Using Achievement Goal Orientation and Self-Regulated Learning Strategy as Predictors of Academic Achievement in English Language Among the Secondary School Students' in Anambra State, Nigeria

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ABSTRACT

Students' achievement goal orientation and self-regulated learning strategies are strong indicators and facilitators of proactive learning. The study aimed to examine students' achievement goal orientation, self-regulated learning strategy in predicting academic achievement in Anambra State. Four research questions and three null hypotheses guided the study. The study adopted a predictive correlational design. The population of the study comprised of 21,204 SS II students from which a sample of 630 was drawn. Multi-stage procedure was used to select the sample. Two standardized research instruments namely; Achievement Goal Orientation Questionnaire (AGOQ), and Motivated Strategies for Learning Questionnaire (MSLQ), as well as scores from students' promotional examination were used for data collection. Cronbach's alpha was used to determine the reliability of the items in the instruments. Reliability indices of 0.73, for mastery-approach, 0.71, for mastery-avoidance, 0.82, for performance-approach, 0.76, for performance-avoidance, 0.72 for work-avoidance, 0.64 for monitoring, 0.73 for planning, and 0.68 for self-regulating activity respectively were obtained. The overall reliability coefficient was 0.71 which shows that the instrument was reliable and good for the study. The standard multiple regression was used to analyze the collected data. The t-test for r, F-test and test of significance for β, were used to test hypotheses at .05 level of significance. Findings showed that students' achievement goal orientation and self-regulated learning scores yielded an adjusted R squared of .025. This implies that predictors accounted for about 2.5% of the variance scores in academic achievement in English language. Findings also revealed that the proportion of variance in academic achievement scores in English language explained by achievement goal orientation and self-regulated learning scores is statistically significant. Finally, it was recommended that Students' should enlighten themselves on the need and benefits of using achievement goal orientation and self-regulated learning, for these learning constructs could enhance their learning and academic achievement.

Keywords: *Achievement Goal Orientation, Self-regulated Learning Strategy, and Academic Achievement.*

Introduction

There is interplay that exists between achievement goal orientation and self-regulated learning strategy as two motivational factors that have the cognitive abilities that could influence students' academic achievement in school at various levels. Despite the acknowledgement that the association between these variables is important, it could still develop a link to predict academic achievement. Educational specialists are still unclear about the pathways through which this interplay influences the motivation, learning and achievement. A possible reason for this lack of understanding is that most educational specialists that studied academic motivation in Nigeria have treated it as a property inherent in person (i.e., individual differences approach). Maerh and Zusho (2009) claimed that for many researchers, motivation is viewed as a personality trait exhibited to varying degrees by individuals. It is also assumed that it is a relatively stable trait, a pattern of feeling, personal orientation and behaviour that would influence academic achievement. It is from these perspectives that the researchers had decided to consider achievement goal orientation and self-regulated learning as the motivational properties that have the cognitive attributes that could predict academic achievement.

To achieve in education, students not only need to dispose of the necessary cognitive skills, but they also need to have the will or motivation to learn (Pintrich & De Groot, 1990). On this assumption; teachers, educational psychologists and researchers recognized the usefulness of identifying effective pathways to promote students' adaptive motivation and achievement behaviours in classroom learning context. It will be acceptable to agree with the study of Kaplan and Maehr (2007) which emphasized that within the achievement goal theory, achievement goal orientation focuses less on what objectives individuals are trying to achieve in learning contexts, but places emphasis on why and how objectives are being achieved. Thus, the overarching emphasis is on the cognitive purposes students perceive for engaging in achievement-predicting or relating behaviour and the meanings they ascribe to that behaviour. In relation to this, achievement goal orientation represents the achievement-predicting behaviour that could determine the reasons to engage to achieve or not to engage to achieve academically. Though scholars have conceptualized achievement goal orientation as a catalyst that direct energy for the realization of desired outcome (Harackiewicz, Barron, Tauer, & Elliot, 2012). This shows that achievement goal orientation is a drive, i.e., an internal state, need, or condition that motivates individuals toward a desired behaviour.

