



# A Structural Equation Modeling of EFL Learners' Goal Orientation, Metacognitive Awareness, and Self-efficacy

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## Abstract

This article sets out to examine the relationship between EFL learners' goal orientation, metacognitive awareness and self-efficacy in a single framework. One hundred fifteen EFL students from two universities of Mashhad, a city in north-eastern Iran took part in this study. Structural equation modeling (SEM) was utilized to examine the hypothesized relations. The results of SEM demonstrated that among goal orientations, mastery goal is a positive and significant predictor of metacognitive awareness. It also positively and significantly predicts self-efficacy. Furthermore, it was found that metacognitive awareness has a positive and significant role in self-efficacy. The results of correlation between subscales of metacognitive awareness and mastery goal indicated that the highest correlations were found between mastery goal, planning and monitoring. Identical analysis for performance goal revealed that there are significant but weak correlations between performance goal and declarative and procedural knowledge.

**Keywords:** EFL learners, Goal orientation, Metacognitive awareness, Self-efficacy, SEM

## 1. Introduction

Researchers in the field of educational psychology have investigated a number of variables which are influential in academic performance. Three variables that are of particular interest to researchers of the present study are achievement goals, metacognition and self-efficacy. The first variable in this study is goal orientation. VandeWalle (1997) defined goal orientation as a tendency toward developing or displaying ability in achievement situations. More recent research has shown that goal orientation has important implications in training and employment contexts (e.g., Fisher & Ford, 1998; Kozlowski, Gully, Brown, Salas, Smith, & Nason, 2001; VandeWalle, Brown, Cron, & Slocum, 1999; VandeWalle & Cummings, 1997). Studies in the realm of achievement motivation documented the predominance and significance of contributions from goal theory in conceptualizing motivation. Murphy and Alexander (2000) reviewed papers published within five years with regard to terminology employed in research on the relations between motivation and academic achievement. They categorized a corpus of motivational terms and concluded that studies on motivation are focused on various tendencies, one of the most prominent of which is goal approach. In particular, they asserted that the area with the greatest proliferation of categories and subcategories is research on goals and goal orientations. This research presumes that goal orientation has a decisive role in a number of other motivational variables, including self-efficacy, and metacognitive awareness.

In a meta-analysis by Payne and her colleagues (Payne, Youngcourt, & Beaubien, 2007), the goal orientation dimensions were found to be more strongly related to the self-regulatory constructs (i.e., self-efficacy, metacognition, self-regulation, and feedback seeking) than the performance constructs (i.e. academic and organizational performance). In this meta-analysis, self-efficacy was identified as a proximal outcome of goal orientation. Payne and her colleagues found that the learning strategies (metacognition would likely fall into this category) and self-efficacy are the most important proximal consequences of goal orientation followed by feedback seeking, academic outcomes, and organizational outcomes.

Bandura (1982) defined self-efficacy as a belief in one's ability to effectively perform and to exercise influence over events. Individuals who are high in self-efficacy set more difficult goals, exert more effort to achieve those goals, and seek to learn from the processes of pursuing those goals (DeGeest & Brown, 2011).

Metacognition is defined as "an individual's knowledge and control over one's own cognitions" (Schraw & Dennison, 1994, p.460). Individuals high in metacognitive awareness are skilled at monitoring their progress towards goals, identifying their strengths and weaknesses, and adjusting their learning strategies accordingly to achieve favorable outcomes (Flavell, 1979). To justify the present research examining the possible associations among the aforementioned variables within a causal model, this paper begins with a review of the research on goal orientation, self-efficacy and metacognition.

## 2. Research on goal orientation

Achievement goal theory focuses on how students think about themselves, their tasks, and their performance in the classroom. Rather than conceiving of students as lacking or possessing motivation to learn, achievement goal theory focuses on students' perception of educational goals. Researchers have proposed three types of achievement goal orientations: mastery goals, where students pursue their competence by developing and improving their ability against self-set standards; performance-approach goals, where learners are concerned about displaying their ability; and performance avoidance goals, where students' main concern is hiding their lack of ability (Elliot, 2005). Researchers have investigated a number of important ways in which goal orientations relate to students, behaviors and attitudes in the classroom (Brophy, 2004; Pintrich & Schunk, 2002). In general there is a widespread preference for mastery goals among educationalists. Dweck (2000) posited that mastery-oriented learners face challenges and persevere in difficulties. Researchers have consistently indicated that mastery goals are associated with effective and adaptive patterns of learning and achievement (Middleton & Midgley, 1997; Pajares, Britner, & Valiante, 2000). Mastery-oriented students have also been found to be intrinsically motivated and use elaboration strategies, and attain high levels of performance (Elliot & Dweck, 1988). In contrast, performance-avoidance orientation tends to have a negative effect on reaching optimal motivation and learning and is associated with maladaptive learning patterns. However, research on performance orientation demonstrated conflicting results. It is posited that performance-oriented learners are inclined toward playing safe and relinquish in the face of difficulties (Dweck, 2000). It is also contended that performance-oriented students tend to be extrinsically motivated and use superficial learning strategies (Elliot & Dweck, 1988). Elliot and Harackiewicz (1996), on the other hand, noted that the performance-approach orientation has a positive effect on reaching optimal motivation and learning. Wolters and Pintrich (1996) also argued that students adopting a performance-approach goal showed adaptive learning patterns including deep cognitive and regulatory strategies. Nichols (1990) suggested that individuals who believe that ability is defined by effort tend to adopt mastery goals, while those who believe that ability is determined by normative comparison tend to adopt performance goals.

