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Self-Regulation, Goal Orientation, Tolerance of Ambiguity and Autonomy as Predictors of Iranian EFL learners' Second Language Achievement: A Structural Equation Modeling Approach

Mohammad Ahmadi Safa*, Matin Sadat Mirebrahim
English Department, Bu-Ali Sina University, Hamedan, Iran

Abstract

The identification of the cognitive, affective, social and even physiological factors affecting second or foreign language learning routes and rate has for long been a challenging aspiration for second language researchers. However, a recent preoccupation of the researchers in this area has been the study of the combinatorial impacts of such factors on second or foreign language learning processes and products. As a partial undertaking in this regard, this study investigated the relations pattern among some psychological and cognitive variables and foreign language learning achievement rate. The studied factors were self-regulation, goal-orientation, tolerance of ambiguity, and autonomy on the one hand and English as Foreign Language (EFL) learners' ultimate achievement on the other hand. To this end, 250 Iranian BA level EFL students majoring English literature or English translation were selected based on convenience sampling procedure. Next, having obtained the participants' informed consent to participate in the study, the researchers administered Trait Self-Regulation Questionnaire (TSRQ), Goal Orientation, Tolerance of Ambiguity, and Learner Autonomy scales to them. In addition, concerning their L2 achievement rate measure, their BA level general English courses' GPA was obtained from the education office of the related universities. The data were statistically analyzed and the hypothetical model of interrelations among the given variables was tested using Structural Equation Modeling procedures. The results indicated that goal orientation and self-regulation significantly predicted L2 achievement; however, tolerance of ambiguity and learner autonomy were not found as strong predictors of L2 achievement. On the other hand, while self-regulation strongly predicted goal orientation, it was not verified to be a strong predictor of tolerance of ambiguity. The results also showed that goal orientation could strongly predict learner autonomy. A ready-made implication of the findings might be that the combinatorial effects of the psychological variables on cognitive processes like second language learning is quite complicated and different from the effects of each individual variable.

Keywords: Self-regulation, Goal-orientation, Tolerance of ambiguity, Autonomy, L2 achievement, Correlational analysis

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Corresponding author: English Department, Humanities Faculty, Bu-Ali Sina University, Hamedan Email: m.ahmadisafa@basu.ac.ir

1. Introduction

The study of second language (L2) learning processes has been both of a theoretical concern and an empirical aspiration for the researchers and practitioners in applied linguistics and second or foreign language pedagogy respectively due to the fact that a wide range and number of factors are theoretically believed to affect such complicated processes. From a theoretical standpoint, Larsen-Freeman (2007, p.35) so underscores the complexity of the process stating that "second language learning process is more complex, gradual, nonlinear, dynamic, social, and variable than had been recognized" and even a relative mastery over this process is a real challenge.

From an empirical standpoint, many studies have confirmed that L2 learning processes are affected by various types of cognitive, affective, psychological, personality and sociocultural factors (for examples, Dörnyei, 2005; Karbakhsh & Ahmadi Safa, 2020; Larsen-Freeman, 2015; Onwuegbuzie, 2004). Larsen-Freeman (2015) points to personality traits as the factors which can affect language learning and achievement directly. Dörnyei (2005, p. 4), on the other hand, generally refers to individual differences as influential factors in language learning process and defines them as "enduring personal characteristics that are assumed to apply to everybody and on which people differ by degree". Onwuegbuzie (2004) also points to affective, cognitive, and personality variables that have impacts on the learners' language learning route and rate. Karbakhsh and Ahmadi Safa (2020) finally confirmed the interplay of psychological and cognitive factors and L2 achievement concluding that L2 achievement was predicted directly by goal orientation, self-efficacy, and learning strategy use. They also confirmed that basic psychological needs satisfaction did not directly predict L2 achievement, though it was indirectly associated with L2 achievement through goal orientation.

Given the stated theoretical obsessions, the attested complexities and the empirical aspirations, researchers have been strongly propelled towards maximal identification and study of the factors affecting language learning processes and products on the grounds that any attempt to decode the complexities of language learning enables researchers to determine which one of the variables facilitates the learning process and which one might hinder it (Baeten et al., 2010) both of which might finally lead to developments in second or foreign language pedagogy.

It needs to be confirmed that depending on the scope and the objectives of the abovementioned studies, they have been able to name a number of different influential factor types in L2 development; however, the study of the combinatorial impacts of the interplay of such wide range of factors which might lead to baffling complexity of the process is yet a new undertaking for the researchers. Against such a backdrop, in an attempt to partially explore the integrated impacts of some of such personality, cognitive and affective variables, this study adopted a path analytic approach in its investigation of the relations pattern among self-regulation, goal orientation, tolerance of ambiguity, and learner autonomy on the one hand and the Iranian EFL learners' second language ultimate achievement rate on the other hand.

2. Review of Literature

A concise integrative account of the theoretical underpinnings and recent empirical findings of the study variables is expected to make the body of this brief part; however, due to the fact that as a multivariate piece of work the study is focusing on multiple rather distinctive psychological and cognitive variables, with an eye to achieve maximum readability and coherence the authors opted for a terse theoretical description of each individual study variable followed by a brief account of the most relevant empirical findings of the studies on the given variable.

- *Self-Regulation*

As Zimmerman and Schunk (1989) put it, self-regulated learning owes its orgion to the belief that holds each person responsible for his own education. Gardner (1963) maintains that the ultimate purpose of education system is to transfer the burden of pursing one's own education to the individual himself. Such a shift of responsibility is welcome by the theoreticians and educational experts on the grounds that they believe those learners who control their own learning are the ones who achieve better outcomes (Bauer & Baumeister, 2011; Zimmerman & Cleary, 2009).

For Zimmerman (2002, p.65) "self-regulation is not a mental ability or an academic performance skill; rather, it is the self-directive process by which learners transform their mental abilities into academic skills". This view entails that learning is a productive process for the learners and does not happen accidentally (Zimmerman, 2000). On this basis, self-regulation is defined as "self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals" (p.14); further, its cyclical character indicates that during this process, learners' personal, behavioral, and environmental factors undergo some changes and it is the learner himself/herself who controls and monitors the changes.

On the basis of his social cognitive perspective, Zimmerman (2000) discussed three phases of self-regulation including "forethought and planning", "performance monitoring", and "reflections on performance". In the first phase, the process of self-regulation is initiated and as its name reveals, it is the level in which learners start to plan and specify their goals, values, and beliefs. The analysis of the task and the development of self-motivational beliefs are two componential steps of the first phase. In the second phase, the learner starts monitoring his own performance and motivation and attempts to control both (Wigfield et al., 2011). Zimmerman (2000) states that self-control and self-observation are two typical performances in this phase. After the completion of the second phase, the last phase begins when the learners try to analyze the outcomes of

their performances and evaluate them. Self- judgment and self-reactions are typical elements of the last phase (Zimmerman, 2000).

