in class one in 2009 did not sit for KCPE in 2016. In the year 2017, 55% of 1175 boys and 51% of 1151 girls did not complete primary education. In the year 2018, though there was a slight improvement in completion, 41% of 1201 boys and 54% of 1178 girls registered non-completion. In year 2019, the proportion of pupils who registered in class one but failed to sit for KCPE was 44% out of 1154 boys and 42% out of 1101 girls.

Students' failure to complete school poses a considerable challenge not only to the individual dropout but also to the Kenyan society at large. Individuals who leave school early before sitting for KCPE face a number of prominent negative consequences such as economic deprived future due to their poor job prospects, are more likely to make a lesser income compared to their more educated peers on average and tend to have more criminal behaviors. The country suffers a huge loss of investment as a result of students leaving school early. This is because over hundreds millions of government expenditure on education, the largest share is spent on primary sub-sector. Therefore, understanding variables influencing students' educational outcomes, specifically with respect to intention to complete school and increasing completion rate is a crucial factor to educational stakeholders.

Research's State of the Art

Several studies argues that academic engagement is a crucial factor on various educational related variables , such as students' dropout , academic performance, and school completion intentions (Pilotti et al., 2017; Rouse, 2019; Mat et al., 2020). For instance, Mastrorilli (2016) emphasize on developing cognitive academic engagement practices such as persistence and mental effort to enhance learners' commitment to school completion and reduce dropout. Gatsi (2018) link dropout process to personal factors, although the specific factors were not identified. Pilotti et al. (2017) observation show that academic engagement significantly influenced the time spent on learning tasks, subsequently affecting task completion rates.

Additionally, these studies show that academic engagement significantly contributes to high academic achievement (Masila, 2022; Wara & Odongo, 2018a), stressing the value of mental involvement in influencing students' academic-related outcomes. Consequently, existing literature stresses the need to use students' centred strategies to enhance academic engagement (Onzi & Mugenyi, 2023). Few researchers in Kenya, have documented low primary school completion rates which is linked to factors external to the individual students such economic status of the parents,

school-related variables, cultural as well as social factors with little discussion on students personal factors such as academic engagement (Ayub, 2018).

Gap Study & Objective

Existing literature imply that cognitive academic engagement should be considered as a key factor in enhancing students' intention to complete school. However, it was worth noting that university and high school learners older than current study's sample were involved. This could have introduced biases in the results, given that academic engagement can be largely influenced by age. Also, these studies investigated on overall academic engagement and its connection to school completion intentions but did not shed light on specific dimensions of academic engagement. Therefore, to get more informative results the present study investigated the relationship between cognitive academic engagement and school completion intention among the upper-class pupils in primary schools. In addition, these studies concentrated on different location hence the need to establish the relationship between cognitive academic engagement and school completion intention in current context. In Kenya, few descriptive studies have concentrated on the factors contributing to low completion rates, however, it is worthy noting the existing gap in research regarding the correlates of school completion intentions. Hence, this study objetcives were: 1) to determine the relationship between cognitive academic engagement and school completion intention; 2) to establish the prediction equation of cognitive academic engagement on school completion intention.

METHOD

Type and Design

This study used correlational research design, which in accordance Mat et al. (2020) allowed the researcher to make measurement of study relevant variables for each respondent and assess the relationship between the variables. In this study, various sampling techniques were used to arrive at a representative sample: purposive sampling to choose the County and the specific classes- six, seven and eight, and simple random sampling to select schools and pupils from these selected schools to participate in the study.

Data and Data Sources

Data was collected from 295 class six, seven and eight pupils in Tharaka North Sub County. A questionnaire was used as the main tool to collect data. The questionnaire had three parts, including demographic data section, Student Engagement in school questionnaire (SESQ), and School completion Intention Questionnaire. Demographic data section: Respondents were asked to disclose their personal data regarding gender, age and the class level. Student engagement in school questionnaire (SESQ): Items to measure pupils' academic engagement were adapted from SESQ developed by (Hart & Jimerson, 2011). Only the subscale of student engagement in schools consisting of 33 items rated on a 5-point-likert (1 (never) to 5 (Always) was used, with low and high score signaling low and high academic engagement respectively. The scale was chosen due to earlier studies exhibiting acceptable alpha ranging from alpha 60 to 90 (Mastrorilli, 2016; Truta et al., 2018; Hart & Jimerson, 2011).

