Achievement goal orientations as predictors of academic achievement among secondary school students in embu county, kenya

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Abstract

Background: There is a substantive body of evidence that achievement goal orientations influence academic outcomes. However, students in developing countries and non-college populations are underrepresented in the existing goal orientation research. Involving students from new contexts and in lower levels of education may enhance generalizability of the construct and add to the pool of knowledge in this area.

Methods: The study involved 385 students selected through proportionate stratified random sampling from 10 public secondary schools in Embu County. Data were collected through an adapted Achievement Goal Orientation Questionnaire. Academic achievement was inferred from students' examination grades.

Results: A significant positive correlation was found between approach achievement goal orientation and academic achievement (r(383) = .20, p <.05).A significant negative correlation was found between avoidance achievement goal orientation and academic achievement (r(383) = -.15, p < .05). The equation for predicting academic achievement from achievement goal orientation was significant (F (2, 382) = 13.49, p < .05). Approach achievement goal orientation had a higher and positive predictive value while avoidance achievement goal orientation had negative predictive value.

Conclusions: We urge parents and teachers to enhance approach achievement goal orientation among learners.

Keywords: Achievement Goal Orientations. Academic Achievement. Secondary School.

INTRODUCTION

Worldwide, examination grades are viewed as indicators of students' learning especially in the cognitive domain. In fact, most educational systems rely on test-score performance to judge individual differences in academic and labour-market skills (Hanushek & Peterson, 2014; Hanushek, Ruhose, & Woessman, 2016). Students who attain high grades in examinations generally have more chances to the best positions in society and consequently higher income, job security, positive self-esteem, and high regard by others. In contrast, those with low academic grades face the threat of limited training and employment opportunities.

The uncertainty and vulnerability to failure occasioned by school examination results are suspected to be linked to students' goals in school (Walvoord & Anderson, 2010; Was, 2006).Such goals are a major concern for the achievement goal orientation theory. According to Elliot, Murayama, and Pekrun, (2011), achievement goal orientations are basically the reasons that students have for engaging in academic tasks, and for their performance. According to the theory, achievement goal orientations focus students' attention and behavior to either seeking competence or avoiding incompetence in school tasks (Elliot, Eder, & Harmon-Jones, 2013). Achievement goal theorists seem to agree that seeking competence in school tasks constitutes an approach achievement goal orientation while avoiding incompetence constitutes an avoidance achievement goal orientation (Elliot et al., 2011; Kaplan & Flum, 2010).

Typically, research on achievement goal orientations has sought to address the 'what', 'why', and 'how' of students' academic goals. Studies addressing the 'what' have addressed the conceptual definition of the goals, their contents, and types (Elliot, Murayama, & Pekrun, 2011). The focus on the 'why' has either sought to establish the impact of the achievement goal orientation on academic out-

comes or the mechanisms behind the impact of achievement goal orientations(Grant & Dweck, 2003;Hejazi, Lavasani, Amani, & Was, 2012;Ikeda, Castel, & Murayama, 2015; Murayama & Elliot, 2011; Van Yperen, Elliot, & Anseel, 2009; Vansteenkiste, Lens, Elliot, Soenens, & Mouratidis, 2014; Was, 2006). Research focusing on 'how' of achievement goal orientations has focused on their development, differences in their influence, and the relations between achievement goal orientation and academic outcomes. Such studies have manly used academic achievement as a key indicator of competence among learners (Chen & Wong, 2014; Dekker et al., 2013; Ebner, Freund, & Baltes, 2006; Eder, Elliot, & Harmon-Jones, 2013;Johnson & Sinatra, 2014; Pulkka & Niemivirta, 2013; Van Yperen, Blaga, & Postmes, 2015; Van Yperen, Blaga, & Postmes, 2014).

We must observe that some studies cited above addressed either the three concerns together or a combination of these concerns with other interests. The cumulative picture from these studies is that achievement goal orientations act as independent markers of motivation that may explain students' behaviour, sex differences, and achievement in school. Against this background, we investigated how approach and avoidance achievement goal orientations predict academic achievement. In doing so, we sought to heed the call by Elliot and colleagues (Elliot et al., 2011; Elliot et al., 2013) for more research specifically examining how different types of achievement goal orientations affect younger students and those from non-western cultural contexts. Consonant with this recommendation, the study was conducted among secondary school students in Embu County of Kenya.