Boekaerts (2011, p. 411) maintains that self-regulation contributes to the acheivement of three types of purposes by the learners: "(a) expanding knowledge and skills, (b) preventing threat to the self and loss of resources so that one's well-being is kept within reasonable bounds, (c) protecting one's commitments by using activities that re-route attention from the well-being pathway to the mastery pathway". He called the first purpose as "top-down self-regulation" as the learners follow their own aims according to their needs and goals. They seek improvement and progress in their own learning and hence define short-term or long-term purposes for the achievement of which they voluntarily try hard to change.

Boekaerts (2011) believes that the second type of purposes are achieved through "buttom-up self-regulation". Bottom up self-regulation happens when the learner feels a mismatch between his learning goal and the present learning conditions, therefore, he tries to nulify the negative obstructive factors and thoughts in his learning process. Finally, in Boekaerts' terms, the third purpose occurs when the learners seek to redirect their strategies from the well-being to the mastery/growth pathway, which may happen through external or internal forces.

Empirical studies have explored different aspects of self-regulation. Tsuda and Nakata (2013) for instance studied the role of self-regulation in Japanese high school EFL students' language learning and concluded that self-regulated learning helps learners to find their personal learning strategies and learning motivation sources. Moreover, it provides them with a chance to become autonomous learners. The results verified metacognition, cognitive strategies, self-efficacy, self-motivation and WTC, and intrinsic values as the most effective factors of self-regulation.

The relationship between Chinese university students' conceptions of language learning and their online self-regulation was also studied by Zheng et al. (2016, p.75). The results indicated that those learners "who perceived learning English as achieving true understanding and getting a new perspective would be more likely to perform well in online self-regulation".

In a case study, Tilfarlioglu and Delbesoglugil, (2014) studied academic success through the lenses of self-regulation, self-esteem and attitude to foreign language learning. The results indicated a positive relationship among self-regulation and language learning, self-esteem and language learning, and attitude and language learning. Furthermore, the aggregate of three variables was shown to have positive relationship with language learning.

As an exemplar study carried out in the context of the present study, Mirhassani et al., (2007) explored the relationship between Iranian EFL learners 'goal-oriented and self-regulated learning and their language proficiency and reported that there was significant relationship between goal-orientation and language proficiency. Also, significant relationship was found between self-regulated learning and language proficiency.

Embarking on a Rasch analysis, Liu and Lee (2015) attempted to measure self-regulation in second language learning process and verified that the relationship between self-regulation and second language learning was not unidimensional and reported that the learners who had better understanding of their own self-regulatory capacity, were more successful in monitoring and evaluating their language learning processes.

Adopting a rather different analytical approach than the previously reviewed studies, Kormos and Csizer (2014) used Structural Equation Modeling (SEM) to test a hypothetical model of interaction among motivation, self-regulatory strategies, and autonomous learning behavior in different language learner groups and

concluded that the motivational factors affect autonomous learning by the mediating role of self-regulation strategies.

In a more recent study, Wang et al., (2020) studied how and when goal-oriented self-regulation improves college students' well-being and academic performance and concluded that goal-oriented self-regulation behaviors (i.e., planning, monitoring, controlling, and reflecting) were positively related to college students' psychological wellbeing through increased academic performance.

Finally inspired by the heated discussion on self-regulation and language learning strategies in recent years, Teng and Zhang (2021) in a critical review of how self-regulation has been applied to second/foreign language learning and teaching in the past 15 years concluded "that self-regulation principles, measurements, and practices have a solid ground for enriching second/foreign language learning and teaching, and thus offer a complex and broad range of research possibilities.

- *Goal orientation*

Goal orientation is defined as "a future-focused cognitive representation that guides behavior to a competence-related end state that the individual is committed to either approach or avoid" (Hulleman et al., 2010, p.423). Duncan and McKeachie (2005) consider goal-orientation as one of the constituents of motivational self-regulated learning. Ames (1992, p.261) defined goal orientation as "an integrated pattern of beliefs, attributions, and affect that produces the intentions of behavior represented by different ways of approaching, engaging in, and responding to achievement-type activities".

Goal orientations are classified in different conceptualizations and categories (see for example, Elliot & McGregor, 2001). Cumming (2006) for instance dubbed a class of such orientations as acheivemnet goals and

explicated two subclasses for them: Mastery goal orientation and performance goal orientation. The first one is of the learner who desires to enhance his level of knowledge and mastery, but the second is of those who try to show their knowledge and ability to others. Learners with mastery goal orientation want to improve their abilities, develop their proficiency, comprehend their learning processes and feel mastery during their learning. On the other hand, those learners with performance goals want to exceed others and achieve success without trying hard (Watkins et al., 2002).

Elliot and McGregor (2001) also proposed a two by two framework introducing mastery-approach, mastery- avoidance, performance-approach, and performance-avoidance goals. They explained that performance approach goal orientation displays a superior skill related to others. Studies focuing on different aspects of goal orientation and its relation pattern with second language acheivement rate have not been unequivocal in their results. Hulleman et al. (2010) indicated that mastery goal orientation leads to completely positive result but performance goal orientation may bring about both positive and negative effects on second language learners' achievement. On the other hand, Roebken (2007) focused on the relationship between multiple goals and university students' academic outcomes and indicated that students with both mastery and performance goals were more motivated. They also outperformed those with only mastery or performance goal orientation.

Kitsantas et al. (2017) analyzed the role of self-regulated strategies and goal orientation in predicting elementary school children's achievement. The results showed the positive effect of students' prior achievements and use of self-regulation strategies on their achievement while goal orientation was not found to be a strong predictor of their academic achievements. Rather contradictory results were reported by Phan (2009) who investigated the correlation among deep processing strategies, effort, mastery and performance approach goals, reflection, and critical thinking with students' academic learning and achievement. The results

indicated that performance-approach goals had a negative relation with academic achievement, and reflection and critical thinking had positive correlation with academic achievement and learning.

In the context of the present study, Sadeghi et al. (2020) also explored the relationship between Iranian EFL learners' language mindset with their goal orientation and responses to failure and verified a direct link between fixed and growth mindsets and goal orientation. Finally, Karbakhsh and Ahmadi Safa (2020) investigated the direct and indirect interrelationships among Iranian EFL learners' basic psychological needs satisfaction, goal-orientation, willingness to communicate, learning strategy use, self-efficacy and second language achievement through a path analytic research design. The findings verified that L2 achievement was predicted by goal orientation, self-efficacy, and learning strategy use. Moreover, while L2 achievement was not directly linked to basic psychological needs satisfaction, goal orientation indirectly linked basic psychological needs satisfaction and L2 achievement.