More recent studies pointed out that the different goal orientations do not necessarily need to be treated as opposites but can be seen as complementary. For example, Meece and Holt (1993) found that students could be high in mastery motivation and also high in performance orientation, while others could be low in both dimensions. To indicate how multiple goals interact and jointly influence student learning and achievement, Roebken (2007) studied achievement goals of 2309 college students. He found that students pursuing both mastery and performance goals are more satisfied with their academic experience, show a higher degree of academic engagement, and achieve better grades than students who pursue a mastery orientation alone or a performance-avoidance/performance orientation. In essence, it can be concluded from these studies that the kinds of goals students adopt serve to provide the framework for the challenging motivation and efficiency related behaviors of students that teachers work with on a daily basis.

## 3. Research on Self-efficacy beliefs

Pajares (1992) contended that beliefs play a more decisive role than knowledge in organizing and approaching tasks. Over the past two decades, specific attention has focused on self-efficacy beliefs, that is, an individual's sense of their own capabilities to organize and successfully complete a task. Bandura (1982) defined self-efficacy as a belief in one's ability to effectively perform and to exercise influence over events. According to Bandura (1982), self-efficacy refers to perceptions about one's capabilities to organize and implement actions in specific situations that may contain novel, unpredictable, and possibly stressful features. Self-efficacy is hypothesized to influence a person's choice of activities, effort expenditure, and persistence (Bandura, 1986). People who perceive themselves as less efficacious for learning may avoid task, whereas those who hold high sense of efficacy are more likely to participate. When going through difficulties, student who judge themselves efficacious expend greater effort and persist longer than those who are less sure of their capabilities. Studies have indicated that self-efficacy beliefs correlate positively with academic achievement and motivation (e.g., Pajares & Miller 1994; Bandura 1997; Pajares 2003), thus substantiating Bandura's (1997) contention that learners with higher self-efficacy participate more readily, work harder, pursue more challenging goals, spend more effort toward fulfilling identified goals, and persist longer in the face of difficulty. While students with low self-efficacy display less persistence and effort expenditure avoid uncertain and challenging tasks, lack intentionality, and possess attributions that are nonrealistic and maladaptive.

Bandura (1993) postulated that self-efficacy beliefs regulate functioning through cognitive, motivational, affective and selection processes. The effects of self-efficacy beliefs on cognitive processes take various forms. Bandura's view is that most human behavior is regulated by forethought. With a stronger sense of self-efficacy, an individual will set more challenging goals for themselves. Self-efficacious individuals visualize success, and this provides positive support for performance. Bandura asserted that there is a great difference between possessing knowledge and skills, and being able to use them well.

Regarding motivation, highly self-efficacious individuals set challenging goals, expect their efforts to produce good results, and believe their failure is due to insufficient effort or inadequate strategies rather than lack of ability. Bandura (1997) states that self-efficacy beliefs play a major role in the regulation of motivation and have the benefit of enhancing individuals' confidence in their capabilities.

#### 4. Research on metacognitive awareness

Flavell (1970) defined Metacognition as an individual's knowledge and control over one's own cognitions and also Schraw put it in this way "the ability to reflect upon, understand and control one's learning" (Schraw & Dennison, 1994, p.460). Recent studies indicated that learners who are aware of their metacognition or are metacognitively aware, perform better than unaware learners. Individuals high in metacognitive awareness are skilled at monitoring their progress towards goals, identifying their strengths and weaknesses, and adjusting their learning strategies accordingly to achieve favorable outcomes (Ford, Smith, Weissbein, Gully, & Salas, 1998). There are generally two components of metacognition: knowledge of cognition, and regulation of cognition (Flavell, 1979). Knowledge of cognition measures an awareness of one's strengths weaknesses, knowledge about strategies and why and when to use those strategies. Metacognitive knowledge is about our own cognitive processes and our understanding of how to regulate those processes to maximize learning. Regulation of cognition measures knowledge about planning, implementing, monitoring, and evaluating strategy use. Flavell (1979) classified knowledge of cognition into three subcategories: person, task and strategy knowledge: Person refers to general knowledge which an individual has about human being's cognitive capabilities. Task is the knowledge about the nature of the task. Finally, strategy indicates the knowledge about strategies that may be useful for various tasks and different situations.