We begin by describing the relationship between achievement goal orientation and academic achievement as presented in existing studies. In testing the 3x2 achievement goal orientation model, Elliot et al. (2011) involved 319 (206 male; 113 female) undergraduate students in the USA. Achievement goal orientation was correlated with academic achievement as measured through a performance index based on participants' scores on three exams. Their study found academic achievement to relate significantly and positively with approach achievement goals; and negatively with avoidance achievement goals. Regression results indicated that only performance-approach goal orientation positively predicted exam performance. Notably, all avoidance achievement goal orientations either negatively predicted exam performance or had insignificant negative correlation with exam performance. However, the 3 x 2 model has mainly been studied among college students. As a step towards cross-pollinating the theory with findings obtained from other cultures, this study evaluated how achievement goal orientation predicted academic achievement among secondary school students in Kenya.

Abd-El-Fattah and Patrick (2011)also explored the relationship between achievement goal orientation and academic achievement among 503 Australian secondary school students aged 14-16 years. In the study, achievement goal orientations were measured using the achievement goal orientation questionnaire (AGQ) while academic achievement was inferred from scores obtained by students in three subjects in mid-term exams. The results revealed significant positive correlations between approach goals and academic achievement. On the other hand, academic achievement correlated negatively with avoidance achievement goal orientation. Recently, Van Yperen, Blaga, and Postmes, (2014)conducted a meta-analysis of self-reported achievement goal orientation and non-self-report performance in work, sports, and education achievement domains. Their results generally suggest that in education, approach goals correlate positively with performance attainment while avoidance goals correlate negatively with performance attainment. The authors recommended more cross-cultural research to clarify the reported trend.

The motivation for this study was twofold. First, we believe that involving students in developing countries in research on achievement goal orientation may enrich the existing motivational theories. It is apparent that students in developing countries are underrepresented in the existing studies. We contend that the educational experiences of students in developing countries are likely to contrast those of their counterparts in developed countries. For example, the highly competitive nature of most educational systems in Africa may present conditions of uncertainty about future opportunities. Such uncertainty may influence students' views of their own ability to succeed and their reasons for being in school. According to Lieberman and Remedios(2007), academic pressure undermines interest and enjoyment thus focusing students' attention to failure avoidance. Second, most of the available studies on achievement goal orientation have been conducted among college students. The achievement goal orientation of non-college student populations may differ significantly from those of college students. We are convinced that involving students in primary and secondary school levels in research on achievement goal orientation may enrich the additive view of the construct of motivation and add to the pool of knowledge in this area. This study was based on the 3 x 2 model of achievement goal orientation (Elliot et al., 2011). The model conceptualizes achievement goal orientations as a set of beliefs that reflect the reasons why a person approaches and engages in academic and learning tasks. According to Elliot et al. (2011), achievement goals and their underlying reasons form a goal complex that represents two distinct pathways through which the need for achievement and fear of failure relate to learning outcomes. In this model, six types of goals are measured using the 3 x 2 Achievement Goal Questionnaires (AGQ). The goals are defined based on each of the three standards used in competence evaluation: task, self, and other. They are also defined based on approach versus avoidance distinction. The goals are juxtaposed as: task-approach versus task-avoidance; self-approach versus self-avoidance; and other-approach versus other-avoidance (Elliot et al., 2011). To suit the current study, all approach-oriented and avoidance-oriented goals in the AGQ were collapsed into two distinct types: approach achievement goal orientation- the focus on attaining competence and avoidance achievement goal orientation- the focus on avoiding incompetence.

The model proposes that the type of goals that a student adopts offers a certain orientation to learning and achievement which is instrumental in motivating learning behaviours. Approach goals have been described as having activating characteristics like positive affect and directing focus to a task. Approach goals also have a facilitative effect on students' deeper processing of information and conceptual

change (Johnson & Sinatra, 2014). According to Elliot, Eder, and Harmon-Jones (2013), avoidance goals are perceived as having de-activating characteristics like negative moods, and distraction from a task. An avoidance orientation focuses a student's attention on not being the worst or on avoiding losing ability. The orientation leads students to be cautious and resistant to engaging fully in the learning task. It lowers the speed or degree to which students understand the learning content hence the lower academic achievement.