- *Tolerance of ambiguity*

Ellis and Ellis (1994, p. 518) define tolerance of ambiguity as "an ability to address ambiguous new stimuli without frustration or without appeals to authority". It is also defined as "the degree to which you are cognitively willing to tolerate ideas and propositions that run counter to your own belief system or structure of knowledge" (Brown, 2000, p. 119). The term ambiguity might be defined differently in versatile contexts. Norton (1975) maintains that the use of the term "ambiguous" is justified in eight classes of meaning situations: a) multiple meanings b) vagueness, incompleteness, fragmented c) probability d) unstructured e) lack of information f) uncertainty g) inconsistencies, contradictions, contraries and h) unclear meaning situation.

From a different perspective, Bunder (1962) stated that there are three types of ambiguous situations including new, complex and contradictory situations. In a new situation, the ambiguity is resulted by the

absence of sufficient signals, while in a complex situation it will be caused by the existence of countless signals, and in contradictory situations it will be created by struggling signals that give rise to different meanings.

Acknowledging that the tolerance of such ambiguities takes place in levels, Ehrman (1993) maintains that there are three levels for tolerance of ambiguity including intake, tolerance of ambiguity proper, and accommodation. The first level tolerance empowers learners to take in the information or input; the second level enable learners "to hold contradictory or incomplete information without either rejecting one of the contradictory elements or coming to premature closure on an incomplete schema" (1993, p.331) and the last level is related to restructuring one's existing schemata according to the newly gained information.

Tolerances of ambiguity empirical studies have for long focused on different aspects of this individual attribute. As a recent example, Başöz, (2015) aimed to understand how tolerant/intolerant EFL learners are of foreign language ambiguities in addition to exploring whether tolerance of ambiguity of EFL learners affects their vocabulary knowledge. The study also aimed to probe whether there is any gender-related difference in tolerance of ambiguity of EFL learners. The findings of the study revealed that EFL learners of the study had a moderate level of ambiguity tolerance in foreign language learning and that their gender did not have any significant impact on tolerance of ambiguity. It was also found that there was no significant relationship between tolerance of ambiguity and vocabulary knowledge whereas a significant relationship between tolerance of ambiguity and self-perceived achievement in foreign language vocabulary learning was identified.

As an exemplar study carried out in the context of the present study and adopting a similar research design, Alahdadi and Ghanizadeh (2017) explored the dynamic interplay among EFL learners' ambiguity tolerance, adaptability, cultural intelligence, learning approach, and language achievement. The obtained data

was analyzed through structural equation modeling (SEM) procedures and the results indicated that although all variables were directly related to language achievement, tolerance of ambiguity scored the lowest in the significance of the relation.

- *Learner autonomy*

The term autonomous learning has been recurrently referred to in educational research literature ever since around 1975 (Ciekanski, 2007) and the researchers have provided various minimally different definitions for it. Benson (2013) viewed learner autonomy as the learners' ability to manage their own learning. According to this definition, it helps learners to control their own learning process and enhance their abilities. Littlewood (1996, p.97), on the other hand, included the learners' willingness to his definition and defined the concept as the "learners' ability and willingness to make choices independently". Earlier, Dickinson (1987, p. 11) defined learner autonomy as a "situation in which the learner is totally responsible for all of the decisions concerned with his or her learning and the implementation of those decisions".

According to Little (1991) learner autonomy is "essentially the matter of the learners' psychological relation to the process and content of learning, a capacity for detachment, critical reflection, decision-making and independent action". In more plain words, learner autonomy refers to the learners' ability to manage their own learning (Benson, 2013).

Littlewood (1999) distinguishes between proactive and reactive autonomy. In proactive autonomy, learners are totally free to make manipulative decisions during their learning process. While, in reactive autonomy they are only able to regulate the learning processes which are already designed for them. It is believed that the more competent and proficient learners are, the higher degrees of autonomy they have (Little,

1991). Benson (2001, p. 183) also maintained that, "there is an intimate relationship between autonomy and effective learning".

Studies focusing on learner autonomy have also focused on different aspects of the concept. A an example, Zhou (2016) studied the roles of social anxiety, autonomy, and learning orientation in second language learning and applied structural equation modeling design to test a hypothetical model of relations among the variables. The results indicated that anxiety, autonomy and learning orientation correlated with learners' achievement. Anxiety had negative relationship with achievement and learners' autonomy and collaborative learning orientation had positive relations with the learners' achievement. Finally, Cirocki et al. (2019) investigated how Indonesian secondary school students conceptualized the construct of learner autonomy; moreover, attempts were made to estimate their level of readiness to participate in the teaching-learning process as autonomous learners. The findings verified that many of the participants were neither familiar with the concept of learner autonomy nor ready to act as autonomous learners, lacking the typical skills and competences.

Purpose of the study

On the basis of the reviewed literature partly reflected above, it is quite evident the studies focusing on the patterns or models of simultaneous relations among various psychological and cognitive factors on the one hand and second or foreign language achievement variables on the other hand have only quite recently drawn the scholars and researchers' attention. On the same bases and as is minimally reflected in the above mentioned literature review, the study of the model of simultaneous interrelations among self-regulation, goal orientation, tolerance of ambiguity and autonomy and the EFL learners' second language achievement seems to be both unprecedented and theoretically justified on the grounds that decoding the complexities of language learning

enables researchers to identify the facilitating and /or impeding factors involved in the second or foreign language learning processes (e.g., Baeten et al., 2010).

It also needs to be stated that on the basis of the reviewed literature, this study seems to be among the first attempts to explore the correlation patterns of the abovementioned variables through a path analytic structural equation modeling procedure. Against this backdrop, the present study aimed at testing a hypothetical path analytic model of relations between second language achievement and the given cognitive and psychological factors. The hypothesized model (Figure 1) depicted the hypothesized path relations among self-regulation, goal-orientation, tolerance of ambiguity, autonomy, and language learners' second language achievement on the one hand, and the associations among self-regulation and goal-orientation, self-regulation and tolerance of ambiguity, goal-orientation and learner autonomy on the other hand.

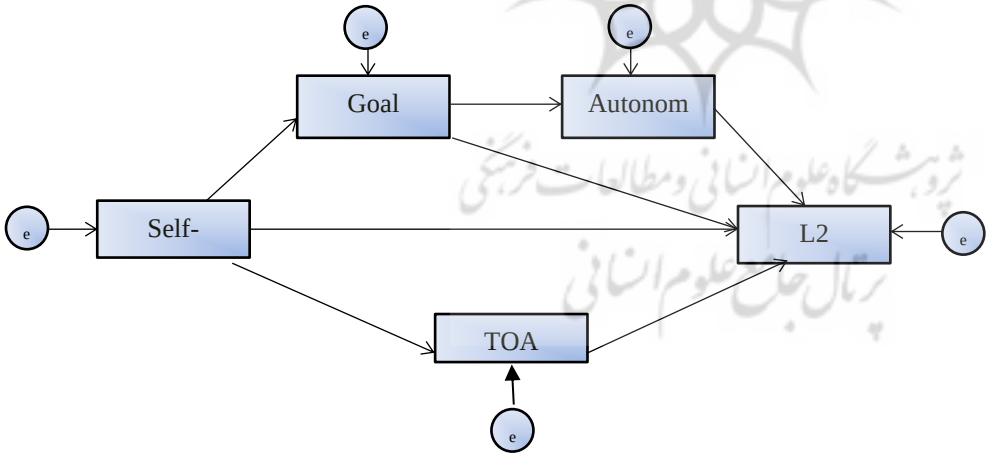

Figure1. The hypothesized model of the study variables' relations pattern

As is reflected in the figure, it was assumed that self-regulation, goal orientation, tolerance of ambiguity and learner autonomy strongly predict L2 achievement. It was also hypothesized that self-regulation strongly predicts goal-orientation and tolerance of ambiguity. Finally, it was expected for goal-orientation to predict EFL learners' autonomy.

