Journal of
Language and Translation
Volume 12, Number 3, 2022 (pp. 49-64)

Predicting EFL Learners' Cognitive Engagement Based on Achievement Goals

Saeed Ahmadi[1], Mohammadreza Nasr[2*]
[1] Assistant Professor, English Department, Bushehr Branch, Islamic Azad University, Bushehr, Iran
[2] Ph.D., English Department, National Iranian Oil Company, Iran

Received: December 2, 2021 Accepted: January 18, 2022

ABSTRACT
The purpose of the current study is to investigate the relationship between cognitive engagement and achievement goals. It also examines which type of achievement goals, i.e., mastery approach goal, performance-approach goal, mastery avoidance goal, and the performance-avoidance goal is the strongest predictor of cognitive engagement. A quantitative approach has been employed for the purposes of this study. To this end, 183 advanced Iranian EFL learners filled out two validated Likert scale questionnaires on achievement goals (Elliot & Murayama, 2008) and cognitive engagement (Gunuc & Kuzu, 2015) entailing 12 and 10 items, respectively. The findings of the two self-report questionnaires revealed that cognitive engagement and achievement goals were positively correlated. Cognitive engagement was also found to be positively and significantly correlated with the mastery approach and performance approach. Likewise, the results of the multiple linear regression analysis manifested that the mastery approach and the performance approach were ranked as the first and second significant predictors of cognitive engagement, respectively. The study holds crucial pedagogical implications for EFL teachers, educators, and syllabus designers. In light of the findings of the present study, applied linguists and educational psychologists may explore new lines of approach to cognitively engage language learners on the path to achieving their learning goals.

Keywords: Achievement goals; Cognitive engagement; Mastery approach; Performance-approach

INTRODUCTION

Goals in the psychological literature are conceptualized as an outcome or an incentive that a learner attempts to achieve; a content-based notion reflecting a learner is striving to accomplish. Goals within achievement goal theory highlight why a learner is trying to obtain the desired outcome (Urdan & Maehr, 1995).

Achievement goals are of salient importance in any educational setting. The classroom goal structure impacts learners' cognitive engagement, motivation, and achievement (Ames & Archer, 1988) and depicts achievement goals pursued through instructional practices and policies within that setting (Lam, 2015). Achievement goal theory is characterized by two major types of goals, namely mastery and performance goals (Kaplan & Maehr, 2007). While the former concerns goals related to building competence through hard work, the latter pertains to displaying competence in a specific area such as outperforming other learners. Given the emphasis laid on achieving competence, these two major goals are subsumed under competence-related goals (Elliot & Church, 1997). Teachers can map out strategies and grading policies that augment personal growth in terms of learning (mastery goal structure)

* Corresponding Author's Email: *nasr_mr@yahoo.com*

and performance or capabilities (performance goal structure) to do better or avoid appearing incompetent or less capable than others (performance-avoidance) (Lam, 2015).

Mastery goals are adaptive and should be enhanced at both the learner and classroom levels. In contrast, performance-avoidance goals are destructive and invariably predict adverse learning outcomes (Hulleman, Schrager, Bodmann, & Harackiewicz, 2010). Based on the mastery approach, performance-approach goals can be adaptive for some learning outcomes including achievement and cognitive engagement (Pintrich, 2000b). In essence, at the learner or classroom level, they can be detrimental (Lau & Nie, 2008; Midgley, Kaplan, & Middleton, 2001; Murayama & Elliot, 2009; Wolters, 2004). Within the performance approach, learners facing any difficulties may lose their interest as a result of negative affect and may employ maladaptive strategies such as cheating to avoid work to achieve the goal of outperforming others (Midgley et al., 2001).

Performance-approach goals within the multiple goals perspective are useful for achievement and cognitive engagement. That is, pursuing mastery and performance-approach goals within classroom settings can also bring about positive outcomes (Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002; Linnenbrink, 2005; Murayama & Elliot, 2009; Pintrich, 2000a). The type of tasks, assessment policies, and the level of autonomy learners are afforded, characterize the goal structure within a learning environment (Kaplan, Middleton, Urdan, & Midgley, 2002).