Metacognition includes at least three different types of metacognitive awareness when considering metacognitive knowledge (Jacobs & Paris, 1987):

1. **Declarative Knowledge:** refers to knowledge about oneself as a learner and about what factors can influence one's performance (Schraw & Gregory, 1998). Declarative knowledge can also be referred to as "world knowledge" (Schneider & Artelt, 2010).
2. **Procedural Knowledge:** refers to knowledge about doing things. This type of knowledge is displayed as heuristics and strategies (Schraw & Gregory, 1998). A high degree of procedural knowledge can allow individuals to perform tasks more automatically. This is achieved through a large variety of strategies that can be accessed more efficiently (Pressley, Borkowski, & Schneider, 1987).
3. **Conditional knowledge:** refers to knowing when and why to use declarative and procedural knowledge (Garner, 1990). It allows students to allocate their resources when using strategies. This in turn allows the strategies to become more effective (Reynolds, 1992).

Similar to metacognitive knowledge, metacognitive regulation or "regulation of cognition" contains three skills that are essential (Schraw & Gregory, 1998):

1. **Planning:** refers to goal setting and appropriate selection of strategies and the correct allocation of resources that affect task performance before involving in learning.
2. **Monitoring:** refers to one's awareness of comprehension and task performance and the use and strategies while engaging in an activity.
3. **Evaluating:** refers to appraising the final product of a task and the efficiency at which the task was performed. This can include re-evaluating strategies that were used.

Students who demonstrate a wide range of metacognitive skills perform better on exams and complete work more efficiently. They are self-regulated learners who utilize the "right tool for the job" and modify learning strategies and skills based on their awareness of effectiveness. Individuals with a high level of metacognitive knowledge and skill identify blocks to learning as early as possible and change "tools" or strategies to ensure goal attainment. Swanson (1990) found that metacognitive knowledge can compensate for IQ and lack of prior knowledge when comparing fifth and sixth grade students' problem solving. Students with a high-metacognition were reported to have used fewer strategies, but solved problems more effectively than low-metacognition students, regardless of IQ or prior knowledge (Swanson, 1990).

#### 5. Research on the relationship between goal orientation, metacognitive awareness and self-efficacy

The first association studied in the present research is the potential nexus between self-efficacy and goal orientation. Plethora of studies in educational domain pointed out to the influential role of self-efficacy in shaping motivation and academic performance (e.g., Bandura, 1993; Paulsen & Gentry, 1995; Schunk, 1981, 1989; Zimmerman, 2000). Goal orientation is another motivational factor that has a significant impact on student learning outcomes. Bandura (1993) argued that motivation involves cognitive comparison processes and these processes are produced based on the goals students set for their learning.

When students set challenging goals for themselves that are specific and proximal in time, they can perceive their learning progress more readily, and this self-satisfaction in performance accomplishments in turn, enhances their self-efficacy. Students with increased self-efficacy are likely to set even more challenging ultimate goals for themselves.

Therefore, Schunk (1990) contended that there exists a reciprocal relationship between students' goal orientation and their perceived efficacy. Zimmerman, Bandura, and Martinez Pons's (1992) study on the role of self-efficacy beliefs and personal goal setting also revealed that the high sense of efficacy not only enables learners to set challenging goals for themselves but also influences their commitment to fulfill these challenges. Previous empirical studies have also corroborated a positive relationship between the types of goals individuals adopt for learning and their sense of efficacy beliefs (e.g., Jackson, 2002; Pajares, 2003). These studies indicated that individuals who adopt mastery goals tend to have higher self-efficacy than those who have performance-goal orientation or performance-avoidance orientation. According to Dweck and Leggett (1988), students who adopt a learning or mastery orientation promote the perceptions of self-confidence (self-efficacy) and success in their courses. Bradford and Kozlowski's (2002) study supported the adaptive nature of mastery orientation and its positive relationship with the perceived self-efficacy of undergraduate college students. In a similar vein, Hsieh, Sullivan and Guerra (2007) found interplay between students' self-efficacy and the adoption of mastery goals among students in good academic standing (GPA of higher than 2.0). The results also indicated that self-efficacy exerts a stronger positive influence on achievement in the absence of performance-avoidance goal orientation. The opposite was found for students on academic probation (GPA of less than 2.0). Students with higher self-efficacy endorsed performance-avoidance goals more strongly than those with lower self-efficacy.

Metacognitive awareness which is defined as how to organize, monitor, evaluate, and regulate one's thinking processes and also metacognitive skills are important as well (Bandura, 1997). However, possessing the necessary cognitive and metacognitive skills is only part of the story. Individuals also need a sense of efficacy allowing them to employ these strategies consistently, persistently and skillfully, especially when they encounter difficulties in the processes of learning and deficient performances bring negative consequences. Bandura (1997) made a comparison between students holding a high sense of self-efficacy and those with lower self-efficacy. He found that when good results are hard to come by, people with a high sense of efficacy keep up strategic thinking in the search for optimal solutions. By contrast, those students with a weak sense of efficacy usually end up directing their efforts and ineffectively. According to Bandura (1997), successful performance is often the joint product of appropriate capabilities and a high sense of efficacy. So, it can plausibly be concluded that an awareness of metacognitive skills and processes is associated with one's sense of self-efficacy beliefs.