3. Method

3.1. Participants

A sample of 250 Iranian junior and senior EFL learners selected from Arak University, Arak Islamic Azad University, Bu-Ali Sina University, Islamic Azad University of Hamedan and Isfahan University all majoring in English Literature or Translation Studies made the participants of the study. The population from which the sample was conveniently drawn was the population of Iranian undergraduate students of English as a foreign language. Gender was not considered as a moderator variable and both the universities from which the sample was drawn and the participants were selected on the basis of convenience sampling procedure due to the impracticalities involved in a true random selection of participants in nationwide scale of sampling.

3.2. Instrumentation

For data collection purposes, the following scales and measures were applied. The structure of each measure and its psychometric properties are described briefly in turn.

- *Trait Self-Regulation Questionnaire (TSRQ)*

Trait self-regulation questionnaire (O'Neil & Herl, 1998) includes 32 five-point Likert scale items ranging from *1 for never* to 5 *for always*. According to Herl et al., (1999), the reliability and validity of the scale have been

verified in multiple studies. Moreover, Ghanizadeh and Mirzaee (2012) reported Cronbach's alpha reliability of 0.86 for the questionnaire. However, in order to make sure of the reliability and validity of the scale in the context of present study, the researchers re-estimated its reliability level and revalidated the scale using principle component factor analysis. The analyses resulted in Cronbach's alpha measure of internal consistency index of 0.92, Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) value of 0.93 and the Bartlett's Test of Sphericity significantly smaller than 0.05 (x2 = 3177.82; df = 4851; p = 0.00).

- *Goal Orientation Scale*

Goal orientation scale (Pintrich et al., 1991) as an integrated component of Motivated Strategies for Learning Questionnaire (MSLQ) includes eight seven-point Likert scale items ranging from 1 for *not at all true of me* to 7 for *very true of me*. Four items tap into intrinsic orientation and four items address extrinsic orientation. Pintrich et al., (1991) reported Cronbach's alpha reliability of 0.90 and the Bartlett's Test of Sphericity significantly smaller than 0.05; however, to make sure of the reliability and validity of the scale in Iranian context, statistical measures were applied and the results verified Cronbach's alpha measure of internal consistency of 0.82, Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) value of 0.78 and the Bartlett's Test of Sphericity significantly smaller than 0.05 (x2 = 800.73; df = 4851; p = 0.000).

- *Second Language Tolerance of Ambiguity Scale (SLTAS)*

Second Language Tolerance of Ambiguity Scale (Ely, 1995) includes 12 five-point Likert scale items, ranging from 1 *for strongly disagree* to 5 *for strongly agree*. Kamran (2011) reported Cronbach's alpha reliability index of 0.84 for this questionnaire. However, in an attempt to assure the reliability and validity of the questionnaire in Iranian context, the researchers embarked on re-estimation of the reliability index and revalidation of the

scale in this study. The results indicated Cronbach's alpha reliability of 0.88, Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) value of 0.90 and the Bartlett's Test of Sphericity significantly smaller than 0.05 (x2 = 1110.94; df = 4851; p = 0.000).

- *Learner Autonomy*

The Learner Autonomy questionnaire designed by Conttia (2007) includes 40 items including 31 five-point Likert scale items, 4 three-point Likert scale items, and 5 ranked order items. The statistical analyses conducted in this study on the obtained data from this scale resulted in Cronbach's alpha reliability of 0.83, Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) value of 0.79 and the Bartlett's Test of Sphericity significantly smaller than 0.05 (x2 = 3231.96; df = 4851; p = 0.000).

- *Second Language Achievement*

The participants' General English courses' GPA at B.A. level was considered as a measure of their L2 achievement level. The courses included *Speaking and Listening I*, *Speaking and Listening II*; *Grammar I*, *Grammar II*; *Reading Comprehension I*, *Reading Comprehension II*, and *Reading Comprehension III*.

3.3. Data Collection Procedure

The four questionnaires were administered to 250 EFL learners at Arak University, Arak Islamic Azad University, Bu-Ali Sina University, Islamic Azad University of Hamedan, Isfahan University, and Islamic Azad University of Isfahan to assess their level of self-regulation, tolerance of ambiguity, goal orientation and learner autonomy. The participants were selected based on convenience sampling procedure and their informed consent for participation was obtained prior to data collection. The data collection procedure lasted from September to

December 2019. All participants received questionnaires through face to face contact. The General English courses' GPA which was considered as the participants' second language achievement level was obtained from the registrar's office of the Universities. Once the data was collected, it was fed into SPSS and AMOS statistical packages and statistical analyses including Pearson product-moment correlation coefficient and multiple regression analyses were applied to assess the correlations and predictions among variables. Also, the hypothesized model was tested through Structural Equation Modeling procedures using Amos 24 statistical package.

4. Results

4.1. Preliminary Analyses

Prior to the conduct of statistical analyses addressing research hypotheses, preliminary statistical analyses including Cronbach's alpha measure of internal consistency, Factorial Analyses, One-Sample Kolmogorov-Smirnov Test, and Pearson's correlation coefficient were applied to the obtained data, the results of which are presented below in Tables 1 to 4. The reliability of the scales were re-estimated using Cronbach's alpha measure of internal consistency. Table 1 summarizes the obtained reliability estimates of the questionnaires.

Table 1. *Cronbach alpha indexes for the questionnaires*

Scale	Number of items	Cronbach alpha
Self-regulation (SR)	32	.926
Goal orientations (GO)	8	.823
Tolerance of ambiguity (TOA)	12	.883
Learner autonomy (LA)	40	.832

As is evident above in Table 1, all measures were found to be highly reliable. For revalidation of the scales, Confirmatory Factor Analysis (CFA) was applied on the data obtained for each questionnaire. Keiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity results confirmed the appropriateness of the conduct of factor analysis for each variable (Table 2).