Scholars believed that achievement goal orientation is partly rooted in achievement motivation, which can be conceptualized as personality predictors, facilitators and indicators of behavioural outcomes (Mottus, Baumert, & Back, 2020). Interestingly, achievement goal orientation is an integrated pattern of beliefs that leads to different ways of approaching, engaging in, and responding to achievement situations (Ames, 1992). To put it differently, it is an individuals' general schema or theory for approaching the task, doing the task, and evaluating their performance on the task. This pattern is considered to be the base for successful academic performance. Mottus, Baumert, and Back, (2020) noted that the motivation students have towards engaging in academic activities is directed by a complex set of achievement goal orientation. Urdan and Maehr (1995) defined achievement goal orientation as cognitive representations of the different purposes students may adopt for their learning in achievement situation. Dweck and Leggett, (1988) defined achievement goal

orientation as individually perceived reasons or purposes students have for wanting to achieve or not to achieve in any academic task. This type of goal orientation has been conceptualized as catalysts that direct energy for the realization of desired outcomes. It indicates that the pursuit of qualitatively different achievement goal orientation provides an interpretive framework that result in different patterns of emotional, behavioural and cognitive responses (Dweck & Leggett, 1988). That is to say that motivation in school can be understood by looking at the reasons or purposes students adopt while engaged in academic work.

This shows that achievement goal orientation is a comprehensive semantic system of situations or contexts which have cognitive, emotional and behavioural outcomes which learners could use to interpret their performances. For this reason, Dweck and Legget (1988) described achievement goal orientation to represent the purpose or cognitive-dynamic focus of competence relevant behaviour and the tradition of this goal orientation emphasized mostly on mastery goal and performance goal. This indicates that the purposes or reasons an individual has endorsed in pursuing an achievement task could be either for mastery effort purposes or for performance competence purposes.

Elliot and McGregor (2001) assert that achievement goal orientation would represent a structured knowledge, unit, or subjective personal conception, assumption/schema about the purposes for an achievement task as well as other elements in terms of how success, competence, the role of effort, ability, errors and standards for evaluation are defined. These, usually refer to students' beliefs in involvement with schooling, academics activities, or learning that deals with behaviour and emotions that encompasses effort and persistence in school work. It is on this assumption that Elliot and McGregor (2001) divided achievement goal orientation into four clusters; such as master-approach, mastery-avoidance, performance-approach, and performance-avoidance. According to the scholars, mastery-approach goal orientation focused on the development of competence through task mastery. Mastery-avoidance goal orientation deals with trying to avoid being incompetence relative to the task or personal standard. Performance-approach goal orientation deals with trying to attain competence relative to one's peers, while performance-avoidance goal orientation deals with trying to avoid being incompetent relative to one's peers. In addition to these four clusters of achievement goal orientation, Elliot and Harachkiewicz (2006) identified a fifth type of achievement goal orientation as work-avoidance goal orientation which describes a student that tries to do as little as is necessary to get his/her set goal. Students that endorse this goal orientation seek to complete their work with minimum effort. Mastery-avoidance and performance-avoidance differ from work-avoidance as it is also referred to as academic alienation in which failure is avoided without hard work and achievement is viewed as possible (Dweck, 2006).

Suffice it to say that these qualitatively different types of achievement goal orientation were expected to yield differential effects on students' learning and achievement, but this has failed to provide strong evidence in the Nigerian academic literature. The question is would students manipulate achievement goal orientation to have a link with their self-regulated learning strategy in the process of learning to predict academic achievement? It is known though that, achievement goal orientation and self-regulated learning strategy are personality constructs that conceptualized the meaningful pathways that promote students' motivation and achievement behaviour in the classroom.

Previously, Zimmerman and Schunk, (2008) emphasized that students should be sensitized on the significance of self-regulated learning strategies, which has been revealed as a learning process in which self-regulated thoughts, feelings, and actions are systematically oriented towards attainment of the students' academic desires. In the view of Mischel and Ayduk, (2004) self-regulation is a broad construct which includes a monitoring and action component that encompass a complex array of interacting cognitive and emotional processes aimed at goal attainment. In accordance with the study of Zimmerman (1986) as cited in Zimmerman and Schunk, (2008) this construct can be referred to as the degree to which individuals become meta-cognitively, motivationally, and behaviourally active participants in their own learning processes.