In relation to the current study, the model focuses on both inter-person and intra-person interpretation of academic ability. It suggests that approach goals are more adaptive than avoidance goals in achievement set-ups. In addition, the model yields reliable data when used to examine links between achievement goals and other variables pertinent to general achievement and motivation. Therefore, the model was deemed suitable for investigating how achievement goal orientation and academic identity status predicted academic achievement as conceptualized in this study. The model also significantly predicts students' academic achievement and behavioural patterns relevant to identity development (Elliot et al., 2011).

The study was framed upon the following hypotheses:

a. There is a significant difference between the academic achievement of students in approach achievement goal orientation and those with avoidance achievement goal orientation.

b. Achievement goal orientation has a significant predictive value of academic achievement.

METHODOLOGY

Research Design

The study used an explanatory correlational design. The design was appropriate for this study since focus was on whether students' achievement goal orientations predicted their academic achievement. The predictor variable in this study, achievement goal orientation, had not been the focus of much research among secondary school students in Kenya.

Participants

In this study, 385 students were selected through proportionate stratified random sampling from 10 public secondary schools in Mbeere South Sub-county of Embu County, Kenya. One hundred and ninety six (50.26%) were boys while 189 (48.46%) were girls. The participants were aged 16 to 23 years (M = 16.65, SD=1.31) and they were all form three students. Majority of the participants (78 %) were aged were aged between 15 and 17 years. Form three students were selected for the study for two reasons: First, in Kenya, form three students are in middle and late adolescence. These students had been in secondary school for at least three years and had already selected subjects for the KCSE examination. The students were likely to have definite academic values and to be pursuing specific achievement goals. In addition, using secondary school students in Kenya helped address a gap in literature.

Data Collection Tools

Achievement Goal orientation Questionnaire (AGQ)

In this study, achievement goal orientation were operationalized through items adapted from the 3 x 2 achievement goal orientation questionnaire (AGQ) (Elliot et al., 2011). The 3x2 AGQ is an-18 item instrument that measures six types of goal orientations: task-approach goals; task-avoidance goals; self-approach goals; self-avoidance goals; other-approach goals; and other-avoidance goals.

Using data from a pilot study, the adapted AGQ was further refined to make it more appropriate for the study. The pilot study involved a random sample of 40 form three students (20 boys, 20 girls) from a purposively selected public mixed day secondary school in Mbeere South Sub County. The school was not involved in the main study. The pilot study data were analyzed to ascertain clarity of the items, adequacy of the allocated time and the internal consistency of the instruments. To enhance content validity of the AGQ, the opinions of the class teachers and the respondents about the tools as well as data collection procedures were sought. Their feedback helped the researchers to modify any ambiguous, vague, or unreliable items. Participants responded to the 18 items on the adapted AGQ using a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The subscale scores ranged from 9 to 45. The AGQ items yielded good internal consistency estimates (approach achievement goal orientation α= .75; approach achievement goal orientation α= .83) as presented in Table 1. Elliot et al. (2011) reported that the reliability coefficients of the achievement goal orientation questionnaire ranged from .77 to .91 and therefore the obtained coefficients were considered high enough to allow the adoption of the scale in the study.

Table 1

Descriptive Statistics and Reliability Coefficients for Achievement Goal Orientation Subscales

AGO Sub-scale	n	Items	Range	M	SD	Sk	Kur	α
Approach	269	9	11-45	37.45	6.11	-0.77	0.55	.79
Avoidance	116	9	9- 45	30.40	6.43	-0.25	0.41	.83

Note. N= 385. AGO= achievement goal orientation; Sk= Skewness; Kur= Kurtosis.

Each participant's academic achievement was inferred from school achievement records. Using a pro forma schedule designed by the researcher, the students' total marks in form three examinations for mid and end of term one in the year 2015 were obtained. An average score on the two examinations was then calculated. The scores were then transformed into t- scores to make them comparable among students in different schools. This conceptualization of academic achievement using examination marks given by teachers was consistent with that done in other studies among secondary school students in Kenya (Mutweleli, 2014; Wawire, 2010).

