



Modeling the Relationship between Revised L2 Motivational Self System, L2 Emotions, Motivated Learning Behavior, and L2 Proficiency

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Abstract

L2 Motivational Self System (Dörnyei, 2005, 2009) holds a remarkable potency in explaining the long-term routes to L2 acquisition. Meanwhile, due to the prevalence of dynamic systems perspective, the theory has been awaited to account for the affective and cognitive aspects of L2 learning. The present study attempted to test an integrated model to examine the correlations between components of the revised L2MSS, L2 emotions of Enjoyment and Boredom, Intended Learning Effort, Vigilant and Eager L2 Use, and L2 Proficiency utilizing structural equation modeling. The data was obtained from 350 TOEFL test takers in ETS official centers in Iran. The results demonstrated the strongest prediction of Intended Learning Effort by Ought L2 Self/Own, coming next to the Ideal L2 Self/Own and Ideal L2 Self/Other. Ideal L2 Self/Own and L2 Learning Experience were positive predictors of L2 Enjoyment, whereas Ought L2 Self/Other and L2 Learning Experience had a positive and negative impact on L2 Boredom, respectively; L2 Enjoyment predicted Intended Learning Effort and Eager L2 Use positively, whereas L2 Intended Learning Effort Vigilant L2 Use were predicted negatively and positively by Boredom, respectively. Moreover, Eager L2 Use and Intended Learning Effort were positive predictors of L2 Proficiency; however, Vigilant L2 Use was conversely related to L2 Proficiency. Overall, the findings illustrate the superiority of a promotion orientation to L2 learning and the equal importance of quality and quantity of the Motivated Learning Behavior, which has significant pedagogical implications in terms of motivational and self-regulatory learning strategies in designing and managing L2 classroom tasks.

Keywords: Boredom, Eager L2 Use, L2 Motivational Self-System, L2 Proficiency, Regulatory Focus Theory

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A prevalent and widely-used conceptualization serving as a conceptual framework to account for the long-term, vision-oriented L2 motivation (Boo, Dörnyei, & Ryan, 2015) is Dörnyei's (2005, 2009) L2 Motivational Self System (L2MSS). A multitude of research has examined its theoretical verity, and the model's validity has received empirical verification through L2 motivation studies all over the world (e.g., Lamb, 2012; Papi, 2010; Takahashi & Im, 2020). However, the theoretical potency of L2MSS in explicating the relationship between L2MSS and affective/cognitive dimensions of L2 development has not been globally affirmed by the existing research due to a set of inconsistencies that necessitate further probing on the theory. First, the findings of the studies using L2MSS as their theoretical framework are not uniform regarding different components of the model. The two components of the Ideal L2 Self and L2 Learning Experience have turned out to strongly predict motivated learning behavior, whereas the Ought-to L2 Self has resulted in trivial variance in this regard. Even the construct validity of the Ought-to L2 Self has been questioned by some research (e.g., Csizer & Lukas, 2010). In an attempt to address this problem, Papi, Bondarenko, Mansouri, Feng, and Jiang (2019) conceived of Ideal L2 Self and Ought-to L2 Self along the further dichotomies of "own" and "other". They also based learners' motivational orientations on promotion and prevention regulatory standpoints and the strategic investments of Vigilant and Eager L2 Use. Few studies, up to now, have attempted to test the 2×2 model (e.g., Papi & Khajavy, 2021). As a response to a call by Csizer (2019), the current study intended to probe the soundness of the 2×2 model as an attempt to shed light on both quality and quantity aspects of motivated learning behavior.

Second, a vast majority of studies have used Dörnyei's (2009, p. 31) "criterion measure" of Intended Learning Effort as a dependent variable to show the effects of L2MSS components. However, Intended Learning Effort is a self-reported measure of intention to make an effort to study L2, and it is considered a subjective measurement of L2 achievement or proficiency. There needs to be an evaluation of the way learners' motivated behavior is crystalized in their learning outcomes. Therefore, the present study attends to this research gap by examining the L2 proficiency test as a correlate of L2MSS components with the mediation of Intended Learning Effort.