The relationship between goal-orientation and cognitive and metacognitive strategies has also been explored by a number of researchers in the domain of general education. Pintrich and DeGroot (1990) found that the learners who select mastery goal orientations show higher levels of cognitive and metacognitive strategies than those who focus on proving their abilities to others or avoiding the perception of incompetence. Similarly, Kharazi, Ezhehei, Ghazi Tabatabaei, and Kareshki (2008), in a study on 685 third grade high school students in Tehran, reported mutual significant correlations between achievement goals and metacognitive strategies components. In another study, Ford, Smith, Weissbein, Gully, and Salas (1998) linked learning goal orientation and metacognitive activity and found that metacognitive activity was significantly related to knowledge acquisition, post-training performance, and self-efficacy. In a study by Schmidt and Ford (2003), metacognitive activity was positively related to learning goal orientation as well as cognitive, affective, and skill based learning outcomes. Similarly, Bell and Kozlowski (2002) found that learning goal orientation was significantly related to metacognitive activity.

In the present study, these variables are studied within a single framework to examine the interrelationship among these constructs. This area of research was selected because, as mentioned earlier, each of these constructs have significant role in successful learning and in student's achievement (e.g., Bandura, 1997; Ames, 1992; Dweck, 1986; Harackiewicz, Barron, & Elliot, 1998; Schraw, 1994). Furthermore, to the researcher's best knowledge, no documented study to date investigated the association of these constructs in an EFL context.

## **6. Purpose of the study**

The main purpose of this study is to investigate the relationship between three factors conducive to effective learning, i.e., goal orientation, meta-cognitive awareness and self-efficacy of EFL learners. Figure 1 illustrates our hypothesized model. Standard equation modeling (SEM) was selected to study the casual relations. In our proposed model, the role of achievement goal-orientations in the other two variables is examined.

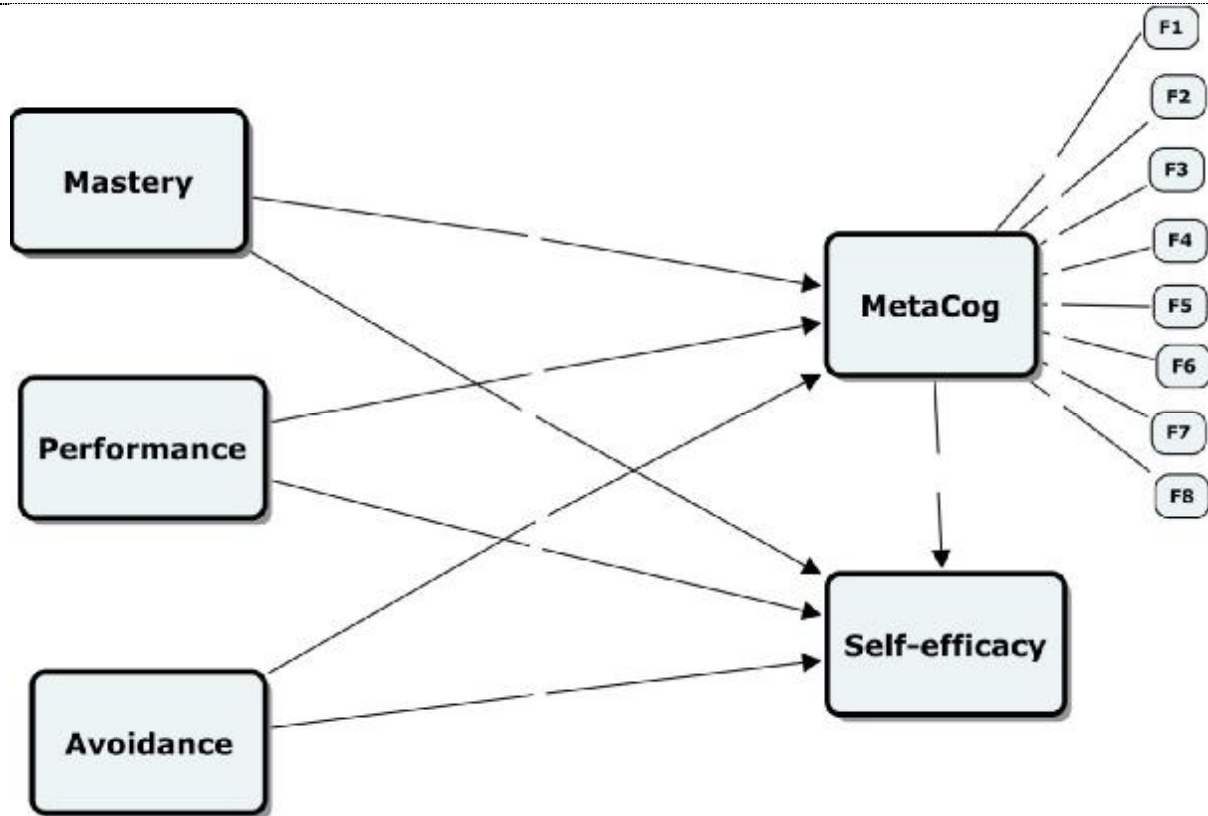


Figure 1. The hypothetical model of goal orientation, metacognitive awareness, and self-efficacy.