School completion intention questionnaire (SCIQ)**:** Pupil's intention to complete school was measured using eight items; six items adapted from the Graduation Intention Survey questionnaire (Sutter & Paulson 2017), one item from (O'Connel & Freeney, 2011) study, and the last item from (Truta et al., 2018) research work. The items were then modified to suite the context of the study. The respondents rated these items on a scale ranging from *1* representing *very strongly disagree* to 7 *very strongly agree,* with high score indicating high intention to complete school.

Data Collection Technique

Content validity of the scales was ascertained through expert guidance provided by university supervisors. Their valuable suggestions and comments were used in enhancing the clarity of the questionnaires' items. To ascertain the reliability of the scales, the researcher used internal consistency specifically, alpha coefficients. The results of pilot study yielded acceptable reliability coefficient alphas: α = 0.82 for SESQ and α = 0.67 for SCIQ, which indicated that the scales were adequately suitable for use in this study.

Before collecting data, the researcher acquired necessary approvals: clearance from Graduate School of Kenyatta University, research permit from National Commission of Science, Technology and Innovation (NACOSTI) and consent from both school principals and the parents/ guardians of the pupils participating in the study. On the actual data collection day, the researcher thoroughly explained the goal of the research before administering questionnaires to the pupils to fill at breaktime during normal school days. They took roughly 30-35 minutes to fill.

Data Analysis

The data was then coded and cleaned for statistical analysis. Descriptive statistical procedures were used to describe and summarize the collected data. Inferential statistical procedures were utilized to test the study hypotheses at an alpha of 0.5.

RESULTS

Respondents' Demographic Characteristics

Respondents were required to provide data regarding their gender, class and age. The outcomes are as captured in Table 1. It is apparent from Table 1, that slightly above half of the respondents (N = 148) translating to 51.9% were girls while boys (N = 137) accounted for 48.1%. In terms of age, boys had a range of 11-19 years while girls had 11-17 years. The mean age for boys was higher 14.01 (SD = 1.51) than that of girls which was 13.14 (SD = 1.23).

Table 1. Demographic Characteristics

Variable	Categories			Age					
		f	%	Range	Mean	SD	Sk	kr	Difference test
Gender	Boy	137	48.1	11-19	14.01	1.51	0.45	0.18	t(283)=5.37, p
	Girl	148	51.9	11-17	13.14	1.23	0.44	0.07	< .01, 95% CI [0.55, 1.20]
Class	6	125	43.9	11-16	12.90	1.30	0.90	0.53	F (2, 282) =
	7	83	29.1	11-19	13.60	1.26	1.18	3.21	42.76, p <.01.
	8	77	27.0	13-17	14.59	1.20	0.41	0.71	*M8 > M7 > M6.
Overall	-	285	100	11-19	13.56	1.44	0.56	0.14	

Note. F = Frequency; SD = Standard deviation; sk = skeweness; kr = kurtosis; *Post hoc comparisons using Scheffe test.

Anova test revealed that the age difference by gender was statistically significant (t (283) = 5.37, p < 0.01) with a confidence interval of 95% Cl [0.55,1.20]. Further, as seen in Table 1 more respondents came from class six (N = 148), followed by those in class seven (N = 83) and the least were drawn from class eight (N = 77). The mean age for class six was 12.90 (SD = 1.30), class seven was 13.60 (SD = 13.60) and class eight was 14.59 (SD = 1.20). Post hoc comparison using Scheffe test revealed that mean age for class 8 was statistically larger than class seven which was statistically larger than the class six (F (2, 282) = 42.76, P <.01).

Description of Cognitive Academic Engagement and School Completion Intention

Descriptive analysis was conducted on cognitive academic engagement and school completion intention and the findings are as given out in Table 2.