Third, the mainstream investigations using L2MSS as their theoretical background have followed the practice of using self-guides in isolation from cognitive and affective factors. When second language motivation is viewed from the perspective of Complex Dynamic System Theory (CDST), the complex interaction of the tripartite system of the human mind— i.e., cognition, emotion, and motivation—cannot exclude any component. Therefore, looking at future self-guides as motivational conglomerates (Dörnyei & Ushioda, 2011) encompassing motivational, cognitive, and affective areas will expand our understanding of L2 motivation (Nizigama, Fazilatfar, & Jabbari, 2023). The inclusion of emotions in L2MSS has often been underscored by L2 motivation researchers (e.g., MacIntyre, MacKinnon, & Clément, 2009). To the best of our knowledge, Boredom has not been observed in the existing L2 motivation studies in relation to the components

of the new revised L2MSS. This study has focused on the negative L2 emotion of Boredom and the positive L2 emotion of Enjoyment to this end.

With regard to these three research gaps, the study reported aimed to model the relationship between the new revised 2×2 L2MSS model, two L2 emotions of Boredom and Enjoyment, Intended Learning Effort (the quantity of motivated learning behavior), Vigilant and Eager L2 Use (the quality aspect of motivated learning behavior), and L2 proficiency by resorting to structural equation modeling. The following questions were spotlighted:

1. How are the five revised L2MSS components (L2 Learning Experience, Ought-to L2 Self/Own, Ought-to L2 Self/Other, Ideal L2 Self/Own, Ideal L2 Self/Other) related to Intended Learning Effort?
2. How do L2 Enjoyment and Boredom interact with motivational variables of L2MSS (L2 Learning Experience, Ought-to L2 Self/Own, Ought-to L2 Self/Other, Ideal L2 Self/Own, Ideal L2 Self/Other)?
3. How do L2 emotions of Enjoyment and Boredom affect L2 learners' Motivated Learning Behaviors?
4. How are L2 emotions of Boredom, Enjoyment, and revised L2MSS components (L2 Learning Experience, Ought-to L2 Self/Own, Ought-to L2 Self/Other, Ideal L2 Self/Own, Ideal L2 Self/Other) related to L2 Proficiency with the mediation of Intended Learning Effort?
5. How are L2 emotions of Boredom and Enjoyment related to L2 Proficiency with the mediation of Vigilant/Eager L2 Use?

Review of Literature

L2 MSS and Later Developments

The L2 Motivational Self-System views second language motivation primarily as a quantity of energy that drives L2 learners to initiate, maintain, and accomplish learning goals (Papi, 2018). Most of the studies using L2MSS as their theoretical background have resorted to Intended Learning Effort as the dependent variable to study the associations between L2MSS components and motivated L2 learning (Al-Shehri, 2009; Csizer & Kormos, 2009; Csizer & Lukas, 2010; Papi, 2010; Ryan, 2009; Taguchi, Magid, & Papi, 2009; You & Dörnyei, 2014; You, Dörnyei, & Csizér, 2016). The results of these studies are mainly consistent in recognizing the L2 Learning Experience and Ideal L2 Self as the successful predictors of intended learning effort. However, regarding Ought-to L2 Self, the results are inconsistent. In accordance with these findings, it has been argued (Teimouri, 2017; Papi, 2018) that to see motivation as energy is not sufficient. Rather, in order to grasp the descriptive nature of motivation, looking at the quality of individuals' motivated learning behavior is crucial (Higgins, 2011). Motivation-as-quality perspective can actually help us understand how different self-regulatory strategies chosen by individuals assist them in reaching their goals and affect their motivation in L2 learning processes and outcomes. Papi et al. (2019) proposed a new, revised 2×2 model of L2MSS.