Alternatively, as self-regulated learning strategy is related to academic achievement and cognitive skills, it is clearly not synonymous with cognitive competency alone. This supported the study of Schunk (2001) which defined self-regulated learning strategies as learning approach that results from students' self-generated thoughts and behaviours that are systematically orientated toward the attainment of their learning goals. To become self-regulated learners, students should learn to regulate the use of information-processing modes, the learning process, and the self. Similarly, Pintrich (2000) noted that self-regulated learning strategy involves activating and sustaining cognitions, behaviours, and emotions in a systematic way to attain learning goals. Accordingly, self-regulated learners are assumed to manage their behaviours and anxieties to facilitate learning, and actively avoid behaviours and cognitions detrimental to academic success (Stallwork-Clark, Cochran, Nolen, Tuggle, & Scott, 2000). Also, Zimmerman and Schunk, (2008) observed that self-regulated students understand the strategies and environments necessary for learning to occur, and feel capable of performing to their personal standards. For example, Schunk and Zimmerman (1994) opined that when challenged, self-regulated learners manage to understand when and how to utilize strategies that increase persistence and performance in the learning situation. Also, students purposefully use meta-cognitive strategies that incorporate self-monitoring and evaluative components that allow for self-observation and self-reaction in the context of learning.

Suffice it to say that self-regulated learning strategy is rooted in social cognitive theory of Bandura (1986) which described self-regulation in four components; such as self-observation, goal setting, self-judgment, and self-reaction. These are meta-cognitive strategies that represent the integral parts of learning strategies that are being referred to as the controlling and self-regulating aspects of meta-cognition. These strategies represent useful skills for effective learning, for storage and for retrieval of information. In the present study, the clusters of self-regulated learning strategy such as; planning, monitoring, and regulating activities will be examined in relationship with the clusters of achievement goal orientation to see how these clusters could jointly predict academic achievement. In the planning aspect, it represents the goal setting and task analysis. The monitoring aspect of this construct is referred to as regulating one's attention while reading, self-testing or questioning, helping the students to gain understanding and comprehension. Then, regulating activities represent adjusting the cognitive resources in order to fulfill the task help to improve performance by checking and correcting one's own performance while engaging in a task. This is an indication that the constructs such as achievement goal orientation, and self-regulating learning strategy could be salient indicators that effect students' academic achievement.

Academic achievement has been defined as scores obtained from examination that measure the extent to which a person has acquired certain information or mastered certain skills, usually as a result of specific instruction (Meherns & Lehman, 2016). These scores characterize the academic outcomes obtained from achievement tests assigned to assess a person's performance in a course of study which he/she has undergone. These can be regular performance feedback obtained by means of standardized test scores as presented by the approved examination board. Therefore, considering self-regulated learning strategy and achievement goal orientation as proactive processes which students should endorse as academic skills could enhance their classroom academic achievement. Thus, students can become better learners if they become more aware of their learning and then choose to act on that awareness. In other words, examining the assumption that students' achievement goal orientation and self-regulated learning strategy could jointly predict their academic achievement is the major gap which the present study had sought to cover in the Nigerian academic literature.

Suffice it to say that many studies have examined the relationship that exists among these variables of studies. For example, the study of Matos, Lens, and Vansteenkiste (2007) reported that mastery-approach, was positive and significantly associated with academic achievement. The study of Niepel, Brunner, and Preckel (2014) indicated that performance-approach, performance-avoidance, mastery goals and performance-approach were positively related with academic achievement. The study of Emesi (2017) recorded that mastery-approach was low positively related with academic achievement, while mastery-avoidance, performance-approach, and performance-avoidance were very low positively related with academic achievement. In Emesi's study, the four clusters of achievement goal orientation were significantly related with academic achievement. In the study of Anyanwu and Emesi (2020) it was indicated that mastery-approach and mastery-avoidance performance-approach, were low positively related to academic achievement, but performance-avoidance were low positively related with academic achievement, while work-avoidance was very low negatively related to academic achievement. In Anyanwu and Emesi's study, the five clusters of achievement goal orientation were positively and significantly related with academic achievement. Also, the study of Mohamed (2012) recorded that self-regulation was moderately correlated with the students' task in the classroom. Bakar, Shuaibu, and Bakar (2017) indicated that a strong relationship existed between self-regulated learning strategies and academic achievement. The study of Karagul (2013) indicated that there were significant positive correlations between the three dimensions of self-regulated learning strategies and learning Grade Point Average scores of the students. Therefore, the paucity of studies on how students' achievement goal orientation and self-regulated learning strategy jointly predicted academic achievement in English language of the secondary school students necessitated for the present study. It is on this back drop that the researchers examined achievement goal orientation, and self-regulated learning strategy as predictors of academic achievement in English language in Anambra State, Nigeria.