Educators maintain that the integration of new information and the construction of meaning lie at the heart of the learning process. However, classroom research suggests that teachers often have trouble engaging language learners intentionally and persistently in the course of learning (Brophy, 2017). Previous studies of motivation (Dweck & Elliot, 1983; Maehr & Nicholls, 1980) have shown that learners' engagement in achievement activities was motivated by a series of goal orientations including mastery versus ability, learning, and performance. These goals vary mainly as to whether learning is perceived as an end *per se* or as a means to a goal beyond the task, namely obtaining social approval, achieving superiority, or avoiding unfavorable evaluations from others (Meece, Blumenfeld, & Hoyle, 1988). Depending on language learners' needs and abilities or what is expected of them, they adopt various achievement goals. Consequently, learners' achievement goals may predict their cognitive engagement in achievement situations. Cognitive engagement is defined as learners' undivided attention, self-regulation strategies, and mental energy (Helme & Clarke, 2001; Philp & Duchesne, 2016). As a type of self-regulation in learning, it refers to psychological investment in learning, and a combination of cognition and strategic learning (Fredricks, Blumenfeld, & Paris, 2004).

Due to the pivotal role of achievement goals in language learning, on the one hand, and cognitive engagement, on the other, researching the relationship between these two variables as manifestations of learner motivation could contribute to the field. In educational language learning settings, learners' achievement goals are reflective of the purposes based on which they engage in learning tasks.

Language learners usually experience achievements and failures on the way of learning a language. Those experiencing a sense of failure attempt to work harder than they did before. As a result, they strive for goals that result in excellent performance and the planning for personal learning goals to improve their learning process. While a majority of studies on achievement goal theory have centered on goal orientation and its correlation with variables including motivation, self-efficacy, etc., little is known about whether and how goal orientation is correlated with cognitive engagement. However, few studies (Martin & Liem, 2010; Ramshe, Ghazanfari, & Ghonsooly, 2019 a) reported that individual personal best goals are related to cognitive engagement and achievement. Yet, no studies to the best of the authors' knowledge have thus far investigated the relationship between cognitive engagement and achievement goal theory in the context of language teaching.

Inspired by this gap in the literature, the present study seeks to investigate the relationship between cognitive engagement and achievement goals and its components. More precisely, the study intends to find answers to the following research questions:

Q1. Are there any statistically significant relationships between cognitive engagement and achievement goals and their subscales including mastery approach goal, performance-approach goal, mastery avoidance goal, and performance-avoidance goal?

Q2. Do achievement goal dimensions i.e., mastery approach goal, performance-approach goal, mastery avoidance goal, and performance-avoidance goal significantly predict EFL learners' cognitive engagement?

The study results can raise the awareness of EFL teachers concerning language learners' goal achievements and their levels of cognitive engagement. Thus, this study might conduce to the literature by exploring how learners' achievement goals operate with cognitive engagement. Informed of learners' achievement goals and cognitive engagement level, EFL teachers can arouse language learning motivation and pursue innovative methods of enhancing learners' cognitive skills. Conducting research on cognitive engagement in relation to goal orientations might account for variations in language learners' levels of cognitive engagement in classroom tasks.

LITERATURE REVIEW

Achievement Goal Theory

Originating in the 1980s, achievement goal theory gained in popularity as a prominent framework to study learner motivation in mainstream education (Elliot, 1999; Maehr & Zusho, 2009). Grounded on motivation and achievement-seeking behaviors, this theory deals with what drives a learner to accomplish an intended outcome and concerns goals that trigger achievement-oriented behaviors on the side of learners (Maehr & Zusho, 2009). It is founded on two main goals, namely mastery, and performance with the former centering on enhancing task excellence/ mastery and the latter focusing on the display of competence in the presence of others. These goals, however, elicit different behaviors. Mastery goals are associated with learners' perseverance facing obstacles, with challenge seeking, and with internal motivation; performance goals, on the other hand, are linked with less resistance to failure, avoidance of challenges, and with low internal motivation (Ames, 1992). While mastery goals concern positive outcomes, there are mixed results concerning the outcome of performance goals (Maehr & Zusho, 2009). For example, Sideridis (2005) demonstrated that performance-approach goals were positively related to effort, persistence, and achievement. However, Linnenbrink (2005) illustrated that performance-approach goals were destructive for achievement.

Elliot and Church (1997) considered another dimension and divided performance goals into performance-approach goals highlighting positive competence appraisals and performance-avoidance that focuses on avoidant negative performance appraisals.

Mastery and performance goals are central to achievement behaviors. Mastery goals pertain to developing skills, displaying competence to others, and striving to outperform their performance (Kaplan & Maehr, 2007). A combination of mastery and performance goals would create personalized goals (Martin & Liem, 2010) which are mastery-centered due to their personalized nature. Such goals further encompass a performance dimension representing competition with one's previous experiences (Pintrich, 2000a).