According to these theories, individuals generally have two tendencies in their behavior: They either want to focus on positive results and approach their desires and pleasures (promotion-oriented) or they concentrate on the non-existence of negative results and avoid difficulties, pains, and problems (prevention-oriented). Moreover, individuals with promotion and prevention orientations have specific characteristics and personality traits; for instance, people with a promotion system are obsessed with strong ideal selves, finding ways to success, achievements, and personal growth.

Another significant difference between individuals with promotion and prevention orientations is their quality of the motivated learning behavior, i.e., the variety of strategies they adopt to achieve their goals. According to Higgins (1997), there are two strategic tendencies between persons: Eager and Vigilant strategies. Individuals who utilize eager strategies, which are linked to the promotion system, want to approach their desired purposes by exploiting and seizing every chance and opportunity they get, while individuals who utilize vigilant strategies, which are linked to the prevention system, consider realizing their final purpose by not making mistakes, avoiding negative results, and taking cautious, safe and vigilant approaches.

Papi et al. (2019) argued that learners with ideal L2 selves typically utilize eager strategies, while learners with ought L2 selves dominantly resort to vigilant strategies. With the new questionnaire they developed based on the promotion and prevention system, they were able to indicate that the new revised 2×2 model of L2MSS is more reasonable than Dornyei's classic L2MSS (2009) and Teimouri's model (2017).

L2 Vision, Motivated Learning and Proficiency

Components of future-oriented motivation are expected to be associated with L2 learning achievement. However, the effect of visions on L2 learning behavior and L2 achievement hinges on the way L2 achievement is operationally defined. While English course grades have been used as the typical measures of L2 achievement (Dornyei & Chan, 2013; Hiver & Alhooie, 2020; Kim & Kim, 2011; Papi & Khajavi, 2021), such other measures of L2 achievement as university entrance exam scores (Tashakkori & Kim, 2020), TOEFL test scores (Yashima, 2017), IELTS scores (Moskovsky, 2016) and C-Test scores (Lamb, 2012) have also been used as the criterion measure. These studies have considered intended learning effort (an indicator of motivated learning behavior) as intervening between the three elements of L2MSS and L2 proficiency.

Most of these studies have demonstrated a remarkable positive association between the ideal self and Intended Learning Effort (ILE) and a weak or non-significant relationship between the ought-to self and ILE (Al-Hoorie, 2018; Hiver & Al-Hoorie, 2020; Lamb, 2012; Tashakkori & Kim, 2020; Teimouri, 2017; You & Dornyei, 2014). Some studies have also reported a significant positive impact of Learning Experience on ILB (e.g., Lamb, 2012). The findings concerning the relationship between motivated learning behavior and L2 proficiency have been inconsistent, ranging from a non-significant link (e.g., Hiver & Al-Hoorie, 2020) to a trivial significant relationship (Ghanizadeh & Jahedizadeh, 2017; Kim & Kim, 2011) to significant negative connection

(Moskovsky, 2016) and significant positive relationship (Tashakkori & Kim, 2020). The results concerning the direct relationship between L2MSS components and L2 proficiency have been equally inconsistent. While Yashima, Nishida, & Mizumoto (2017) have reported a positive impact of both ideal and ought-to selves on L2 proficiency, Al-Hoorie (2018) and Hiver and Al-Hoorie (2020) found a feeble relationship between L2 proficiency and ideal self. Al-Hoorie (2018) also reported a negative relationship between L2 proficiency and ought self.

In an attempt to account for these inconsistent findings, a set of investigations resorted to the prevention/promotion components of the L2 self-system as outlined in the revised model of L2MSS. In this line of research, Papi et al. (2019) verified a strong association between ought/own self and L2-motivated behavior. On the other hand, they indicated a positive predicting power for ideal L2 self/own in determining Eager L2 strategies and ought L2 self/own in determining Vigilant L2 use. However, these conceptualizations have remained unsupported with sufficient empirical support. In one of the rare attempts to frame the interrelations between self-components and L2 proficiency in the revised L2MSS model, Papi and Khajavi (2021) reported that learners with different qualitative motivated behaviors achieve different levels of proficiency. This shows that the quality of the motivated learning behavior, which is determined by employing different strategies by L2 learners, is as significant as the quantity of the motivated behavior, like the Intended Learning Effort.