Procedure

Before data collection, this study was authorized by the Kenyan National Commission for Science Technology and Innovation (NACOSTI) vide permit number NACST//14/5285/4058.The participants gave their consent for participation in this study after being given a clear explanation of its purpose. The questionnaires were administered to the students in a classroom environment by the researchers after assuring the participants of confidentiality and anonymity regarding the collected information.

The researcher obtained research clearance from Kenyatta University's Graduate School. Research permit was also sought from the National Commission for Science, Technology, and Innovation (NACOSTI). Afterwards, the researcher booked appointments with the education and administration officials at the county and the sub-county levels to obtain their clearance. The researcher also sought appointments with the principal and form three class teachers in each sampled school. During these appointments, the researcher discussed the purpose, benefits of the study and agreed on the best day, time, and venues for data collection.

Data Analysis

The questionnaire data were scored and coded for statistical analysis using SPSS. Initially, 390 students had been selected for the study. However, five questionnaires had cases of missing data or discernible response set bias. These were dropped and the final sample was 385. In this study, hypotheses were tested at $p = .05$. An exploratory factor (principal component) analysis established the construct validity for the AGQ. To determine the relationship between achievement goal orientation and academic achievement, a two-tailed Pearson's Product Moment Correlation Coefficient was used. To evaluate whether the two types of achievement goal orientation predicted students' academic achievement, a standard multiple regression analysis was computed.

Result

Descriptive Statistics of the Measures

As presented in Table 1, the mean scores for the approach and avoidance subscales of achievement goal orientation were 37.45 (SD=6.11) and 30.40 (SD=6.43) respectively. The coefficients of skewness for both subscales were negative implying that majority of the participants rated themselves highly on the subscales. The obtained Skewness and Kurtosis values for both subscales were below three implying that the scores met the criteria for a normal distribution (Schmider, Ziegler, Danay, Beyer, & Bühner, 2010). Taken together, the measures of distribution shape showed that the achievement goal orientation data were sufficiently normally distributed.

The descriptive statistics for each AGQ item in the actual study are show in Table 2.In this scale, the least item mean score was 2.17 for item 4 on the avoidance achievement goal orientation sub-scale (I work hard, because I fear performing worse than my classmates do). The highest item mean score was 4.62 for item 3 on the approach achievement goal orientation sub-scale (My goal is to perform better in form three exams than I have done in other classes). The construct validity for the AGQ was ascertained using an exploratory factor (principal component) analysis. This analysis resulted in a two-factor solution for the 18-item measure. Item loadings ranged from .46 to .76. According to Elliot et al. (2011) valid 3x2 AGQ items should have factor loadings ranging from .50 to .95. Therefore, all items on this measure met the criteria for retention. The total variance explained for this solution was 36.64 %. Factor 1, 'Approach achievement goal orientation', accounted for 20.46% of the total item variance, while Factor 2, 'Avoidance achievement goal orientation', accounted for 16.18% of the total item variance. Indices obtained from the exploratory factor analysis (KMO=.74, Bartlett's Test of Sphericity= 1940.94, df= 153, p<.01) indicated that the data was suitable for factor analysis. Thus each of the items made considerable and significant contribution in measuring achievement goal orientation. Items retained in the adapted AGQ were subsequently utilized in analyses pertinent to answering the research hypotheses and questions.

Table 2

Descriptive Statistics and Factor Structure Coefficients for Achievement Goal Orientation Questionnaire Items

Item	M	SD	Sk	Kur	Est.	Loading		
APAGO1	4.41	0.94	-1.89	3.26	.31	.56	-.11	
APAGO2	4.11	1.20	-1.33	0.64	.24	.49	-.10	
APAGO3	4.62	0.82	-2.62	6.90	.35	.59	-.08	
APAGO4	4.08	1.12	-1.09	0.13	.47	.69	-.04	
APAGO5	3.78	1.27	-0.69	-0.88	.36		.60	-.01