Cognitive Engagement

Cognitive engagement entails higher levels of determination and self-regulation strategies (Pintrich, 2000b). At the classroom level of analysis, it signifies the effortful use of cognitive learning strategies and self-regulatory strategies (Greene, 2015; Reeve, 2012). It also points to students' learning strategies and their learning perceptions that hinges on learning-related issues including, learning goals, learning motivation, planning, and self-regulation(Appleton, Christenson, Kim, &

Reschly, 2006; Fredricks et al., 2004; Jimerson, Campos, & Greif, 2003; Sutherland, 2010; Walker, Greene, & Mansell, 2006). Entailing learners' interest, concentration, investment, and attempt, cognitive engagement is viewed as a psychological process (Glanville & Wildhagen, 2007). Drawing on the conception of investment, cognitive engagement incorporates reflection and willingness to put forth the effort to comprehend challenging concepts and to acquire demanding skills (Mahatmya, Lohman, Matjasko, & Farb, 2012).

In academic work settings, cognitive engagement is the result of motivation in a learning process (Erdem & Ibrahim, 2013) which embraces the psychological effort exerted by learners who seek to make sense of learning skills (Greene, Miller, Crowson, Duke, & Akey, 2004). It involves learners' determination, reflection on learning, and strategies they employ to gain mastery over challenging skills (Metallidou & Vlachou, 2007). That is, cognitive engagement integrates thoughtfulness and disposition to expend the effort required to master complicated skills (Fredricks et al., 2004). To Fredricks and McColskey (2012), the extra effort made on the part of learners is one of the criteria based on which cognitive engagement can be gauged in the learning process.

Empirical Studies

Martin and Liem (2010) examined the role of academic personal best goals on the prediction of cognitive engagement and achievement among 1866 high school students in Sydney, Australia. Their findings demonstrated that language learners' personal best goals are closely associated with cognitive engagement. In a similar vein, Ramshe, Ghazanfari, and Ghonsooly (2019 b) conducted a study to investigate the effect of social goals on cognitive, behavioral, and emotional engagement in an academic context in Iran. The sample of their study comprised 302 students majoring in English literature at four universities in Mashhad and Isfahan, Iran. Their findings revealed a close relationship between participants' personal best goals and their level of cognitive engagement.

Closely associated with the previous study, Ramshe et al (2019 a) sought to investigate the role of personal best goals in EFL learners' behavioral, cognitive, and emotional engagement among 302 university students majoring in English literature at four universities in Mashhad and Isfahan, Iran. The results of the data collected from the engagement and personal best goals questionnaires revealed that cognitive engagement could be predicted by mastery goals.

In a study conducted on a sample of 3,753 middle school students in China, Yu and Martin (2014) examined the role of personal best goals in predicting academic motivation, engagement, and buoyancy. The results of their study indicated that mastery and personal best goals could predict engagement and motivation outcomes.

Sedaghat, Abedin, Hejazi, and Hassanabadi (2011) performed a similar study to examine the effect of motivational factors on academic and cognitive achievement. Participants of their study were 1371 high school students who were required to fill out achievement goals and motivated strategies for learning questionnaires. Noteworthy to mention is that their study was carried out in a context other than language learning. Their results revealed that cognitive engagement and academic achievement could be predicted by achievement goals.

METHOD

Design

To address the research questions of the study, a quantitative design was adopted. The quantitative data of the study were obtained through two questionnaires which were then analyzed quantitatively.

Participants

A sample of 183 advanced Iranian EFL learners (94 males and 89 females) with the age range of 17 to 41 was selected from miscellaneous private language institutes based on convenience sampling. As for their academic degrees, 26, 39, 82, and 36 participants held

Ph.D., MA, BA, and diploma degrees, respectively.