Table 2. *KMO and Bartlett's test results of the instruments*

	KMO Measure of Sampling Adequacy	Bartlett's Test of Sphericity, Approx. Chi-Square	Df.	sig
Self-regulation(SR)	0.930	3177.82	496	0.000
Goal orientation(GO)	0.780	800.73	28	0.000
Tolerance of ambiguity(TOA)	0.906	1110.94	66	0.000
Lerner Autonomy (LA)	0.794	3231.96	780	0.000

Confirmatory factor analysis (CFA) for self-regulation scale confirmed the presences of seven components with eigenvalues larger than 1, each with total variance of 34.6, 5.16, 4.3, 3.57, 3.49, 3.34, and 3.18 percent respectively. Seven-component scale explained a total of 57.6 percent of the variance. The same analysis for goal orientation scale confirmed the presences of two components with eigenvalues larger than 1, each with total variance of 45 and 19.7 percent respectively. Two-component scale explained a total of 64.8 percent of the variance.

In the case of tolerance of ambiguity scale, the analysis confirmed the presences of two components with eigenvalues larger than 1, each with total variance of 44.5 and 8.6 percent respectively. Two-component scale explained a total of 53.1 percent of the variance. Finally for learner autonomy scale, CFA confirmed the presences of twelve components with eigenvalues larger than 1, each with total variance of 17.4, 8.9, 7.1, 4.6, 3.8, 3.5, 3.4, 3.2, 3, 2.88, 2.76 and 2.57 percent respectively. Twelve-component scale explained a total of 63.45 percent of the variance.

In addition to reliability and validity estimations, the normality of data distribution for each study variable was checked using One-sample Kolmogorov-Smirnov test, the results of which are tabulated below in Table 3.

Table 3. *One-sample Kolmogorov-Smirnov test*

	L2 achievement	SR	GO	TOA	LA
N	245	245	245	245	245
Test Statistic	.034	.050	.079	.104	.053
Asymp. Sig. (2tailed)	.200	.200	.058	.061	.090

As is evident above in Table 3, the obtained p values all fell above critical 0.05 value indicating that the data were normally distributed for all study variables.

Finally, in an attempt to check the assumptions of structural equation modeling, Pearson Correlation analysis was applied to assess the strength and direction of the linear relationship between the study variables (Pallent, 2016). Table 4 displays the results of the correlation analyses among the variables.

Table 4. *The relationship among EFL learners' SR, GO, TOA, LA and L2 achievement*

	1	2	3	4	5
SR	1				
GO	.565**	1			
TOA			1		
LA		.352**		1	
L2 achievement	.562**	.452**		.135*	1

** Correlation is significant at the 0.05 level (2-tailed). (Insignificant correlations are not reported)

As is indicated in correlations matrix above, goal orientation correlated positively with L2 achievement (r=.45, p<.05), self-regulation correlated positively with L2 achievement (r=.56, p<.05), learner autonomy positively correlated with students' L2 achievement (r=.13, p<.05).

Furthermore, the results indicated that trait self-regulation correlated positively with goal orientation (r=.57, p<.05) and learner autonomy correlated positively with goal orientation (r=.35, p<.05).

4.2. Confirmatory Analyses

As for the confirmatory analyses, structural equation modeling (SEM) was used to (1) determine whether the measurement model was in harmony with the hypothesized model and (2) report the final model accordingly (Lei and Wu, 2007). To examine the structural relations, the hypothesized model was tested using Amos 24 statistical package. The confirmatory analyses were run and the main indicators were evaluated and finally the goodness of fit indexes was examined. The path relationships among variables in hypothesized baseline model are represented in Figure 2.

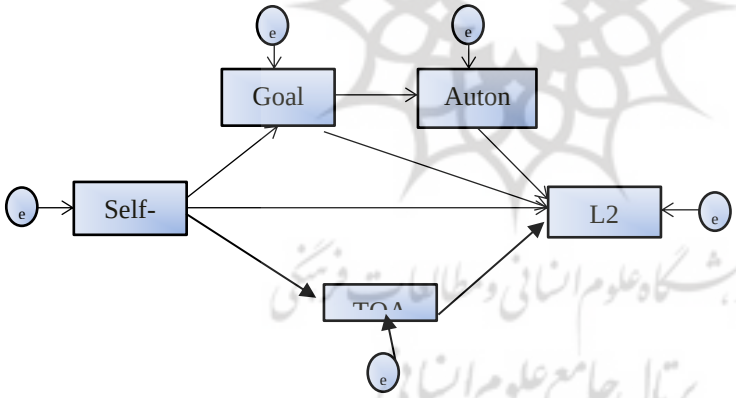

Figure 2. The hypothesized baseline model

To assess the baseline model fit, some fit indices needed to be checked. These indices included the chi-square, degree of freedom ratio (χ^2/df), the Root Mean square Residual (RMR), the Good Fit Index (GFI), the Adjusted Goodness of Fit Index (AGIF)**,** the Root Mean Square Error of Approximation (RMSEA) and the

Comparative Fit Index (CFI). Table 5 presents the obtained results and acceptable cut point level for each one of the goodness of fit indices.

Table 5. *Goodness of fit indices after modification*

Index	Cut point	Model value	Conclusion
χ^2/df	Less than 3	2.01	Confirmed
RMR	The closer to zero indicates a better fit of the model	0.001	Confirmed
GFI	> 0.8	0.848	Confirmed
AGIF	The closer to one indicates the better the fit of the model	0.929	Confirmed
RMSEA	< 0.05: good fit. Between 0.05 and 0.1: moderate fit	0.064	Moderate fit
CFI	> 0.9	0.979	Confirmed

As Table 5 shows, all RMR (0.001), GIF (0.848), AGIF (0.929), RMSEA (0.064) and CFI (.979), fit indices were within the acceptable fit thresholds.

The strengths of the relationships among the variables and the standardized estimates were checked and Figure 3 shows the path analysis of the relationship among self-regulation, goal orientation, tolerance ambiguity, and L2 Achievement.

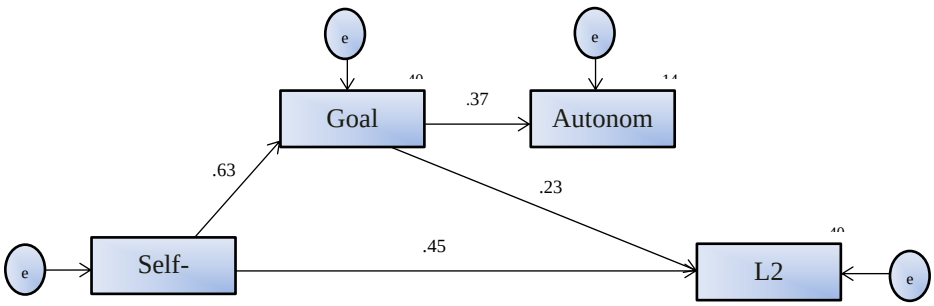

Figure 3. The final model

As indicated in Figure 3, the numbers are demonstrations of the standardized coefficient or beta coefficients (*β)*. *β* shows the predictive power of the independent variable and the effect size. The higher the correlation and the closer the number to 1, the greater the predictive power of the variable would be.