As indicated in the figure, three goal orientations were assessed: mastery, performance, and avoidance goal orientations. The influence of each of these goals on EFL learners' metacognitive awareness as well as language learning self-efficacy was studied. In this study, the effect of metacognitive awareness on self-efficacy was also hypothesized. Metacognitive awareness as measured in the present study comprises eight subscales as follows: F1: declarative knowledge, F2: procedural knowledge, F3: conditional knowledge, F4: planning, F5: information management skills, F6: monitoring, F7: debugging, F8: evaluation. The arrows indicate the direction of relationship.

To this end, the following research questions were formulated:

1. Is there any significant relationship between Iranian EFL learners' metacognitive awareness and goal orientation?
2. Is there any significant relationship between Iranian EFL learners' self-efficacy and goal orientation?
3. Is there any significant relationship between Iranian EFL learners' self-efficacy and metacognitive awareness?

## 7. Method

### 7.1 Participants

The participants of this study consisted of 115 junior BA and MA Iranian university students studying TEFL (teaching English as a foreign language). The sample is heterogeneous regarding factors like age and gender and the students were selected from universities in Mashhad, Iran. Stratified random sampling was used in order to come up with representative sample.

### 7.2 Instrumentation

#### 7.2.1 Metacognitive Awareness Inventory

The metacognitive awareness inventory used in this study was adapted from Schraw and Dennison (1994). It includes 52 statements investigating two categories of metacognition; knowledge of cognition and regulation of cognition with their subcomponents. Items are mixed and not divided into these categories (Schraw, 1998). All items are true or false. The inventory showed a satisfactory reliability coefficient of 0.88. Numbers of statements dealing with each category are shown in Table 1.

Operational definitions of component categories of this inventory are presented below:

#### *Knowledge of Cognition*

1. Declarative knowledge: knowledge about one's skills, intellectual resources, and abilities as a learner.
2. Procedural knowledge: knowledge about *how* to implement learning procedures (e.g., strategies).
3. Conditional knowledge: knowledge about *when* and *why* to use learning procedures.

*Regulation of Cognition*

1. Planning: planning, goal setting, and allocating resources *prior* to learning.
2. Information management: skills and strategy sequences used on-line to process information more efficiently (e.g., organizing, elaborating, summarizing, selective focusing).
3. Monitoring: assessment of one's learning or strategy use.
4. Debugging: strategies used to correct comprehension and performance errors.
5. Evaluation: analysis of performance and strategy effectiveness after a learning episode. (Schraw & Dennison, p.474)

Through the process of inventory development, three experiments were carried out in order to investigate these three hypotheses; first whether current conceptualizations of metacognition appear to be valid, second issues was the statistical relationship between knowledge and regulation of cognition and the last one addressed the convergent validity of the instrument by comparing the relationship between knowledge and regulation of cognition (Schraw & Dennison, 1994, p.461).

Table 1. The Comprising Factors of Metacognitive Awareness Inventory

Factors	Statements in the Inventory	Number of Items
<i>Declarative Knowledge</i>	5, 10, 12, 17, 17, 20, 32, and 46	8
<i>Procedural Knowledge</i>	3, 14, 27, and 33	4
<i>Conditional Knowledge</i>	15, 18, 26, 29, and 35	5
<i>Planning</i>	4, 6, 8, 22, 23, 42, and 45	7
<i>Information Management Strategies</i>	9, 13, 30, 31, 37, 39, 41, 43, 47, and 48	10
<i>Monitoring</i>	1, 2, 11, 21, 28, 34, and 49	7
<i>Debugging Strategies</i>	25, 40, 44, 51, and 52	5
<i>Evaluation</i>	7, 19, 24, 36, 38, and 50	6

## 7.2.2 Achievement Goal Orientation Inventory

Students' goal orientation was measured by the translated version of *Achievement Goal Orientation Inventory* designed by Midgley et al. (1998). The inventory comprises three subscales, 6 items for each goal orientation and a total of 18 items, and it allows responses ranging from 1 (not at all true of me) to 7 (very true of me). It represents three possible goal orientations as follows:

Table 2. Subscales of the AGOI along with the corresponding descriptions

Subscale	Definition	Alpha	Items
<i>Mastery-approach</i>	Attaining task-based or intrapersonal competence	.85	1-6
<i>Performance-approach</i>	Attaining normative competence	.89	7-12
<i>Performance-avoidance</i>	Avoiding normative incompetence	.74	13-18

The Persian version of the scale– translated and validated by Rezaee and Kareshki (2012)–demonstrated acceptable reliability indices (.81, .89, .83, respectively). The results of confirmatory factor analysis confirmed the validity of the translated version (GFI= .92, AGFI= .88, RMSEA=.07).

## 7.2.3 Learners' Self- Efficacy Survey

To assess the EFL learners' level of self-efficacy, "Learners' Self- Efficacy Survey" was employed. This questionnaire was designed and standardized by Gahungu (2009). As Gahungu stated the questionnaire operationalizes the self-efficacy construct via scores obtained on 40 items ranging from never to always. To estimate the reliability of the "Self-Efficacy Survey", the Kurder-Richardson 21 reliability was computed and the result was .97.