Instrumentation

The instruments deployed in this study were two validated questionnaires on achievement goals and cognitive engagement adapted from Elliot and Murayama (2008) and Gunuc and Kuzu (2015), respectively. The first questionnaire entails 12 items gauging four salient constructs of achievement goals, namely performance-approach goal (3 items), mastery avoidance goal (3 items), mastery approach goal (3 items), and performance-avoidance goal (3 items) on a 5-point Likert scale ranging from strongly disagree to strongly agree (see Appendix A). To estimate the cognitive engagement level among the EFL learners, the second questionnaire was employed (see Appendix B). The initial form of this questionnaire encompassed a total of 59 items dealing with all student engagement components. For the purposes of this research, only 10 items (21-30) of the original questionnaire concerning cognitive engagement were utilized. The cognitive engagement questionnaire also involves a 5-point Likert scale ranging from strongly disagree to strongly agree. Since the participants of this study were language learners, the two questionnaires were translated into Persian. To this end, the following three phases were taken. In the first phase, the questionnaires were translated into Persian by the lead researcher. The second phase involved the back translation, a process whereby the initial English-Persian translation was back-translated into Persian by a certified translator to ensure that English and Persian versions were identical. Finally, following the back translation phase, another expert translator made the necessary amendments to fine-tune the final version of the Persian questionnaires during the third phase. It is worth mentioning that few minor changes were added to the Persian translation of the questionnaires to suit the language teaching context. For example, the word, "class" was translated into Persian as "English class". However, the order and number of the items remained untouched. Furthermore, two applied linguists as well as two educational psychologists reviewed the items of the questionnaires meticulously and approved their validity and authenticity. Moreover, to put the participants at ease, the two questionnaires were merged into a single questionnaire so that they could complete them at once.

Procedure

The data for the study was collected through two self-report questionnaires administered on a popular social media network named WhatsApp. Applying WhatsApp for filling out the questionnaires could cover a broad range of EFL learners at various private language institutes in Iran. The two questionnaires were converted into one questionnaire encompassing a total of 22 Likert scale items. An invitation containing a link to the questionnaire was then sent to EFL teachers asking them to share the link with their EFL learners at private language institutes. In the introduction section of the questionnaire, the EFL learners were assured that their data would only be used for conducting this study. However, no personal information was required to take part in the study. By clicking the link, EFL learners agreed to complete the questionnaires lasting approximately five minutes. The data collection lasted about two months starting from May 2020 and ending in July 2020. It is worth mentioning that 27 participants with missing data were removed from the study, and the analyses were performed only for 183 out of a total of 210 individuals. Noteworthy also is that the translated versions of the questionnaires were pilot-tested on 40 EFL learners enjoying similar features to the target participants of the study and the reliability of achievement goals and cognitive engagement instruments employing Cronbach's Alpha turned out to be 0.87 and .89, respectively indicating that the questionnaires were deemed reliable for the study (Salkind, 2006).

RESULTS

The statistical data analyses including the confirmatory factor analysis (CFA), Pearson Product Moment correlations, and multiple

linear regression analysis were conducted using SPSS Statistics 24 to address the research questions.

Confirmatory Factor Analysis

To check the construct validity of the questionnaires and that whether the questionnaires fit the Iranian EFL context, we performed confirmatory factor analysis in which goodness-of-fit indices i.e., CMIN/DF, RMSEA (Root Mean Square Error of Approximation), CFI (Comparative Fit Index), TLI (Tucker-Lewis Index), IFI (Incremental Fit Index) and GFI (goodness-of-fit index) were utilized. The error of approximation index (RMSEA) evaluates how well an instrument fits a population (Brown, 2006). The baseline comparison indices (CFI, TLI, and IF) range from 0 to 1. A cut-off value beyond the threshold value of .90 is commonly used for these incremental fit indices (Byrne, 2010).

The fit indices for the questionnaires as shown in Table 1 demonstrated a good fit of both cognitive engagement and achievement goals questionnaires to the data confirming the factor structure of the questionnaires by the CFA.

Table 1

Fit Indices of the Questionnaires

	CMIN/ DF	DF	GFI	IFI	TLI	CFI	RMSEA
Achievement goals	3.145	50	.91	.93	.91	.93	.069
Cognitive engagement	1.559	35	.95	.96	.94	.96	.055
Acceptable fit	< 3	>.90	>.90	>.90	>.90	>.90	<.08

Piloting the Questionnaires

Initially, the Persian version of the questionnaire was pilot-tested on 40 EFL learners who enjoyed similar features to the target participants of the study. The internal consistencies of achievement goals and cognitive engagement instruments employing Cronbach's Alpha turned out to be 0.87 and .89, respectively indicating that the questionnaires were deemed reliable for the study (Fraenkel & Wallen, 2006; Salkind, 2007).

Reliability of the Questionnaires

The reliability indices of the achievement goal questionnaire and its components as well as the cognitive engagement instrument were calculated using Cronbach's alpha (Table 2).