Table 2. Descriptive statistics for Cognitive Academic Engagement and School Completion Intention

	Range	*M*	SD	*Sk*	*Kr*
Cognitive engagement	31-55	45.95	4.92	-0.70	0.37
School completion intention	26-56	44.93	6.21	-0.20	-0.24

Note. M= Mean; *SD* = Standard deviation; sk = skeweness; kr = kurtosis

As it can be seen from Table 2, the mean for cognitive academic engagement scores was 45.95 (*SD* = 4.92) and a range of 31-55. Also, cognitive academic engagement scores had a skewness of -0.70 and kurtosis of 0.37. These values were below one indicating that they were normally distributed as specified by (Griffin & Steinbrecher 2013).

As the Table 1, illustrates, school completion intention scores had a range of 26-56 and a mean score of 44.93 (*SD* = 6.21). Just like the cognitive academic engagement the scores were normally distributed as indicated by skewness of -0.20 and a kurtosis of -0.24.

Relationship Between Cognitive Academic Engagement and School Completion Intention

To test this relationship, the following null hypothesis was tested:

H_{01}: There is no relationship between cognitive academic engagement and school completion intention of pupils in upper classes in primary schools.

This hypothesis was tested using bivariate correlation analysis, specifically, the Pearson Product Moment Correlation (PPMC) and the output is given in Table 3.

Table 3. Correlation Between Cognitive Academic Engagement and School Completion Intention

	1	2
1. Cognitive academic engagement	-	
2. School completion intention	.50[**]	-

Note. *N* = 285.

**$p < .01$

According to data presented in Table 3, there is a significant positive moderate correlation between cognitive academic engagement and school completion intention of pupils in upper classes (*r* (283) = .50, *p* < .01). Therefore, null hypothesis was rejected and a conclusion made that cognitive academic engagement is associated with school completion intention. The results indicate that pupils with high cognitive academic engagement have high intention to complete school. Thus, strengthening pupils' cognitive academic engagement will raise their intention to complete school.

Prediction of School Completion Intention Based on Cognitive Academic Engagement

To test the prediction of school completion intention based on cognitive academic engagement, a regression analysis was used.

The null hypothesis tested was:

H_{02}: There is no significant prediction of cognitive academic engagement on school completion intention.

The regression model summary results are as displayed in Table 4.

Table 4. Model summary

Model	*R*	R^2	Adjusted R^2	SEE
1	.496[a]	.246	.243	5.41

Note. *N* = 285; SEE = Standard error of the estimate

The results presented in Table 4, indicate a moderate positive correlation (R = .49) between school completion intention and cognitive academic engagement. The R^2 value shows that cognitive academic cognitive account for only 24.6% of the variability in school completion intention. To establish the specific contribution of cognitive academic engagement, analysis of variance test was conducted and the regression coefficients are given in Table 5.

Table 5. Regression Coefficients for Cognitive Academic Engagement Predicting School Completion Intention

		B	SE	B	t	p
1	(Constant)	16.14	3.01		5.36	.00
	Cognitive academic engagement	.63	.07	.50	9.60	.00

Note. N = 285.
a. Dependent Variable: School completion intention

It is evident from Table 5 that cognitive academic engagement had a statistically significant contribution on school completion intention (B = .63, t = 9.60, p = .00). Further, Anova was used to test whether the regression model was significant, and the results of the prediction model are as captured in Table 6.

Table 6. Anova Table for Prediction Model

Model		SS	df	MS	F	P
1	Regression	2694.992	1	2694.992	92.250	.000[b]
	Residual	8267.604	283	29.214		
	Total	10962.596	284			

Note. N = 285.
a. Dependent Variable: School completion intention
b. Predictors: (Constant), Cognitive academic engagement

Information in Table 6 indicates a statistically significant regression equation connecting school completion intention, with cognitive academic engagement (F (1, 283) = 92.25, P = .00), with an R^2 value of .24. This finding provides a strong ground to reject the null hypothesis and conclude that cognitive academic engagement significantly predicts school completion intention.