Emotions as Correlates of L2 MSS and L2 Proficiency

According to Higgins (1987), when our present self and our ideal/ought selves have so much difference with each other, we try to bridge the gap or diminish the discrepancy between the two self-images because it stimulates mental and emotional discomfort. Getting closer to the ideal selves causes the student to experience “elation-related emotions” (Papi & Khajavi, 2021), such as happiness. On the other hand, the discordance between the actual and ideal selves ends up in depression-related emotions such as disappointment and sadness. Similarly, getting closer to the ought self leads to “quiescence-related emotions” such as safety and peace, while the gap between the actual and ought selves causes “agitation-related emotions” such as fear and anxiety (Papi & Khajavi 2021). As Klenk, Strauman, and Higgins (2011) have argued, not progressing toward promotion goals may cause the student to experience “dejection-related emotions,” while moving toward any promotion goals can cause the students to experience “elation-related emotions”. Therefore, based on Self-Discrepancy Theory, we hypothesize that ideal L2 selves and L2 enjoyment will have a positive relationship with each other, while boredom and ideal L2 selves will be negatively correlated. Also, a positive correlation is expected between ought selves and boredom according to the theory, which is being tested here.

Regarding the impact of vision-related selves on L2 enjoyment, Teimouri (2017) showed that there was a remarkable association between ideal L2 self and Enjoyment ($\beta=0.56$), whereas ought-to L2 self/own had a tenuous impact on L2 joy ($\beta=0.12$). Ought-to L2 self/others lacked any significant influence on L2 Enjoyment ($\beta=-0.01$). Papi and

Khajavi (2021) utilized the new revised 2×2 model of L2MSS and L2 Enjoyment as the positive emotion in their study and found that ideal L2 self/own had a positive effect on Enjoyment ($\beta= 0.74, p<0.001$). However, other components of the new L2MSS model, i.e., the ‘Other’ aspect of the ideal L2 self and both ‘Own’ and ‘Other’ aspects of the ought-to L2 self, did not predict Enjoyment significantly. Moreover, L2 Enjoyment substantially impacted Eager L2 Use by learners ($\beta= 0.72, p<0.001$). Those learners who utilized vigilant L2 strategies did not experience the positive emotion of Enjoyment in the process of their L2 learning ($\beta=-0.26, p<0.001$).

A new era began when positive psychology emerged in L2 studies (MacIntyre & Mercer, 2014), and since then, an increased interest in the variety of emotions has been witnessed. One of the significant and prevalent emotions among the learners of L2, which has not been paid enough empirical attention in research yet, is Boredom. There is not so much known about this “silent, aversive emotion” (Derakhshan, Kruk, Mehdizadeh, & Pawlak. 2021, p.1), and it has been generally ignored by most scholars.

Traditionally, motivation is seen as a trait-like characteristic that is static and can solely exist in isolation from cognitive and affective factors. However, one view from CDST perspective is that the tripartite system of humans, i.e., motivation, cognition, and emotions, are not separable and they are in an interwoven cycle of cooperating and collaborating with each other. The hypothesized model is indicated in Figure 1.

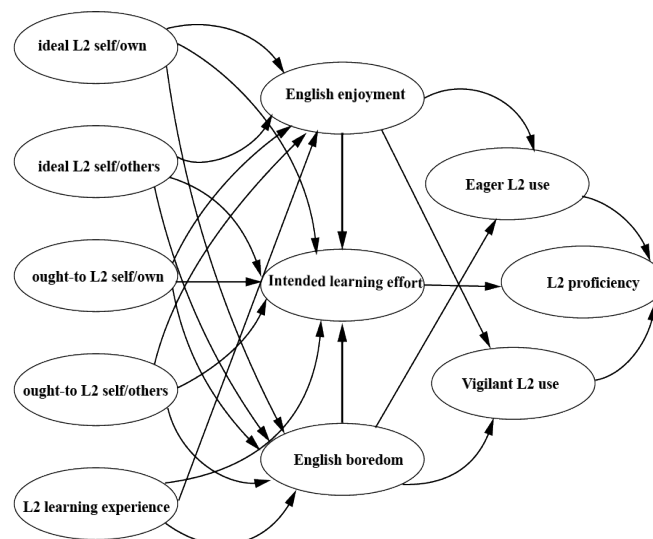


Figure 1. *The hypothesized model of revised L2MSS, L2 emotions, motivated learning behaviors, and L2 proficiency*