Table 2

Reliability Statistics for the Measurement Scales/Subscales

	Cronbach's Alpha	N of Items
PA	.73	3
MAV	.87	3
MA	.81	3
PAV	.78	3
AG	.81	12
CE	.79	10

Note: PA= performance approach; MAV= mastery avoidance; MA= mastery approach; PAV= performance avoidance; AG= achievement goal; CE= cognitive engagement

As evident, the reliability indices measured by Cronbach's Alpha coefficient were all above .7 implying that the questionnaires and the subscales were reliable.

Preliminary Statistics

The preliminary analyses including the independence of residuals, multicollinearity, homoscedasticity, linearity, and the lack of

outliers were carried out. The results of these analyses showed no violations of the assumptions common to correlation and multiple regression.

Results for the First Research Question

To investigate if there were significant relationships between cognitive engagement and performance approach, mastery avoidance, mastery approach, and performance-avoidance, the Pearson Product Moment correlation was run, the results of which are displayed in Table 3.

Table 3

Correlations between CE, AG, PAV, MA, MAV, and PA

		CE	AG	PAV	MA	MAV	PA
CE	Pearson Correlation	1	.200**	.116	.439**	-.130	.281**
	Sig. (2-tailed)		.007	.117	.000	.080	.000
	N	183	183	183	183	183	183

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

Note: PA= performance approach; MAV= mastery avoidance; MA= mastery approach; PAV= performance avoidance; AG= achievement goal; CE= cognitive engagement

As displayed in Table 3, the correlation between cognitive engagement as measured by cognitive engagement scale and achievement goals (r = .20) as measured by achievement goal instrument was positively significant at 0.01 level (p = .007 < .01, N=183). A value of .20 indicates a small correlation (Cohen. 1998). Also the relationships between cognitive engagement and mastery approach (r = .43, p=.00) and performance approach (r= .28, p=.00) were found to be positively significant at 0.01 level. The strength of correlation of r=.43 and r=.28 indicates moderate and small correlations, respectively (Cohen, 1988). Noteworthy to mention is that the correlational indices of the variables of the study were all below .7 which violates multicollinearity (Pallant, 2010).

Results for the Second Research Question

The second research question investigated which subscale of achievement goals i.e., performance-avoidance, mastery approach, mastery avoidance, and performance approach was a stronger predictor of cognitive engagement.

The preliminary assumptions for multiple regression including normality, multicollinearity, homoscedasticity, and linearity were already performed. Here, collinearity statistics, the lack of outliers, and the independence of residuals as the last three assumptions for multiple regression are checked.

Collinearity statistics as depicted in Table 4 also confirmed the lack of multicollinearity. The two values of Tolerance and VIF (Variance Inflation Factor) yielded acceptable indices. Based on Pallant (2010), a tolerance of less than .1 and a VIP value of above 10 violates the presence of multicollinearity. Table 4 illustrates the pertaining results.

To check the lack of outliers in the data, the residual analysis was performed. Table 5 presents the standardized residuals.

Table 4

Collinearity Statistics

Model	Tolerance	VIF
PA	.870	1.150
MAV	.889	1.125
MA	.917	1.090
PAV	.870	1.150

Note: PA= performance approach; MAV= mastery avoidance; MA= mastery approach; PAV= performance avoidance; AG= achievement goal; CE= cognitive engagement

Table 5
Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.5648	4.4744	4.1885	.19711	183
Residual	-1.05806	.99432	.00000	.36925	183
Std. Predicted Value	-3.164	1.450	.000	1.000	183
Std. Residual	-2.850	2.678	.000	.994	183

a. Dependent Variable: Cognitive Engagement

As shown in Table 5, the minimum and maximum values of standardized residuals turned out to be -2.850 and 2.678, respectively which fall within the ranges of -3.3 or less than 3.3 as suggested by Pallant (2010) which indicates the lack of considerable outliers.

The independence of residuals was checked using the Durbin-Watson statistic, the results of which can be observed in the model summary of multiple regression analysis in Table 6.

Table 6
Model Summary of Cognitive Engagement

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.439[a]	.193	.188	.37706	
2	.471[b]	.222	.213	.37130	1.784

a. Predictors: (Constant), MA

b. Predictors: (Constant), MA, PA

c. Dependent Variable: CE

Note: PA= performance approach; MA= mastery approach; CE= cognitive engagement

As is evident in Table 6, the Durbin-Watson (DW) index of 1.78 demonstrated that the assumption of independence of errors was met. According to Tabachnick and Fidell (2007), Durbin-Watson indices between 1 and 3 are acceptable indicating that there are not any serial correlations between residuals (errors). Considering the value of the Durbin-Watson index of 1.76 in the data, it could be concluded that there was no first-order linear auto-correlation.