Research Questions

1. To what extent are the assumptions of multiple regression equation for predicting students' academic achievement in English language scores using achievement goal orientation, and self-regulated learning strategy scores met?

2. What is the nature of the regression equation for predicting students' academic achievement scores in English language using achievement goal orientation and self-regulated learning strategy scores?
3. What proportion of variance in students' academic achievement scores in English language is explained by variance in achievement goal orientation, and self-regulated learning strategy scores?
4. Which of the independent variables best predicted academic achievement in English language students' scores?

Hypotheses

1. The regression equation does not significantly predict students' academic achievement scores in English language using achievement goal orientation, and self-regulated learning strategy scores.
2. The proportion of variance in academic achievement scores in English language explained by variance in achievement goal orientation, and self-regulated learning strategy scores is not significant.
3. Achievement goal orientation, and self-regulated learning strategy scores do not significantly predict students' academic achievement scores in English language.

Method

The researchers used a multiple regression predictive research design and questionnaires to collect data for the study. The population of the study consisted of 21,204 being the total number of students in senior secondary school class II in senior Anambra State. A sample size of 660 students was used and questionnaires were administered to them and collected for data analysis. Multi-stage sampling procedure was used to select the respondents. The procedures for the selection were as follows: In stage one, three education zones were selected from the six education zones in the state by simple random sampling. Then in stage two, from each sampled education zone, one local government area (L.G.A) was selected through simple random sampling given a total of three (3) L.G.As. In stage three, from each sampled L.G.A, 10 schools were randomly selected giving a total of 30 schools. Then, from each of the schools, 22 SSII students were selected for the study using a table of simple random sampling. This gave a total number of 660 students used in the study. The study adapted two standardized research questionnaires namely, Achievement Goal Orientation Questionnaire (AGOQ, Elliot, Murayama & Pekrun, 2011) and Motivated Strategies for Learning Questionnaire (MSLQ, Pintrich, Smith, Garcia, & Mckeachie, 1996). The students' achievement scores were obtained from the schools before the start of the administration of the other two instruments. The students' achievement scores in English language from the state wide senior secondary one (SS1) promotion examination were obtained from the schools before the administration of the instruments. The methods used for validating the instruments were face and construct validity by the three experts from the Faculty of Education, Nnamdi Azikiwe University Awka. Cronbach's alpha reliability method was used to determine the internal consistency of the items in the research questions such as; 0.73, for mastery-approach, 0,71, for mastery-avoidance, 0.82, for performance-approach, 0.76 for performance-avoidance, 0.72 for work-avoidance, 0.73 for planning, 0.64 for monitoring, 0.68 for self-regulating activity respectively. The overall reliability coefficient was 0.72 which shows that the instrument was reliable and good for the study. According to guide lines by Haradhan, (2017), a coefficient of 0.6 is considered to be poor, 0.7 is acceptable while over 0.8 is good. The data were analyzed using standard multiple regression analyses. The t-

test for r, F-test and test of significance for β, were used to test hypotheses at .05 level of significance.

Presentation of Results

The data were first screened for missing values, and 30 respondents were missing representing 4.54%. Hence likewise deletion approach was adopted. After deleting the 30 respondents, the sample size was reduced to 630. Thereafter, analysis of the study was carried out using standard multiple regression analysis with SPSS 26.

Research question 1: To what extent are the assumptions of the regression equation for predicting students' academic achievement scores in English language using achievement goal orientation and self-regulated learning strategy sores met?

Table 1: ***Correlation and descriptive statistics of independent and dependent variables in the regression model for this study.***