APAGO6	3.90	1.22	-1.03	0.02	.50	.70	.06
APAGO7	3.80	1.32	-0.74	-0.81	.45	.66	.09
APAGO8	4.51	0.91	-2.29	5.12	.37	.61	-.06
APAGO9	4.23	1.06	-1.70	2.35	.32	.57	.04
AVAGO1	3.72	1.36	-0.86	-0.60	.45	.44	.51
AVAGO2	4.27	1.16	-1.74	2.00	.33	-.03	.47
AVAGO3	4.35	1.08	-1.88	2.76	.33	.30	.49
AVAGO4	2.17	1.28	0.98	-0.20	.33	-.03	.57
AVAGO5	2.89	1.30	0.10	-1.22	.45	.22	.64
AVAGO6	3.10	1.28	-0.07	-1.18	.42	.22	.61
AVAGO7	3.76	1.26	-0.73	-0.63	.38	.02	.62
AVAG08	3.56	1.28	-0.57	-0.82	.29	-.10	.53
AVAGO9	2.58	1.44	0.44	-1.24	.23	.31	.48
Explained Variance					20.46	16.18	
Total variance explained				36.34			

Note. N=385. APAGO = Approach achievement goal orientation; AVAGO = Avoidance achievement goal orientation; Sk= skewness; Kur= kurtosis; Est.= Estimate.

Categorization of participants into the Achievement goal orientation

To facilitate hypothesis testing, it was necessary to categorize participants into either approach or avoidance achievement goal orientation. The basic criterion was that a participant was categorized as having the achievement goal orientation for the subscale with the higher total score. Those participants whose total score in the approach achievement goal orientation subscale was higher than their total score in the avoidance goal orientation subscale were coded as 1; those whose total score in the avoidance achievement goal orientation sub scale was higher than their total score in the approach achievement goal orientation sub scale were coded as 0. Any participant with equal approach and avoidance goal scores was excluded from further analysis. The classifications resulted in 269 approach-oriented students and 116 avoidance-oriented students (see Table 1).

In order to determine the relationship between achievement goal orientation and academic achievement, a bivariate correlation analysis was conducted using a two-tailed Pearson's Product Moment Correlation Coefficient. The results are presented in Table 3.

Table 3

Correlations between Achievement Goal Orientation and Academic Achievement

AGO	n	M	SD	SE	r[a]	
1	Approach	269	51.56	9.68	.59	.20**
2	Avoidance	116	46.52	9.87	.90	-.15**

Note. AGO= achievement goal orientation, M= mean, SD = Standard deviation, SE = standard error.

A Correlation with academic achievement

** Correlation is significant at p=.01 (2-tailed).

As presented in Table 3, the mean academic achievement score for participants with approach achievement goal orientation (n=269) was 51.56 (SD= 9.68) while that for participants with avoidance achievement goal orientation (n=116) was 46.52 (SD= 9.87). A statistically significant weak positive correlation was found between approach achievement goal orientation and academic achievement (r(383)=.20, p<.05). In addition, there was a statistically significant weak negative correlation between avoidance achievement goal orientation and academic achievement (r(383)= -.15, p< .05). The correlational results supported the conclusion that both approach and avoidance achievement goal orientations were significantly related to academic achievement.

In order to compare the academic achievement scores between the two types of achievement goal orientations, an independent samples t-test was conducted.The data was evaluated to check whether it violated the assumptions of independent samples t-test. The measures of distribution shape indicated that students' academic achievement scores (skewness = - 0.36; kurtosis = - 0.42) were sufficiently normally distributed as per the criteria outlined by (Schmider et al., 2010). The achievement goal orientation scores were also sufficiently normally distributed for the purposes of conducting a t-test (see Table 2). Additionally, the assumption of homogeneity of variances was tested and satisfied through a Levene'sF test (F(383)=.04, p=.85). The independent samples t-test results indicated that there was a significant difference in the mean academic achievement scores (t(383)=4.69,p<.001) for the approach achievement goal orientation (M= 51.56, SD=9.68) and avoidance achievement goal orientation (M=46.52, SD=9.87). The magnitude of the difference in the means was 5.03 with a 95% confidence interval of 2.92 to 7.15.

To evaluate whether the two types of achievement goal orientation predicted students' academic achievement, a standard multiple regression analysis was computed. As presented in Table 4, the regression model for predicting academic achievement using the two types of achievement goal orientation explains six percent of variance of the model (Adjusted R^2=.06). A significant regression equation was found (F(2, 382)=13.49, p<.01).