As shown in Table 6, only two independent variables, namely mastery approach and performance approach entered the model. When only mastery approach was used as a predictor, the simple correlation coefficient (R) was found to be .439 (R 2 =.193). Thus, it indicates that 19 % of the variance in EFL learners' cognitive engagement can be explained by mastery approach. However, when two predictors i.e., mastery approach and performance approach are included simultaneously as well (model 2), the multiple correlation coefficient increased to .471 (R 2 =.222) indicating that 22 % of the variance in cognitive engagement can be predicted by the combination of these independent variables. Therefore, if mastery approach accounts for 19 %, we can conclude that performance-approach accounts for an additional 3%. That is, the

inclusion of performance approach has explained quite a small amount of the variation in cognitive engagement. The negligible difference between the R-squared and Adjusted R-squared values (.222 - .213 = .009) demonstrated that if the model were taken from the population, it would account for .9 % less variance in the outcome.

The ANOVA test was run to check if the overall regression model is a reliable fit for the data or whether the percentage of contribution is significant or not. The results of ANOVA (Table 7) tests revealed that the regression models were statistically significant at first [(F (1, 181) = 43.269, p = .000] and second steps [F (2, 180) = 25.645, p = .000].

Table 7

ANOVA ***Test of Significance of Regression Model***

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.152	1	6.152	43.269	.000[a]
	Residual	25.734	181	.142		
	Total	31.886	182			
2	Regression	7.071	2	3.535	25.645	.000[b]
	Residual	24.815	180	.138		
	Total	31.886	182			

a. Predictors: (Constant), MA

b. Predictors: (Constant), MA, PA

c. Dependent Variable: CE

Note: PA= performance approach; MA= mastery approach; CE= cognitive engagement

To investigate the contribution percentage of each of the independent variables i.e., mastery approach and performance approach to the dependent variable (cognitive engagement), a multiple regression analysis was performed.

Table 8

Regression Coefficients for the Predictors of Cognitive Engagement (Predictive Power of Achievement Goals Components for Cognitive Engagement)

		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	2.455	.265		9.267	.000		
	MA	.383	.058	.439	6.578	.000	1.000	1.000
2	(Constant)	2.200	.279		7.888	.000		
	MA	.342	.059	.392	5.750	.000	.929	1.077
	PA	.113	.044	.176	2.582	.011	.929	1.077

Dependent Variable: CE

Note: PA= performance approach; MA= mastery approach; CE= cognitive engagement

The results of the multiple regression as shown in Table 8 revealed that mastery approach with standardized coefficients Beta of .392, *t* of 5.750, p = 0.00 made the strongest significant contribution to the prediction of cognitive engagement. Further, performance approach (β = .176, *t* = 2.582, *p* = 0.011) was ranked as the second significant predictor of cognitive engagement meaning that it made less of a contribution.

DISCUSSION

This study investigated the relationships between cognitive engagement and achievement goals and its subtypes including mastery approach goal, performance-approach goal, mastery avoidance goal, and performance-avoidance goal. Also, the study examined which of these goal types made more contribution to cognitive engagement among EFL learners.

Research studies to date have investigated cognitive engagement and achievement goals in isolation. However, few studies have addressed these two constructs in combination in contexts other than language learning. However, as the first study investigating the relationship between these two constructs in the context of language learning, the results may not be compared with other similar and relevant research.

Overall, the results of the first research question revealed that there was a low positive correlation between cognitive engagement and achievement goals. Also, the relationships between cognitive engagement, mastery approach, and performance approach were found to be positively significant.

Consistent with our results, Meece, Blumenfeld, and Hoyle (1988) found that cognitive engagement is closely associated with learners' goal orientations. They hold that these variables depict the impact of individual and situational factors, thereby reflecting significant measures of learners' motivation in learning. The findings of our study are also in accord with those of previous research (Greene & Miller, 1996; Nolen, 1988) which indicate that learning goals are positively correlated with learners' cognitive engagement. It can be inferred that language learners laying greater emphasis on mastery goals are more actively and cognitively involved in learning tasks. To Meece, Blumenfeld, and Hoyle (1988), learners with greater intrinsic motivation to learn, pay more attention to mastery goals. The low correlation between cognitive engagement and achievement goals might be justified in the light of the domain-general nature of these two constructs in terms of learning English. This finding lends support to the cognitive intervention and central role of language learners in enhancing their learning based on their learning goals and objectives.