## 8. Results

Table 2 presents descriptive statistics of EFL learners' goal-orientation, metacognitive awareness, and self-efficacy.

Table 2. Descriptive Statistics of Goal-orientation, Metacognitive Awareness, and Self-efficacy

	N	Minimum	Maximum	Mean	Std. Deviation
<b>Mastery</b>	115	7.00	42.00	32.9391	6.86114
<b>Performance</b>	115	15.00	42.00	34.3652	5.90321
<b>Avoidance</b>	115	10.00	42.00	31.2783	7.01446
<b>Metacognitive</b>	115	12.00	52.00	40.0261	8.01256
<b>Efficacy</b>	115	40.00	160.00	1.0979E2	26.24396
<b>Valid N (listwise)</b>	115				

To examine the structural relations, the proposed model was tested using the LISREL 8.50 statistical package. A number of fit indices were examined to evaluate the model fit: the chi-square magnitude which shouldn't be significant, the normed fit index (NFI) and the comparative fit index (CFI) with the cut value greater than .95, and the Root Mean Square Error of Approximation (RMSEA) of about .06 or .07 (Schreiber, et al., 2006). The acceptable criteria for fit indices are presented in Table 3.

Table 3. Acceptable Criteria for Fit Indices

Chi-square $\chi^2$	Not significant
Chi-square/df ratio	$\leq 2$ or 3
RMSEA	$< .06$ or $.08$
CFI	$\geq .90\%$ or $95\%$
NFI	$\geq .90\%$ or $95\%$

As demonstrated by Figure 2, the chi-square value (146.57), the chi-square/df ratio (2.51), reached the acceptable fit thresholds. The RMSEA is .101 which is slightly higher the acceptable criterion. The other two fit indices (GFI=.83 and NFI=.78) did not meet the acceptable fit thresholds but are slightly below those thresholds. According to Tseng, D'orneyi, and Schmitt (2006), in SEM it is normal for some indices to not conform to the majority trend (as cited in Ghanizadeh & Ghonsooly, 2014). Overall, it can be concluded that the proposed model had a moderately good fit with the empirical data.

To check the strengths of the causal relationships among the variables, the  $t$ -values and standardized estimates were examined. As indicated in Figure 2, two estimates were displayed on the paths. The first one is the standardized coefficient ( $\beta$ ) which explains the predictive power of the independent variable and presents an easily grasped picture of effect size. The closer the magnitude to 1.0, the higher the correlation and the greater the predictive power of the variable is. The second measure is the  $t$ -value ( $t$ ); if  $t > 2$  or  $t < -2$ , we call the result statistically significant.

The results demonstrated that among goal orientations, mastery goal is a positive and significant predictor of metacognitive awareness ( $\beta = .53$ ,  $t = 5.04$ ). It also positively and significantly predicts self-efficacy ( $\beta = .32$ ,  $t = 2.85$ ). The other two goal orientations (performance and avoidance) are negatively associated with both metacognitive and efficacy. Their magnitudes, nevertheless, are not strong enough to reach significant levels and therefore do not warrant any significant impact. It was also found that metacognitive awareness has a positive and significant role in self-efficacy ( $\beta = .43$ ,  $t = 3.72$ ).