As Figure 3 indicates, self- regulation and goal orientation were correlated with L2 achievement (r^2 = .45 and r^2 = .23 respectively). Also, self-regulation was found to be associated with goal orientation (r^2= .63) and goal orientation was found to be correlated with learner autonomy (r^2= .37). Moreover, goal orientation was found to be the strongest predictor (r^2=.37) of L2 achievement; however, learner autonomy was not found to be a strong predictor of L2 achievement. In addition, the predictive power of L2 achievement by goal orientation was not verified to be mitigated by learner autonomy.

5. Discussion

This study set out to explore the probable interrelationships among some of individual cognitive and psychological factors with EFL learners' L2 achievement. The final confirmed model demonstrated a positive relationship among self-regulation and L2 achievement and self-regulation and goal orientation. Also, goal orientation was associated directly with L2 achievement and learner autonomy. Furthermore, L2 achievement was not found to be correlated with EFL learners' tolerance of ambiguity and autonomy.

Furthermore, the study aimed to explore whether goal orientation predicts Iranian EFL learners' L2 achievement. The final model indicated that goal orientation strongly predicted Iranian EFL learners' L2 achievement. The results of path analyses are in accordance with the results of some earlier studies like Pekrun et al. (2009) who indicated that achievement emotions and academic performance were predicted by achievement goals. Also, the findings of the study do lend support to those of Roebken (2007) which indicated that both mastery and performance goals had positive effects on better outcomes. On the other hand the findings

of current study do not align with those of Kitsantas et al. (2017) who verified that goal orientation was not a predictor of students' achievement. A tentative reason for such an inconsistency might be the different age and educational levels of the participants of these two studies. The participants of Kitsantas et al. (2017) were elementary school pupils while the participants of the current project were university students. It is quite evident that the two groups greatly differ in terms of their cognitive and affective individual and social differences.

Concerning the verified association between self-regulation and Iranian EFL learners' L2 achievement, it is notable that this piece of finding was indicative of the predictability of L2 achievement level of the L2 learners by the self-regulation orientation. This finding confirms the Pintrich and De Groot (1990) who demonstrated that self-regulation strongly predicts language achievement. In addition, Tilfarlioglu and Delbesoglugil (2014) verified that self-regulation significantly associated with language learning. Similarly, Tsuda and Nakata (2013) reported a positive relationship between self-regulation and Japanese high school EFL students' language learning. In sum, the attested results of the current study and those of the reported earlier ones underscore self-regulation as an effective factor in language learning across different age and ability levels.

The analyses explored the path relation between tolerance of ambiguity and EFL learners' L2 achievement as well and the findings indicated that there was no significant relation between tolerance of ambiguity and Iranian EFL learners' L2 achievement. Mixed results are reported in the literature in this regard. Lee (1999) for example, showed that tolerance of ambiduity had positive relationship with writing performance. On the other hand, the findings of Seidi (2018) verified the significant and direct relationship between tolerance of ambiguity and students' level of reading comprehension. Furthermore, Sa'dabadi (2014) reported positive relation between tolerance of ambiguity and learners' cloze test achievements. Although none of these studies

considered the relationship between tolerance of ambiguity and L2 acheivemnet per se, one probable justification for the observed inconsistency between the above mentioned studies results and those of the current study might be the difference in the used measures of general proficiency. Learners' task based writing, reading comprehension proficiency levels, and cloze test performances although might be correleated with their general L2 acheivement are justifiably different in both the nature and scope from general L2 acheivement. In other words, each one of these activities make a single part of the general L2 acheivement and hence they are more specific and less inclusive than L2 acheivement. On the other hand, our structural equation modeling results in this regard are harmonious with those of Başöz, (2015) which confirmed no relationship between tolerance of ambiguity and EFL learners' L2 achievement.

The path analyses exploring the relation pattern between learner autonomy and Iranian EFL learners' L2 achievement, showed no significant association between learner autonomy and L2 achievement either. Although, the results of correlational analyses showed a positive correlation between learner autonomy and learners' L2 achievement, the structural equation modeling did not verify the relationship among them. Earlier findings are mixed in this concern as well. Liu (2015, 2012) for example stated that autonomy had positive relation with learners' performance in language learning. Furthermore, Zhou (2016) also concluded that autonomy has positive effects on learners' achievement. Moreover, Tilfarlioglu and Ciftci (2011) verified the positive correlation among learner autonomy and academic access. In contrast, the results of our analysis are consistent with those of Ezzi (2018) for example which demonstrated that learner autonomy and English proficiency of postgraduate English students did not have a strong correlation.

As is evident above in the final model neither preliminary correlational analyses nor SEM analyses verified any go togetherness between self-regulation and learners' tolerance of ambiguity. Moreover, no correlations were confirmed to exist between tolerance of ambiguity and L2 achievement, a finding which

stands in contrast to the positive correlation Varasteh et al. (2016) reported to exist between tolerance of ambiguity and language achievement in Iranian context.

A positive relationship between EFL learners' self-regulation and goal orientation was also confirmed by both preliminary and confirmatory analyses. Such a finding supports those of Radosevich et al. (2004) and Mirhassani et al. (2007) which examined the association between goal orientation and self-regulated learning and confirmed a positive correlation between the variables. Also, the findings of the study are in line with Shabani, and Mohammadian, (2014) that reported learners' goal orientation could predict their self-regulated level. Finally, Lin et al. (2017) reported that those students whose goal orientations were in accordance with their classroom goal structure were more successful in using self-regulatory strategies.

The obtained results also indicated that the Iranian EFL learners' goal orientation predicted their autonomy level as well. The idea partially reflects the findings of Cho et al., (2011) who verified that the learners' perceived autonomy played a moderating role in their mastery goal orientation enhancement.

6. Conclusion

In summary, the verified model of the relationships among the study variables demonstrated that the EFL learners' L2 achievement was predicted by both self-regulation and goal orientation; however, self-regulation was found to be the stronger predictor in this regard. Moreover, EFL learners' self-regulation could even predict their goal orientations as well. Finally, while goal orientation was verified to be a predictor of EFL learners' autonomy, learner autonomy was not found to be a strong predictor of EFL learners L2 achievement. The final verified model of interrelations among the study variables did not confirm a number of paths including the ones between tolerance of ambiguity and learner autonomy with EFL learners' second language achievement and

self-regulation and tolerance of ambiguity. Amongst the study variables, goal orientation was found to be the strongest predictor of L2 achievement.

A number of theoretical and practical implications might be in order for the study findings. At the theoretical level, drawing on the attested importance of goal orientations and self-regulation for second or foreign language learning, L2 education might be benefited in general to consider the established links between such psychological and cognitive variables and L2 achievement, on the other hand L2 education research might also be served if the researchers may follow the research line adopted in the study and explore the combined effects or the integrated relation patterns of goal orientations and the second or foreign language learners' other cognitive and/or affective individual differences. Language teacher education programs need to also consider the attested importance of language learners' goal orientations and tune their educational syllabuses and materials accordingly. From pedagogic perspective, second or foreign language teachers also need to reorient their pedagogic practices so that individual learner differences are addressed more attentively. All in all, the findings further endorse the priority of sociocultural orientations in language teaching and dialogic ZPD sensitive scaffolding of the instruction process as it seems that such an orientation will be most likely to be comparatively more cognizant of the individual differences like goal orientations and self-regulation predispositions of the foreign language learners.