To answer research question 1, seven assumptions of multiple linear regression were tested in this study. First, the assumptions of normality of the data were tested using Skewness and Kurtosis. The assumptions were made since none of the Skewness and Kurtosis values of each of the variables exceeded + 3 and – 3 as recommended. Second, the assumptions of absence of multivariate outliers were checked using standardized residual statistics and Cook distance statistics (1977). Result of standardized residual values indicated that the (Standard Residual Minimum = -2.977, Standard Residual Maximum = 3.545). It lies between -3 to 3 as recommended by (Tabachnick and Fidell, 2018). While the result of the Cook distance shows a maximum value of .089 which is less than 1 as recommended by (Cook, 1977). Hence, the assumptions of absence of multivariate outliers were not violated. Third, the assumptions of absence of multicollinearity among the predicting variables were checked using Variance Inflated Factor (VIF), and Tolerance Factor (TF). The Tolerance Factors and Variance Inflated Factors (Master Approach, TF = .172, VIF = 5.800; Master Avoidance, TF = .149, VIF = 6.733; Performance Approach, TF = .940, VIF = 1.064; Performance Avoidance, TF = .173, VIF = 5.792; Work Avoidance, TF = .148, VIF = 6.769; Planning, TF = .921, VIF = 1.086; Monitoring, TF = .893, VIF = 1.120; Regulating activities, TF = .976, VIF = 1.024 of the independent variables show that the values were less than 10 for Variance Inflated Factor and greater than .20 for Tolerance Factor respectively as recommended by (Schumaker, 2015). Hence, this assumption of absence of multicollinearity was made. Forth, the assumption of independent of error was tested using Durbin Watson statistics. The result shown a Durbin Watson statistics of 2.032 which is less that 4 but greater than 0 as recommended by (Denis, 2020). Hence, the assumption of independent of error was not violated. Fifth, the assumptions of normality of error distribution were tested using normal P.P plot of standardized residual. Figure 2 shows that the normal P.P plot of standardized residual data points were normally distributed. Histogram of the standardized residual in figure 3 also testified to that. Sixth, the assumption of homogeneity of variance and linearity was tested using scatter plot of standardized predicted values. The result in figure 3 shows that the data met the assumption of homogeneity of variance and linearity as the predicted values were distributed above zero in both dimensions and do not show any pattern. Seventh, the assumptions of non-zero variance were tested using variance statistics and the data also met the assumptions of non-zero variances (Mastery Approach, Variance = 8.150; Mastery Avoidance, Variance = 8.599; Performance Approach, Variance = 8.855; Performance Avoidance, Variance = 7.972; Work Avoidance, Variance = 8.435; Planning, Variance = 9.580; Monitoring, Variance = 4.334; Regulating activities, Variance = 10.177; Academic

Achievement, Variance = 98.448) as there is no zero variance for the variables in the study as shown in the table 1.

Table 1: Descriptive statistics of independent and dependent variables in the regression model for the study.

Variables	MAP	MAV	PAP	PAV	WA	PL	MT	RA	ACH
MAP	1								
MAV	.108	1							
PAP	-.045	.045	1						
PAV	.908	.092	-.039	1					
WA	.112	.922	.077	.107	1				
PL	-.024	-.018	.048	-.033	.000	1			
MT	-.019	-.018	-.187	-.041	.000	.239	1		
RA	-.044	.018	-.012	-.007	.024	.097	.041	1	
ACH	.101	.111	.064	.106	.098	-.017	.005	.098	1
X	20.0730	19.6730	19.5937	20.0365	19.6937	24.3317	25.8365	20.5005	8.0159
SD	2.85490	2.93237	2.97578	2.82341	2.90438	3.09512	2.08185	3.19018	9.92210
VAR	8.150	8.599	8.855	7.972	8.435	9.580	4.334	10.177	98.448
SK	-.224	-.142	-.114	-.290	-.139	-.417	-.412	-.137	.318
KUR	-.456	-.598	-.604	-.442	-.687	-.263	1.153	-.499	.120
VIF	5.800	6.733	1.064	5.769	6.769	1.066	1.120	1.024	----------
TF	.172	.149	.940	.173	.148	.921	.893	.976	----------

Std. Residual Min = -2.977, Std. residual Max = 3.545
Durbin Watson statistics = 2.032
MAP = Mastery Approach, MAV = Mastery Avoidance, PAP = Performance Approach, PAV = Performance Avoidance, WA = Work Avoidance, PL = Planning, MT = Monitoring, RA = Regulating Activities and ACH = Achievement
X = Mean, SD = Standard Deviation, VAR= Variance, SK = Skewness, KUT = Kurtosis, VIF = Variance Inflated Factor and TF = Tolerance Factor.
Fig 1 the normal P-P plot of standardized residuals data points of academic achievement.

Fig 2 the normal distribution curve of the standardized residuals data points of academic achievement.

Fig 3 scatter plot of standardized predicted values of academic achievement.

Research Question 2: What is the nature of the regression equation for predicting students' academic achievement in English language using achievement goal orientation and self-regulated learning scores?