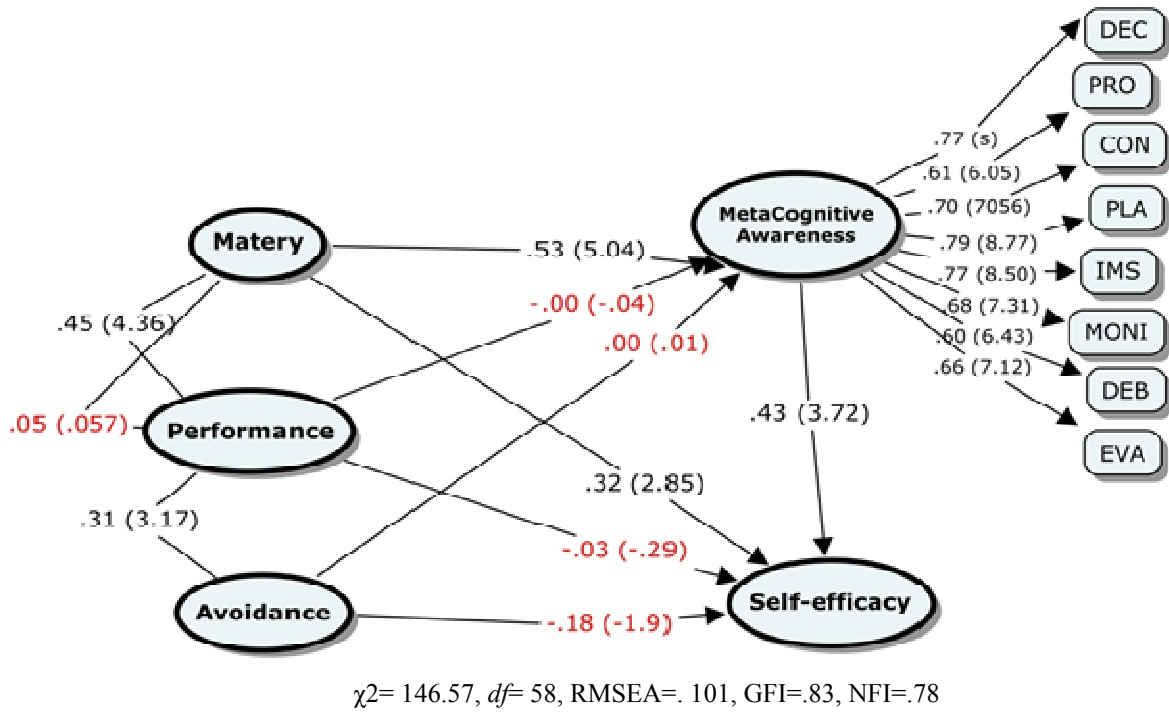


Figure 2. The schematic representation of the relationships among goal orientation (mastery, performance, avoidance), metacognitive awareness, and self-efficacy

The correlation coefficients among goal orientations, metacognitive awareness, and self-efficacy are presented in Table 4. As it can be seen, the highest correlation is observed between metacognitive awareness and mastery goal ( $r = 0.523, p < 0.05$ ). The second higher correlation was found between metacognitive and self-efficacy  $r = 0.489, p < 0.05$ . The third higher correlation was obtained between self-efficacy and mastery goal  $r = 0.405, p < 0.05$ . It was also found that performance and avoidance goals did not correlate with self-efficacy while performance goals significantly but weakly correlate with metacognitive awareness.

Table 4. The Correlation Coefficients among Goal-orientation, Metacognitive Awareness, and Self-efficacy

	1	2	3	4	5
<b>1. Mastery</b>	1.00				
<b>2. Performance</b>	.447**	1.00			
<b>3. Avoidance</b>	.053	.311**	1.00		
<b>4. MetaCog</b>	.523**	.235**	.044	1.00	
<b>5. Self-efficacy</b>	.405**	.090	-.190*	.489**	1.00

\*\*Correlation is significant at the level of 0.05

The present study also aimed at exploring the possible association between goal-orientation and the subscales of metacognitive awareness. According to Ghanizadeh and Ghonsooly (2014), SPSS should be run to investigate the relationships between goal-orientation and the eight components of metacognitive awareness given that LISREL is not capable of estimating the relationships between exogenous variables and the observed components of the endogenous variables. The results for mastery goal are displayed in Table 5. As it can be seen, the highest correlations were found between mastery goal and planning ( $r = 0.496, p < 0.05$ ) and mastery goal and monitoring ( $r = 0.426, p < 0.05$ ).

Table 5. The Results of Correlation between Subscales of Metacognitive Awareness and Mastery

	Mastery
<b>1. Declarative Knowledge</b>	0.385**
<b>2. Procedural Knowledge</b>	0.370**
<b>3. Conditional Knowledge</b>	0.314**
<b>4. Planning</b>	0.496**
<b>5. Information Management Skills</b>	0.399**
<b>6. Monitoring</b>	0.426**
<b>7. Debugging</b>	0.208*
<b>8. Evaluation</b>	0.336**

\*\*Correlation is significant at the level of 0.05

Identical analysis was performed for performance goal and metacognitive analysis. The results are presented in Table 6. As the table demonstrates, performance goal correlates significantly but weakly with only two subscales of



metacognitive awareness as follows: performance and declarative knowledge ( $r = 0.245, p < 0.05$ ), performance and procedural knowledge ( $r = 0.315, p < 0.05$ ).

Table 6. The Results of Correlation between Subscales of Metacognitive Awareness and Performance

	Performance
<b>1. Declarative Knowledge</b>	0.245**
<b>2. Procedural Knowledge</b>	0.315**
<b>3. Conditional Knowledge</b>	0.097
<b>4. Planning</b>	0.128
<b>5. Information Management Skills</b>	0.218*
<b>6. Monitoring</b>	0.144
<b>7. Debugging</b>	0.209*
<b>8. Evaluation</b>	0.110

\*\*Correlation is significant at the level of 0.05

## 9. Discussion

The present study investigated the relationships between goal orientation, metacognitive awareness and self-efficacy. The results demonstrated that among three types of goal orientation; mastery has significant effect on metacognitive awareness and the highest correlation is observed between metacognitive awareness and mastery goal. The other two goal orientations (performance and avoidance) were negatively associated with both metacognitive and efficacy. A positive relationship between mastery goals and metacognition has been established in previous research (Ame, 1992; Dweck & Legett, 1988). Students with mastery goals are more likely to have good metacognition, and thereby, be better learners than students with performance goals. Students with performance goals may not enjoy the fruit of academic success even though they strive to perform well. Students should be encouraged to adopt a mastery approach to learning. Students who tend to be driven by performance goals may benefit from training related to mastery goals and metacognition. In a similar vein, Pintrich and DeGroot (1990) found that the learners with mastery goal orientations exhibit higher levels of cognitive and metacognitive strategies than those who focus on proving their abilities to others or avoiding the perception of incompetence. The finding of the present study is also in line with a research conducted by Ford, et al (1998) which linked learning goal orientation and metacognitive activity.