Table 4

Predicting Academic Achievement from Achievement Goal Orientation

Predictors	Coefficients			t	sig	95%CI	
	ß	SE	Std. ß			LL	UL
Constant	47.53	3.43		13.84	.00	40.78	54.28
APAGO	0.21	0.05	.21	4.24	.00	0.11	0.20
AVAGO	-0.16	0.05	-.16	-3.24	.00	-0.26	-0.06
Model[a]: R =.26, R2=.07, Adj. R2=.06, SE=9.69, F(2,382)=13.49,p<.001							

Note. N=385. SE = standard error, APAGO= Approach achievement goal orientation; AVAGO= Avoidance achievement goal orientation, LL = Lower limit, UL = upper limit.
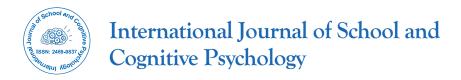
aRegression model summary.

The resultant equation for predicting academic achievement from achievement goal orientation was: "ŷ= 47.53 - .16(AVAGO) + .21(APAGO) ." Where: ŷ= Predicted academic achievement; AVAGO= Avoidance achievement goal orientation; APAGO= Approach achievement goal orientation.

Both approach achievement goal orientation (ß=.21, t=4.24, p<.001) and avoidance achievement goal orientation (ß=-.16, t=-3.24, p<.001) were significant predictors of academic achievement. The obtained beta values indicated that while approach goal orientation had a higher and positive predictive value on academic achievement, avoidance achievement goal orientation had a lower and inverse predictive value on academic achievement. The prediction equation suggested that students' academic achievement increased by 0.21 points for every standard deviation increase of approach achievement goal orientation and decreased by 0.16 points for every standard deviation increase of avoidance achievement goal orientation. The results supported the conclusion that achievement goal orientation has significant predictive value on academic achievement.

DISCUSSION

This study sought to find out whether achievement goal orientation could predict academic achievement among high school students in Embu County Kenya. The findings suggested that both approach and avoidance achievement goal orientations had significant but weak correlation with academic achievement. However, the evidence for this correlation was different for the two types of achievement goal orientation. Whereas approach achievement goal orientation correlated positively with academic achievement, avoidance achievement goal orientation correlated negatively. There were significant differences in the mean academic achievement scores of the two types of achievement goal orientation. Specifically, participants with approach achievement goal orientation had higher academic achievement scores than those with avoidance goal orientation.

Of importance to educators is the fact that the study findings were consistent with the premise held in earlier studies that approach goals are more beneficial than avoidance goals in achievement set-ups. For example, in a meta-analysis of self-reported achievement goal orientations in various achievement domains, Van Ypren et al. (2014) reported that approach goals correlated positively with non-self-reported performance measures while avoidance achievement goals correlated negatively. Similarly, Hejazi et al. (2012) found that among first year Iranian secondary school students, approach achievement goals correlated significantly and positively with the academic achievement, while avoidance orientation correlated significantly and negatively. Similar findings have also been reported by Abd-El-Fattah and Pat-

rick (2011) among Australian secondary school students.

An interesting finding of this study was that the magnitude of the correlation to academic achievement for both approach and avoidance achievement goal orientation was almost the same. This was despite the significant difference in their mean scores with approach achievement goal orientation having a higher mean. This contrasts with the findings by Hejazi et al. (2012) that mastery approach goal orientation had a bigger correlation with academic achievement compared to mastery avoidance goal orientation. It should be noted that in the current study, the different forms of avoidance achievement goal orientation were collapsed into approach and avoidance dimensions and this may have introduced the reported difference.

The finding that approach-oriented students had higher academic achievement scores than their avoidance-oriented counterparts may be explained in terms of differences in the effects of the two achievement goal orientations. The notions of approach and avoidance suggest that individuals are motivated to optimize satisfaction by approaching success or avoiding failure that may bring about negative outcomes. Approach goals have been described as having activating characteristics like positive affect and directing focus to a task. In a study on the effect of approach and avoidance goal orientations on students' conceptual change, Johnson and Sinatra, (2014) found approach goals to have a facilitative effect on undergraduate students' deeper processing of information and conceptual change.