Table 2: ***Regression coefficient for achievement goal orientation and self-regulated learning strategy scores.***

Model	Non-standardized Beta	Std. Error	Standardized Beta
Constant	30.989	7.824	
Mastery-approach	.111	.329	.032
Mastery-avoidance	.534	.346	.158
Performance-approach	.254	.135	.076
Performance-avoidance	.260	.333	.074
Work-avoidance	-.230	.350	-. 067
Planning	-.110	.131	-.034
Monitoring	.180	.198	.038
Regulating activity	.326.124	.105	

Using the information in table 2, the nature of the regression equation for predicting students' academic achievement in English language using achievement goal orientation, and self-regulated learning strategy scores follows:

Y = b0 + b1x1 + b2 x 2 + b3 x3 + b4 x 4 + b5 x5 + b6 x6 + b7 x 7 + b8 x8

Y = 30.989 + .111 x 1 + .534 x 2 + .254 x 3 + .260 x 4 - .230 x5 - .110 x 6 + .180 x 7 + .320 x 8

Achievement = 30.989 + 0.111 + 1.068 + 0.762 + 1.04 - 1.15 - 0.66 + 1.26 + 2.608

Achievement = 30.989 + 0.111MAP + 1.068MAV + 0.762PAP + 1.04PAV - 1.15WAV - 0.66PL + 1.26MT + 2.608RA

MAP= Mastery-Approach, MAV = Mastery-Avoidance, PAP = Performance-Approach, PAV = Performance-Avoidance, WA = Work-Avoidance, PL = Planning, MT = Monitoring, RA = Regulating Activity. The equation shows that for every unit increase in mastery-approach, achievement increased by 0.111. For every increased in mastery-avoidance, achievement increased by 1.068. For every unit increase in performance-approach, achievement increased by 0.762. For every unit increase in performance-avoidance, achievement increased by 1.04. For every unit decreased in work-avoidance, achievement decreased by 1.15. For every unit decrease in planning, achievement decreased by 0.66. For every unit increase in monitoring, achievement increased by 1.26. For every unit increase in regulating activity, achievement increased by 2.608.

Research Question 3: What is the proportion of variance in academic achievement score in English language that is explained by variance in achievement goal orientation and self-regulated learning strategy scores.

Table 3: ***Regression model summary of achievement goal orientation and self-regulated learning strategy scores on students' academic achievement scores in English language.***

Model	R	R-Square	Adjusted R-Square	Std. Error of the Estimate
	.195[a]	.038	.025	9.79482

To answer this research question on the proportion of variance in academic achievement in English language scores, the adjusted multiple regression R-square in table 3 was used. The result of the table shows that using achievement goal orientation and self-regulated learning strategy scores yielded an adjusted R squared of .025. This implies that predictors accounted for about 2.5% of the variance scores in academic achievement in English language.

Research Question 4: Which of the independent variables best predicted students' academic achievement in English language?

Table 4: ***Regression coefficient for students' academic achievement scores in English language using achievement goal orientation and self-regulated learning strategy scores.***

Model	Non-standardized Beta	Std. Error	Standardized Beta
Constant	30.989	7.824	
Mastery-approach	.111	.329	.032
Mastery-avoidance	.534	.346	.158
Performance-approach	.254	.135	.076
Performance-avoidance	.260	.333	.074
Work-avoidance	-.230	.350	-. 067
Planning	-.110	.131	-.034
Monitoring	.180	.198	.038
Regulating activity	.326	.124	.105

To answer this research question 4 the standardized regression coefficient (B) in table 4 was used for comparison. The regression coefficients presented in table 4 shows non-standardized (B) and standardized regression coefficient (B) for mastery-approach scores are .111 and .032, for mastery-avoidance scores are .534 and .158, for performance-approach scores are .254 and .076, for performance-avoidance scores are .260 and .074, for work-avoidance scores are -.230 and -.067, for planning scores are -.110 and -.034, for monitoring scores are .180 and .038, while the scores for regulating activity are .326 and .105 respectively. Using the standardized beta for comparison, mastery-avoidance is the first mostly predicted students' academic achievement in English language as shown by the B of .534. Regulating activity is the second mostly predicted students' academic achievement in English language as shown by the B of .326. Performance-avoidance is the third mostly predicted students' academic achievement in English language as shown by the B of .260. Performance-approach is the fourth mostly predicted students' academic achievement in English language as shown by the B of .254. Monitoring is the fifth mostly predicted students' academic achievement in English language as shown by the B of .180. Mastery-approach is the sixth mostly predicted students' academic achievement in English language as shown by the B of .111. Work-avoidance is the seventh mostly predicted students' academic achievement in English language as shown by the B of -.230. And planning is the eight mostly predicted students' academic achievement in English language as shown by the B of -.110.