The results of the second research question revealed the effect of mastery goal on self-efficacy and it showed among goal orientations, mastery goal is also positively and significantly predicts self-efficacy. It was also found that performance and avoidance goals did not correlate with self-efficacy while performance goals significantly but weakly correlate with metacognitive awareness. This finding can be explained in the light of comprising sources of self-efficacy. The most effective way of developing a strong sense of efficacy is through mastery experiences, as proposed by Bandura. Performing a task successfully strengthens our sense of self-efficacy. However, failing to adequately deal with a task or challenge can undermine and weaken self-efficacy. Self-efficacy and mastery goals involve the use of cognitive strategies, such as personal judgments of capabilities, assessment of what is required (Bandura, 1993), and using learning strategies that promote comprehension (Al-Harthy, Was, & Isaacson, 2010; Elliot, 1999). This finding is also consistent with previous research attesting to the role of EFL teachers' commitment to developing mastery of teaching practice in predicting their self-efficacy (Ghonsooly & Ghanizadeh, 2013).

Another studied association in the model was between self-efficacy and metacognitive awareness. It was revealed that metacognitive awareness has a positive and significant role in self-efficacy, which means that promoting metacognitive awareness may enhance student self-efficacy. In the process of learning, if teachers design tasks to help the students increase their self-efficacy and metacognitive awareness, this increase might have positive effect on their academic performance. In other words, students' with high sense of self-efficacy are likely to have high metacognitive awareness. This result is somehow in line with the findings of Savia (2008) who found that the relationship between metacognitive awareness and performance was deeply influenced by self-efficacy. This means that learners with reasonable metacognitive awareness also have strong belief in their own capabilities to successfully undertaking a task. This finding was in line with the findings obtained by Coutinho, 2007; Kruger & Dunning, 1999; Multon, Brown, & Lent, 1991. Their studies in self-efficacy and metacognitive awareness have already shown that both self-efficacy and metacognitive awareness are essential to successful learning. Students should be persuaded to analyze and inspect their own learning processes to improve their degree of metacognitive awareness, which may reinforce their sense of self-efficacy. Sinclair (2000) suggested that when there is not an explicit awareness of the processes involved in learning, learners will not be able to make informed decisions about their own learning. When learners believe in their abilities to perform tasks, they would create deeper interest in learning and developing their confidence in order to overcome difficulties of learning. Highly self-efficacious learners also exhibit higher engagement in the classroom and better academic performance. Accordingly, instructors should improve the sense of self-efficacy in their students which would be beneficial to their achievement. Cotterall (1999) has stated that it is crucial to provide teachers with a means of identifying and supporting individual learners who need to develop their sense of self-efficacy. If this can be done before they engage in learning tasks, the ensuing intervention in their language learning experience should result in superior performance. The findings of the present study corroborates Ghonsooly and Ghanizadeh's (2013) study in an

EFL context highlighting the contributing role of metacognitively oriented skills such as self-regulation in promoting EFL teachers' sense of efficacy beliefs.

Also, among the components of metacognitive awareness, planning and monitoring were found to have the highest correlations with mastery goal. Planning involves "the selection of appropriate strategies and allocation of resources that affect one's learning performance" (Schraw & Moshman, 1995, p.354). The skills referable to planning are setting goals, selecting appropriate strategies and scheduling time and strategies. Monitoring, instead is, "one's on awareness comprehension and task performance" (Schraw & Moshman 1995, p.355). Mastery contributes to learning, in other words, mastery is learning. Pintrich and DeGroot (1990) indicated that individuals who have clearly identified goals and monitor their own learning process try to acquire knowledge to learn and increase their competence for self - development and believe that effort is the cause of success or failure. These individuals were also found to take more responsibility for their success or failure (Seifert, 1995).

## 10. Conclusions

To sum up, the findings of the present study highlighted the contributing role of developing mastery goals in enhancing EFL students' sense of self-efficacy beliefs as well as their metacognitive awareness. In other words, the more students endeavor to attain task-based or intrapersonal competence, the more confidence they will have in their capabilities and the more capable they will be in monitoring their progress towards goals, identifying their strengths and weaknesses, and adjusting their learning strategies. Hence, the teachers' duties are to lead students to adopt mastery goal that results in successful learning not only for obtaining score in a specific course of study but also for raising their confidence and their metacognitive abilities. These research findings may also encourage teaching techniques that present information to students in a way that encourages the use of mastery goals and metacognitive strategies. Furthermore, the present research demonstrated the unique contribution of adopting mastery goals in developing two elements of regulation of cognition, i.e., planning and monitoring. In particular, it implies implementing mastery goals triggers students to set goals for themselves, select appropriate strategies, plan courses of actions required for attaining their goals, monitor their comprehension and use of strategies while engaging in an activity.

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