Our findings are in accord with those of Martin and Liem (2010), Ramshe et al (2019a), and Yu and Martin (2014) who revealed that language learners' personal best goals are closely associated with cognitive engagement.

The results are in accord with previous studies (e.g., Ames & Archer, 1988; Meece, Blumenfeld, & Hoyle, 1988; Nolen, 1988) in which they revealed that learners focusing more on task-mastery goals are more cognitively engaged in learning activities than those with performance goals. One line of explanation might be that mastery approach is more learning-oriented and demands more effort than performance approach. Likewise, self-regulation as an integral part of cognitive engagement is closely related to mastery approach. That is, learners with mastery goal orientations employ more self-regulatory activities and deep cognitive strategies. Along the same lines, Martin and Liem (2010) hold that learners' self-regulation strategies and personal best goals share identical orientations. Thus, it stands to reason to assume that mastery goals necessitate more self-regulatory strategies on the part of language learners. This could be justified by the fact that mastery goals assist the learner to experience success (Linnenbrink, 2005) by enhancing self-regulatory strategies (Pintrinch, 2000a), and performance goals impact learners' success (Roeser, Eccles, & Sameroff, 2000).

Regarding the significant relationship between cognitive engagement, mastery approach, and performance approach, it should be noted that mastery approach and performance approach compared with mastery avoidance and performance-avoidance are more perceptible and action-centered which implies that they demand more learners' efforts.

Concerning the second research question, the results revealed that mastery approach made the strongest significant contribution to the prediction of cognitive engagement. Further, performance-approach was ranked as the

second significant predictor of cognitive engagement. That is, mastery approach and performance approach explained the bulk of variance in cognitive engagement. This could be justified on the grounds that mastery goals mainly concern learning and are reliant on psychological goals, while performance goals are directed towards self-improvement and self-excellence (Yu & Martin, 2014). When viewed in this manner, it might seem plausible to assume that mastery approach is a stronger predictor of cognitive engagement. In line with our results, Miller, Greene, Montalvo, Ravindran, and Nichols (1996) found that learning goals (mastery and performance) predicted cognitive engagement. Similarly, Sedaghat, Abedin, Hejazi, and Hassanabadi (2011) demonstrated that achievement goals could predict cognitive engagement. However, it should be noted that the focus of their study was not on the subject of learning English and that they did not determine which type(s) of achievement goal precisely explained the variance in cognitive engagement. The results of this study also agree with the ones obtained by Ramshe et al (2019b) who discovered that mastery goals could predict cognitive engagement; however, our results run counter to theirs in that performance goals in their study could not account for a significant amount of variance in cognitive engagement.

One line of explanation for the stronger contribution of mastery goals in predicting cognitive engagement might be that learners' eagerness to improve their understanding and skills subsumed under mastery goals is the main reason for being cognitively engaged in language tasks. Another justification according to Ames and Archer (1988), Meece, Blumenfeld, and Hoyle (1988), and Nolen (1988) might be that learners who undertake instructional tasks to enhance their understanding or skill (i.e., learners with task goals) are more reliant on self-regulatory activities and cognitive strategies than those pursuing performance goals.

Following the findings of this study, mastery avoidance and performance-avoidance could not predict cognitive engagement. It implies that language learners avoiding demonstrations of incompetence are less likely to be cognitively engaged in language learning to enhance a deep understanding of the content.

CONCLUSION

This study revealed that there is a significant positive correlation between cognitive engagement and achievement goals. Also, the relationships between cognitive engagement and mastery approach and performance approach as sub-scales of achievement goals were found to be positively significant. The results also revealed that mastery approach made the strongest significant contribution to the prediction of cognitive engagement. Further, performance approach was ranked as the second significant predictor of cognitive engagement.

In light of the results of this study, EFL teachers should place greater emphasis on performance goals in the classroom. However, performance goals might hinder learning (Roeser, Eccles, & Sameroff, 2000) by encouraging competition, lowering self-confidence, motivation, and the level of engagement (Schunk & Mullen, 2012). For example, they can implement performance assessment to promote mastery goals by making language learners get a better understanding of the content at hand. Extensive use of performance goal orientations in the classroom can make language learners feel at ease, thereby enhancing their learning, language performance, and engagement. EFL teachers are also suggested to pay heed to self-regulatory strategies as building blocks of mastery goals (Pintrich, 2000a), self-confidence, and cognitive engagement. Concerning mastery goals, language learners should be directed towards the intrinsic features of language tasks rather than how they can undertake the task. Language teachers can motivate learners by incorporating fun in the course of the language learning process. They should also commend their language learners for their effort, strategies, and learning goals rather than the outcomes they achieve. Regarding performance goals, EFL teachers

need to encourage language learners to set outcome growth goals.