Hypothesis 1: The regression model does not significantly predict academic achievement scores in English language.

Table 5: ***F- test for regression model of achievement goal orientation and self-regulated learning strategy scores on students' academic achievement in English language scores.***

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression [b]	2345.976	8	293.247	3.057	.002
Residual	59577.866	621	95.929		
Total	61923.841	629			

The analysis of variance in the table shows that the regression equation was significant (8,621) = 3.057, $p < .05$. This implies that at least one of the independent variables significantly predicted the academic achievement in English language.

Hypothesis 2: The proportion of variance in academic achievement scores in English language explained by achievement goal orientation and self-regulated learning strategy scores is not statistically significant.

Table 6:*t-test of adjusted R square of the regression model for this study.*

Model	R	R- Square	Adjusted R- Square	Std. Error Estimate	t – cal for adj. R^2	DF	t-crit.	Remark
	.195[a]	.038	.0251	9.79482	4.98226	628	1.960	S

To test hypothesis 2, t-test for adjusted R square was conducted. Results of the study shown in table 6 indicate that t-critical for adjusted R square is 1.960 while that of the t-calculated is 4.98226. Since the t-calculated for adjusted R square 4.98226 is greater than t-critical 1.960, the null hypothesis which states that the proportion of variance in academic achievement scores in English language explained by achievement goal orientation and self-regulated learning scores is statistically not significant is rejected and the alternative hypothesis is accepted. In other words, the proportion of variance in academic achievement scores in English language explained by achievement goal orientation and self-regulated learning strategy scores is statistically significant. Effect sizes were also evaluated using adjusted R^2comparing it with Cohen's *d* statistics guideline, where d < 0.20 indicates a minimal effects size, 0.20 < d < 0.50 indicates a small effect size, 0.50 < d < 0.80 indicates a moderate effect size, and d > 0.80 indicates a large effect size. The value of R adjusted square .0251 indicates a small effect.

Hypothesis 3: Achievement goal orientation and self-regulated learning strategy scores do not significantly predict students' academic achievement scores in English language.

Table 7: *t-test of regression coefficient of students' academic achievement scores in English language using achievement goal orientation self-regulated learning strategy scores.*

Model	Non-standardized Beta	Std. Error	Standardized B	T	p-value	remark
Constant	30.989	7.824		3.961	.000	S
Master approach	.111	.329	.032	.336	.737	NS
Mastery avoidance	.534	.346	.158	1.545	.123	NS
Performance approach	.254	.135	.076	1.877	.061	NS
Performance avoidance	.260	.333	.074	.780	.436	NS
Work avoidance	-.230	.350	-.067	-.658	.510	NS
Planning	-.110	.131	-.034	-.838	.403	NS
Monitoring	.180	.198	.038	.908	.364	NS
Regulating activity	.326	.124	.105	2.627	.009	S

Table 7 shows that mastery-approach, mastery-avoidance, performance-approach, performance-avoidance, work-avoidance, planning and monitoring scores does not significantly predict students' academic achievement scores in English language since the p-value is greater than .05. Then, regulating activity scores significantly predict academic achievement in English language since their p-values are less than .05.

Discussion of findings

The findings from the study indicated that the seven assumptions that were tested did not violate rules that guide each as stipulated by the statistical guide lines being consulted in the process of checking the assumptions. The researchers found that the proportion of variance in academic achievement score in English language explained by achievement goal orientation and self-regulated learning strategy scores is significant. This implies that predictors accounted for about 2.5% of the variance scores in academic achievement in English language. Unfortunately none of the studies being consulted in the present study examined the assumptions and proportion of variance of the independent variables that predict the dependent variable.