DISCUSSIONS

The results revealed that cognitive academic engagement was significantly and positively related to school completion intention of pupils in upper classes. The present results are in agreement with Mastrorilli (2016) who found that mental effort a dimension of cognitive engagement significantly predicted school dropout intention among high school students. From these findings, an observation can be made that developing positive cognitive academic engagement will reduce school dropout intention of both secondary school students and pupils in upper classes. The current results seem to match those of Pilotti et al. (2017) who reported direct link between students' cognitive engagement and the depth of discussion prompts in an online class. Students' cognitive engagement influenced the extent and the length of interaction with the learning task and whether or not they completed the task. Based on these results cognitive academic engagement is assumed to influence students' performance in an online class. In respect to the present study, cognitive academic engagement is linked to high pupils' intention to complete school.

Consistent with the present results, Marôco et al. (2020) conducted a study exploring the prediction of dropout intentions based on students' engagement levels. They found a noteworthy

relationship, and student engagement emerged a significant predictive variable for dropout intention. These findings suggest the importance of considering student engagement as a key factor in enhancing students' commitment to complete their studies regardless of their age. The current study, however, was specific in studying the link between various dimensions of the academic engagement and school completion intentions. It found a close connection between cognitive academic engagement and school completion intention among pupils in Kenyan schools.

The current findings match those reported by Masila (2022) who conducted a study in Kenya to investigate the connection between cognitive engagement and academic achievement among Form Three students. The study found a significant positive correlation between cognitive academic engagement and academic achievement. This outcome emphasized the importance of mental involvement on enhancing students' academic outcomes. In harmony to the present results, Gatsi (2018) study revealed that the learners drop out of school due to personal factors. While Gatsi did not specify which personal factors, the current results are very crucial as they link cognitive academic engagement as one of the personal attributes connected to pupils' intention to leave school early.

This study also revealed a statistically significant prediction of school completion intention from cognitive academic engagement. These results disagree with Truta et al. (2018) study that revealed that cognitive academic engagement was not a significant predictor of intention to drop out school early. However, this explanation could be due to different research instruments used to gather the data and the way the construct was operationalized. However, this current finding matches that of Robinson (2016) who found that both cognitive and emotional academic engagement were strong predictors of the intention to drop out of school. These results imply that increment in aspects of academic engagement is associated with increased pupils' intention to complete school.

This study is also supported by Guajardo-Leal et al. (2019) results that indicated a significant prediction of students' course completion from students' engagement. These researchers measured students' cognitive academic engagement in terms of strategies employed for course learning activities. A closer look at these results indicate that the more students are engaged with school experience the higher the chances that they will have high intention to complete school. The current findings are backed up by Masila (2022) who found out that cognitive academic engagement was moderate predictors, however, this time not of school completion intention but academic achievement. Similarly, Brallier (2020) who explored the prediction of academic achievement from student's engagement among college students found cognitive academic engagement to significantly predict academic grades. Both the earlier and current results confirm that academic engagement is very important for better academic grade as well as increasing pupils' intention to complete school.

CONCLUSION

This study revealed that high cognitive academic engagement was associated with high school completion intention. It also demonstrated that cognitive academic engagement was a significant predictor, and accounted for 24.60% variance in school completion intention. Therefore, the study's conclusion suggests that classroom-based interventions such as training pupils on academic goal setting, giving timely feedback, encouraging pupils' autonomy and scaffolding instruction should be put in place to encourage pupils' mental investments in learning activities and subsequently raise their intention to complete school. Adittionally, designing relevant and meaningful learning tasks to engage them could reduce the intention of pupils leaving school early. However, it is important to note the study's limitation which include its correlational nature that hinder establishing causation between pupil's cognitive academic engagement and their school completion intention. Morevoer, the study solely utilized quantitative data which hinders understanding learner-based needs related to cognitive academic engagement which could be of great help in increasing their participation, affection towards learning as well as their mental investments. Therefore, the study recommends the use of causal

effects design and mixed-methods approach to data collection to produce rich findings relating pupils' academic engagement to school completion intention.

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