The results provide support for the interplay of achievement goals and cognitive mediation within models of motivation that highlight the pivotal role of language learners in determining their learning needs and objectives. Taken together, studies on learner engagement particularly cognitive engagement and achievement goals will culminate in raising EFL teachers' awareness of language learners' motivation and self-efficacy. However, as classroom goals are straightforward and in line with learning goals, learners can be more actively engaged in classroom tasks and activities (Velayutham & Aldridge, 2013). To enhance goal setting in the language classroom, EFL teachers and syllabus designers can integrate them into course objectives. This would hold both language learners and teachers accountable.

The integration of an array of learners' goals for involvement in language learning can provide insights into learner motivation in language learning contexts. Learners' achievement goals offer direction and incentives for language learning. Such goals also affect learner involvement in language learning.

The results of this study may carry clear pedagogical implications for EFL teachers, teacher educators, and syllabus designers to employ teaching strategies and materials that raise language learners' motivation in learning and increase language learners' cognitive engagement. When language learners conceive that their capabilities are high, they are more likely to exhibit a more helpful orientation. That is, they seek challenging goals and put in more effort to learn the target language. The other implication is that EFL teachers should assist their learners in setting appropriate learning and achievement goals. In view of the findings of this research regarding achievement goal theory and cognitive engagement commonly researched in mainstream education, EFL teachers and researchers in the field of applied linguistics should be cognizant of advances regarding these constructs in educational psychology.

There are several limitations in the current study which should be acknowledged. The findings, therefore, should be interpreted with caution. The first limitation concerns the sample size of the study. The participants of this study were 183 EFL learners selected from private language institutes. Future research can employ more participants from other language learning contexts, namely high schools or higher education settings. Another limitation is that the data were collected via two self-report questionnaires, responses to which might necessitate high levels of commitment. Thus, mixed-methods approach studies entailing semi-structured interviews or observations are required to shed more light on the findings. Given the space limitation, this study delved into only one dimension of learner engagement i.e., cognitive engagement. Future research can address other aspects of engagement e.g., social, behavioral, and emotional in relation to achievement goals. Finally, since the participants of this study were at advanced proficiency levels, further studies might be conducted on other language learners with different proficiency levels.

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Biodata

Dr. Saeed Ahmadi is an assistant professor and faculty member in the department of foreign languages and linguistics of Islamic Azad University, Bushehr, and Kangan branches. His main research areas include writing assessment, educational psychology, and psycholinguistics. Email: *ahmadi_EFL@yahoo.com*

Dr. Mohammadreza Nasr is a senior lecturer in English language at the National Iranian Oil Company. He maintains an active research interest in educational psychology, educational linguistics, and language assessment. Email: *nasr_mr@yahoo.com*

Appendix A

Goal achievement questionnaire adapted from Elliot and Murayama (2008)

Performance Approach

1. My goal is to perform better than other language learners.
2. I am striving to do well compared to other language learners.
3. My aim is to perform well relative to other language learners.

Mastery Avoidance

4. My aim is to avoid learning less than I possibly could.
5. I am striving to avoid an incomplete understanding of the course material
6. My goal is to avoid learning less than it is possible to learn.

Mastery Approach

7. I want to learn as much as possible from this English class.
8. I am striving to understand the content of this course as thoroughly as possible.
9. My aim is to completely master the material presented in this English class.

Performance Avoidance

10. My aim is to avoid doing worse than other language learners.
11. My goal is to avoid performing poorly compared to others.
12. I am striving to avoid performing worse than others.

Appendix B

Cognitive engagement questionnaire adapted from Gunuc and Kuzu (2015)

1. I motivate myself to learn English.
2. I determine my own English learning goals.
3. I try to do my best during English classes.
4. Besides doing my English lessons, I further study for my lessons.
5. What I learn in English class is important for me.
6. I discuss what I have learned in English class with my friends out of class.
7. I attend English classes by getting prepared in advance.
8. I try to do my English homework in the best way.
9. I enjoy intellectual difficulties I encounter while learning English.
10. I spend enough time and make enough effort to learn English.