The negative correlation between avoidance achievement goal orientation and academic achievement may be explained guided by the assertions by Elliot, Eder, and Harmon-Jones (2013). The authors argued that avoidance goal orientations have deactivating characteristics like negative moods, and distraction from a task. An avoidance orientation focuses a student's attention on not being the worst or on avoiding losing ability. This orientation leads students to be cautious and resistant to engaging fully in the learning task. It lowers the speed or degree to which students understand the learning content hence the lower academic achievement.

The model predicting academic achievement from achievement goal orientation only accounted for six per cent of variance in students' academic achievement. This result was suggestive that other factors not included in the study explained the rest of variance in students' academic achievement. Such a suggestion is aligned to the conclusion by Elliot, Murayama, Kobeisy, and Lichtenfeld (2015) that the influence of goals is a function of multiple features located in the achievement situation and within the learner. The result may add credence to the assertion by Kaplan and Flum (2010) that motivational processes may be characterized by linkages between enduring learner characteristics and situational processes and that these linkages may account for variation in students' outcomes.

The study found that while approach achievement goal orientation made a significant positive contribution in predicting academic achievement, avoidance achievement goal orientation made a negative contribution. This was consistent with studies among high school students (Abd-El-Fattah & Patrick, 2011;Hejazi,et al., 2012). Notably, in this study, the predictive value for approach achievement goal orientation was higher than that of avoidance achievement goal orientation. Similar findings have been reported among college students in China and USA (Chen & Wong, 2014; Elliot et al., 2011;Was, Al-harthy, Stack-oden, & Isaacson, 2009). The differences were also consistent with those reported in a meta-analysis by Van Yperen, Blaga, and Postmes (2015) where approach goals generally enhanced performance in achievement situations across 19 journal papers.

Achievement goal orientation theory offers an explanation for the differences in the predictive values of the approach and avoidance achievement goals on academic achievement. Elliot and colleagues (Elliot et al., 2011; Elliot, Eder, & Harmon-Jones, 2013) argue that approach achievement goals focus students' attention on the possibility of success, which evokes and sustains hope, eagerness, and excitement. When students appraise the learning task as a challenge, this tends to evoke effort and persistence, and subsequently benefits performance attainment. In contrast, students who endorse avoidance achievement goals regulate their efforts at achievement tasks focusing mainly on failure, a negative outcome. In the meta analysis by Van Yperen et al. (2015), it was found that the focus on negative outcomes evoked different negative feelings and cognitions, including anxiety, disorganization, and self-handicapping, which subsequently undermine performance attainment.

Limitations of the study

In this study, achievement goal orientations were collapsed into two dimensions: approach and avoidance. This did not address the specificity of mastery versus performance achievement goals as suggested by the achievement goal orientation theory. Future studies may seek to establish whether the uncollapsed 3 x 2 model of achievement goal orientation captures differences in Kenyan students' achievement goal orientation. Another limitation was that this study included only form three students from Embu County, and therefore, the results may not be very representative of the secondary school students in Kenya. Future studies may be conducted with samples drawn from other areas and across primary, secondary, and post-secondary levels of education. Such an approach may address regional differences in students' achievement goal orientations. In such studies, the use of termly scores as an index of academic achievement may be cross-validated by referring to nationwide standardized achievement test results.

CONCLUSION

This study evaluated how achievement goal orientations predict academic achievement among secondary school students in Kenya. The findings indicate that it is approach achievement goal orientation rather than avoidance achievement goal orientation that positively predicts academic achievement. With regards to AGQ, this study reveals that, with some refinements, the tool may be used confidently for research among secondary school students in non-American and non-Asian educational set ups.

RECOMMENDATIONS

In the light of the study findings, we urge policy makers to consider introducing school-based interventions aimed at helping students to focus more on approach achievement goal orientation than avoidance achievement goal orientation. In addition, parents and teachers should encourage students to adapt an approach achievement goal orientation, as it was more beneficial academically than avoidance achievement goal orientation. To forge an approach goal orientation, students should be encouraged to focus on attaining competence in academic tasks. We recommend that other studies be conducted with samples drawn from different localities in Kenya. Future studies may further seek to compare whether the uncollapsed3 x 2 model of achievement goal orientation predicts academic achievement differently from the approach taken in this study.

DECLARATIONS

Availability of Data and Materials

In case you require extra data, kindly contact the corresponding author.

Competing Interests

The authors declare that they had no competing interests.

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