7. References

Alahdadi, SH,. & Ghanizadeh, A. (2017). The dynamic interplay among EFL learners' ambiguity tolerance, adaptability, cultural intelligence, learning approach, and language achievement. *Iranian Journal of Language Teaching Research 5*(1), 37-50.

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of educational psychology, 84*(3), 261.

Baeten, M., Kyndt, E., Struyven, K., & Dochy, F. (2010). Using student-centred learning environments to stimulate deep approaches to learning: Factors encouraging or discouraging their effectiveness. *Educational Research Review, 5*(3), 243-260.

Başöz, T. (2015). Exploring the relationship between tolerance of ambiguity of EFL learners and their vocabulary knowledge. *Journal of Language and Linguistic Studies*, *11*(2), 53-66.

Bauer, I. M., & Baumeister, R. F. (2011). Self-regulatory strength. In K. D. Vohs & R. F. Baumeister (Eds.), *Handbook of self-regulation: Research, theory, and applications* (pp. 64-82). New York, NY: Guilford Press.

Benson, P. (2001). *Autonomy in language learning*. Harlow: Longman.

Benson, P. (2013). *Teaching and researching: Autonomy in language learning.*Abingdon, Great Britain: Routledge.

Boekaerts, M. (2011). Emotions, emotion regulation, and self-regulation of learning. In Zimmerman, B. J., & Schunk, D. H. (Eds.), *Handbook of self-regulation of learning and performance* (pp. 408-425). Routledge/Taylor & Francis Group.

Brown, H. D. (2000). *Principles of language teaching and learning.* White Plains, NY: Longman.

Bunder, S., (1962). Intolerance of ambiguity as a personality variable. *Journal of Personality*, 30(1), 29-51.

Cho, Y., Weinstein, C. E., & Wicker, F. (2011). Perceived competence and autonomy as moderators of the effects of achievement goal orientations. *Educational Psychology, 31*(4), 393-411.

Ciekanski, M. (2007). Fostering learner autonomy: Power and reciprocity in the relationship between language learner and language learning adviser. *Cambridge Journal of Education, 37*(1), 111-127.

Cirocki, A., Anam, S., & Retnaningdyah, P. (2019). Readiness for autonomy in English language learning: The case of Indonesian high school students. *Iranian Journal of Language Teaching Research 7*(2), 1-18.

Conttia, L. M. (2007). *The influence of learner motivation on developing autonomous learning in an English-for-Specific-Purposes course.* (Unpublished MA thesis).University of Hong Kong.

Cumming, A. H. (2006). *Goals for academic writing: ESL students and their instructors* Amesterdam: John Benjamins publishing company.

Dickinson, L., (1987). *Self-Instruction in language learning.* Cambridge: Cambridge University Press.

Dörnyei, Z. (2005). *The psychology of the language learner: Individual differences in second language acquisition*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc., publishers.

Duncan, T. G. & McKeachie, W. J. (2005). The motivated strategies for learning questionnaire. *Educational Psychologist,* 40(2), 117-128.

Ehrman, M. E. (1993). Ego boundaries revisited: Toward a model of personality and learning. In Alatis J.E. (Ed.). *Strategic interaction and language acquisition: Theory, practice, and research* (pp.331-362).Washington, DC: Georgetown University.

Ellis, R., & Ellis, R. R. (1994). *The study of second language acquisition*. Oxford University Press.

Elliot, A. J., & McGregor, H. A. (2001). A 2 x 2 achievement goal framework. *Journal of Personality and Social Psychology*, *80*(3), 501-519.

Ely, C. M. (1995). Second language tolerance of ambiguity scale. In J. M. Reid (Ed.), *Learning styles in the ESL/EFL classroom* (pp. 216-217). Boston: Heinle & Heinle.

Ezzi, N. A. A. (2018). The relationship between learner autonomy and English proficiency of Yemeni postgraduate English students: A correlational study in Hodeidah University. *Journal of Education and Practice. 9*(26), 80-89.

Gardner, J. W**.** (1963). *Self-renewal***.** New York: Harper & Row.

Ghanizadeh, A., & Mirzaee, S. (2012). EFL learners' self-regulation, critical thinking and language achievement. *International Journal of Linguistics*, *4*(3), 451-468.

Herl, H. E., O'Neil, H. F., Chung, G. K. W. K., Bianchi, C., Wang, S. L., Mayer, R., Lee, C. Y., Choi, A., Suen, T., & Tu, A. (1999, March). *Final report for validation of problem- solving measures***.** CSE Technical Report 501. Los Angles: University of California.

Hulleman, Ch., Bodmann, Sh, M,. Harackrewicz, J, M ., Schrager, Sh, M. (2010). A meta-analytic review of achievement goal measures: Different labels for the same constructs or different constructs with similar labels? *American Psychological Association, 136* (3), 422-449.

Kamran, S. K. (2011). Effect of gender on ambiguity tolerance of Iranian English language learners. *Journal of Education and Practice*, *2*(11), 25-32.

Karbakhsh, R., & Ahmadi Safa, M. (2020). Basic psychological needs satisfaction, goal orientation, willingness to communicate, self-efficacy, and learning strategy use as predictors of second language achievement: A structural equation modeling approach. *Journal of Psycholinguistic Research*, *49*, 803-822.

Kitsantas, A., Steen, S., & Huie, F. (2017). The role of self-regulated strategies and goal orientation in predicting achievement of elementary school children. *International Electronic Journal of Elementary Education, 2*(1), 65-81.

Kormos, J., & Csizer, K. (2014). The interaction of motivation, self-regulatory strategies, and autonomous learning behavior in different learner groups. *TESOL Quarterly, 48*(2), 275-299.

Larsen-Freeman, D. (2007). On the complementarity of chaos/complexity theory and dynamic systems theory in understanding the second language acquisition process. *Bilingualism: Language and Cognition, 10*(1), 35-37.

Larsen-Freeman, D. (2015). Research into practice: Grammar learning and teaching. *Language Teaching*, *48*(2), 263-280.

Lee, E. K. (1999). The Effects of Tolerance of Ambiguity on EFL Task-Based Writing. *The SNU Journal of Education Research*, 9, 117-131.

Lei, P., & Wu, Q. (2007). An NCME instructional module on introduction to structural equation modeling: Issues and practical considerations. *Educational Measurement: Issues and Practice, 26*(3), 33–43.

Lin, Y., Cherng, B., Chen, H., & Peng, Sh. (2017). The moderating effects of goal orientations and goal structures on test preparation strategies for Taiwanese students. *Learning and Individual Differences. 56*, 68-75.