Though, the present study adopted a multiple regression predictive research design but looking at the table 1 that presented descriptive statistics of the variables of the study, it was recorded that mastery-approach, mastery-avoidance, performance-approach, performance-avoidance and work-avoidance were positively related with academic achievement in English language. This supported the study of Matos, Lens, and Vansteenkiste (2007) which reported that mastery-approach, was positive and significantly associated with academic achievement. The study of Niepel, Brunner, and Preckel (2014) also supported the present study as it indicated that performance-approach, performance-avoidance, mastery goals and performance-approach were positively related with academic achievement. The study of Emesi (2017) is in support with the findings from the present study as it recorded that mastery-approach was low positively related with academic achievement, while mastery-avoidance, performance-approach, and performance-avoidance were very low positively related with academic achievement. The findings supported the study of Anyanwu and Emesi (2020) as it indicated that mastery-approach, mastery-avoidance performance-approach, were low positively related to academic achievement, but performance-avoidance were low positively related with academic achievement, while work-avoidance was very low negatively related to academic achievement. In Anyanwu and Emesi's study, the five clusters of achievement goal orientation were positively and significantly related with academic achievement.

Then, among the three clusters of self-regulated learning strategy, planning recorded a very low negative relationship with the academic achievement. Monitoring and regulating activity were low positively related with the academic achievement. These findings supported the study of Mohamed (2012) which recorded that self-regulation was moderately correlated with the students' task in the classroom though the study of Mohamed did not examine self-regulation in clusters in comparison with the present study. These findings also supported the study of Bakar, Shuaibu, and Bakar (2017) which indicated that a strong relationship existed between self-regulated learning strategies and academic achievement. The findings supported the study of Karagul (2013) which indicated that there were significant positive correlations between the three dimensions of self-regulated learning strategies and learning Grade Point Average scores of the students.

Findings in table 3 which centered on the proportion of variance in academic achievement in English language scores show that using achievement goal orientation and self-regulated learning scores yielded an adjusted R squared of .025. This implies that predictors accounted for about 2.5% of the variance scores in academic achievement in English language. Suffice it to say that no known study was revealed in the present study to examine the assumptions, regression equation model, and proportion of variance. These are

the gaps in the study which the present study had covered. Using the standardized beta for comparison, in table 7, mastery-avoidance goal orientation mostly predicted students' academic achievement in English language. Though, this mastery-avoidance goal orientation did not significantly predicted academic achievement. This does not support the study of Emesi (2017) which stated that mastery-approach goal orientation is the most potent predictor of academic achievement. The study of Emesi indicated that mastery approach significantly predicted academic achievement.

Conclusion

Considering potential contributing effects of achievement goal orientation and self-regulated learning strategy on students' academic achievement in English language, it indicates that these constructs represent the belief systems which pertain the orientation that people adopt towards the attainment of academic competence. The results also showed that performance-approach and regulating activity significantly predicted academic achievement in English language, while mastery-approach, mastery-avoidance, performance-avoidance, work-avoidance, planning and monitoring did not significantly predict academic achievement in English language.

Recommendations

Based on the findings, the following recommendations were made:

1. Teachers and parents should encourage the students in developing their achievement goal orientation and self-regulated learning strategy which had meaningful link with academic achievement. This is because the students' endorsement of these constructs has associated and predicted academic achievement.
2. Regarding the relative predictive nature of students' achievement goal orientation and self-regulated learning strategy on their educational outcome on domain-specific constructs, students should be encouraged to develop more insights that will have a positive link with their academic achievement. Examining the predictive nature of these learning behaviours in a more general fashion which could enhance the understanding of the relationship between achievement goal orientation and self-regulated learning strategy and other general academic domain is also needed.
3. Although, multiple regression analysis was used to describe the profile of achievement goal orientation and self-regulated learning strategy which involves the differences in academic motivation based on students' response patterns not, much can be achieved without understanding the development and stability of these profiles. Therefore, latent transition analysis could be performed to understand the development and stability of these profiles and make inferences about what may have cause these response patterns.
4. English language teachers should use more of achievement goal orientation and self-regulated learning strategy in their instructional delivery in order to ensure that students actively participate in classroom learning process.
5. Students' should enlighten themselves on the need and benefits of using achievement goal orientation and self-regulated learning strategy, as these learning constructs could enhance their learning and academic achievement.

Authors contributions:
The main contribution of this study is that it elaborates on the idea that students can have multiple beliefs and purposes when they enter the classroom by the inclusion of achievement goal orientation and self-regulated learning strategy when being examined using clusters analytic procedure to predict them with academic achievement of the students.

Conflict of Interest:
The authors declared that they do not have any interest that will constitute a real, potential and apparent conflict of interest with respect to their environment in publication. The authors also declared that they do not have financial or other relation with companies, trade associations or group that may gain or lose financially from the result or conclusion in the study.

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