Little, D. G. (1991). *Learner autonomy: Definitions, issues and problems*. Dublin: Authentic.

Littlewood, W. (1996). Autonomy: An anatomy and a framework. *System, 24*(4), 427-435.

Littlewood, W. (1999). Defining and developing autonomy in East Asia contexts. *Applied Linguistics, 20*(1), 71-94.

Liu. H-J. (2012). Understanding EFL undergraduate anxiety in relation to motivation, autonomy, and language proficiency. *Electronic Journal of Foreign Language Teaching. 9* (1), 123-139.

Liu, H-J. (2015). Learner autonomy: The role of motivation in foreign language learning. *Journal of Language Teaching and Research, 6*(6), 1165-1174.

Liu, HH-T, & Lee, Y-S. (2015). measuring self-regulation in second language learning: A Rasch analysis. *SAGE Open, 5*(3),1-12.

Mirhassani, A., Akbari, R., & Dehghan, M. (2007). The relationship between Iranian EFL learners' goal-oriented and self-regulated learning and their language proficiency. *Tell, 1*(2), 117-132.

Norton, R. W. (1975). Measurement of ambiguity tolerance. *Journal of Personality Assessment*, *39*(6), 607-619.

O'Neil Jr, H. F., & Herl, H. E. (1998). *Reliability and validity of a trait measure of self-regulation.* Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

Onwuegbuzie, A. J. (2004). Academic procrastination and statistics anxiety. *Assessment & Evaluation in Higher Education, 29*(1), 3-19.

Pallent, J. (2016). *SPSS survival manual.* Maidenhead: McGraw-Hill.

Pekrun, R., Elliot, A. J., & Maier, M. A. (2009). Achievement goals and achievement emotions: Testing a model of their joint relations with academic performance. *Journal of Educational Psychology, 101*(1), 115.

Phan, H. P. (2009). Exploring students' reflective thinking practice, deep processing strategies, effort, and achievement goal orientations. *Educational Psychology, 29*(3), 297–313.

Pintrich, P. R., & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, *82*(1), 33-40.

Pintrich, P., Smith, D., García, T., & McKeachie, W. (1991). A manual for the use of the motivational strategies for learning questionnaire (MSLQ). *Ann Arbor, MI: University of Michigan, National Center for Research to Improve Postsecondary Teaching and Learning*, (313), 936-2741.

Radosevich, D., Vandana, T., Yeo, S., & Deirdre, M. (2004). Relating goal orientation to self-regulatory processes: A longitudinal study. *Contemporary Educational Psychology*, 29(3), 207-229.

Roebken, H. (2007). The influence of goal orientation on student satisfaction, academic engagement and achievement. *Electronic Journal of Research in Educational Psychology*, *5*(3), 679-704.

Sa'dabadi, N.(2014).The relationship among the level of ambiguity tolerance and cloze test performance of Iranian EFL learners across their gender. *International Journal of Language Learning and Applied Linguistics World. 6* (4), 337-347.

Sadeghi, F., Sadighi, F., & Bagheri, M.S. (2020). The relationship between Iranian EFL learners' language mindset with goal orientation and responses to failure. *Cogent Education, 7*(1), Doi:10.1080/2331186X.2020.1833814

Seidi, N. (2018). The effect of ambiguity tolerance and gender on Iranian EFL learners reading comprehension. *Journal of Applied Linguistics and Language Research, 5*(4), 130-139.

Shabani, M. B., & Mohammadian, M. (2014). Relationship between goal orientation, critical thinking, meta-cognitive awareness and self-regulated learning of Iranian students. *International Journal of Language Learning and Applied Linguistics World* , *5*(1), 403-418.

Teng, L.S. & Zhang, L. J. (2021). Can self-regulation be transferred to second/foreign language learning and teaching? Current status, controversies, and future directions. *Applied Linguistics*. https://doi.org/10.1093/applin/amab032

Tilfarlioglu, F.Y., & Ciftci, F. S.(2011). Survey about supporting self-efficacy and learner autonomy in relation to academic success in EFL classroom (A case study). *Theory and Practice in Language Studies. 1*(10), 1284-1294.

Tilfarlioglu, F. Y., & Delbesoglugil, A. B. Ö. (2014). Questioning academic success through self-regulation, self-esteem and attitude in foreign language learning (a case study). *Theory and Practice in Language Studies*, *4*(11), 2223-2230.

Tsuda, A., & Nakata, Y. (2013). Exploring self-regulation in language learning: A study of Japanese high school EFL students. *Innovation in Language Learning and Teaching, 7*(1), 72-88.

Varasteh, H., Ghanizadeh, A., & Akbari, O. (2016). The role of task value, effort-regulation, and ambiguity tolerance in predicting EFL learners' test anxiety, learning strategies, and language achievement. *National Academy of Psychology, 61*(1), 2–12.

Wang, H., Yang, J., & Li, P. (2020). How and when goal-oriented self-regulation improves college students' well-being: A weekly diary study. *Current psychology*, 1-12.

Watkins, D., McInerney, D. M., & Lee, C. (2002). Assessing the school motivation of Hong Kong students. *Psychologia, 45*, 145–154.

Wigfield, A., Klauda, S., & Cambria, J. (2011). Influences on the development of academic self-regulatory processes. In B.J. Zimmerman & D.H. Schunk (Eds.), *Handbook of Self-Regulation of Learning and Performance* (pp.33- 48). London: Routledge Press.

Zheng, C., Liang, J.-C., Yang, Y.-F., & Tsai, C.-C. (2016). The relationship between Chinese university students' conceptions of language learning and their online self-regulation. *System, 57*, 66-78.

Zhou, M. (2016). The roles of social anxiety, autonomy, and learning orientation in second language learning: A structural equation modeling analysis. *System, 63*, 89-100.

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13-39): Elsevier.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: an overview. *Theory into Practice. 41*(2), 64-70.

Zimmerman, B. J., & Cleary, T. J. (2009). Motives to self-regulate learning: A social cognitive account. In K. R. Wentzel & A. Wigfeld (Eds.), *Handbook of motivation at school* (pp. 247–264). New York: Routledge.

Zimmerman, B. J., & Schunk, D. H. (Eds.). (1989). *Self-regulated learning and academic achievement: Theory, research, and practice.* New York: Springer-Verlag.

Notes on Contributors:

Mohammad Ahmadi Safa is an associate professor of TEFL at Bu Ali Sina university. His main fields of interest include Sociocultural Theory applications in teaching and testing foreign language, language testing and assessment, and ICC development. He has widely published articles on different aspects of EFL including sociocultural practices in language teaching and testing, cognitive and metacognitive scaffolding, Interlanguage Pragmatics (ILP), and individual differences in EFL in prestigious national and international journals.

Matin Sadat Mirebrahim is an MA graduate of TEFL and is currently an English Teacher. As for her master's thesis, she focused on the role of cognitive and affective psychological differences in foreign language achievement. Her main fields of interest are foreign language pedagogy and interlanguage development.