Method

Design

This study is one of the few investigations in resorting to structural equation modeling to establish a relationship between emotions and the 2×2 model of L2MSS using an objective measurement of students' English proficiency. Our study consists of four manifold layers: L2 motivation components (revised L2MSS elements), Motivated Learning Behaviors (quantity and quality), L2 emotions (Enjoyment and Boredom), and L2 Proficiency.

Participants

350 Iranian EFL learners (male: 47.7%, female: 52.3%) who were taking an actual TOEFL took part in this study voluntarily. They were recruited from six official centers of Educational Testing Service (ETS) in Tehran and Tabriz, namely Tabriz University, Khatam, Amir Bahador, Alame Sokhan, Sanjesh, and Zaban Negar TOEFL centers in Iran. Volunteers majored in engineering (63.7%), humanities and arts (26.9%), sciences (8.9%), and unknown (0.5%), and their age range was 19-43 (M= 28.57, SD= 4.44). The participants had studied English in private language institutions, universities, and schools for less than 5 years (55.7%), between 5 and 10 years (21.1%), and for more than 10 years (15.8%). 7.4% of students had no experience of studying English in institutions and preferred self-study.

Instruments

Different variables of the study were measured with the following instruments:

- 1. L2 Selves:** This study used Papi et al.'s (2019) and Papi and Khajavi's (2021) questionnaires, which are designed with respect to Higgins' Promotion and Prevention system, to measure both Own and Other aspects of Ideal and Ought-to selves. In addition, to measure the L2 Learning Experience of learners, we employed the five-item scale from Taguchi et al. (2009) and Papi (2010).
- 2. Quality of the Motivated Learning Behavior:** To assess the qualitative strategies of Vigilant and Eager L2 Use, we utilized Papi et al.'s (2019) and Papi and Khajavi's (2021) scales. Five items were used to assess each of the Eager and Vigilant L2 Use measures.
- 3. Quantity of the Motivated Learning Behavior:** To measure students' Intended Learning Effort, we utilized five selected items of Papi et al (2019).
- 4. L2 Boredom:** To assess learners' Boredom, six items from the Foreign Language Learning Boredom Scale (FLLB) of Li et al. (2021) were adopted.
- 5. L2 Enjoyment:** To measure learners' enjoyment in language learning and use, five items from questionnaires already used by Dewaele and MacIntyre (2014), Dewaele, Magdalena, & Saito (2019), Teimouri (2017), and Papi and Khajavi (2021) were adopted.
- 6. L2 Proficiency:** Learners' L2 proficiency was tested with total scores of the participants in actual TOEFL iBT (Internet-Based) tests.

Procedure

The administration dates of TOEFL exams in the visited target centers in Tehran and Tabriz were identified using ETS website. The participants' contact information was obtained from the administration centers as reported in their ETS profile. The reports of the grades actually took about 5 or 6 days after the exam to be ready. As a result, within one week after the administration of the TOEFL exam, an online questionnaire link, which was constructed via Google Docs, was sent to the participants through social media (Whats App and Telegram). In the demographics section, the participants reported their age, gender, and experience of learning English in institutions, schools, and universities. The participants' responses to the questionnaire items made up the data for the confirmatory analysis of the model presented in the present study. The data were committed to the SPSS and MPlus software for the analysis.

Data Analysis

Structural equation modeling (SEM) was run in Mplus software (Muthén & Muthén, 1998-2017) to see into our conceptual model. First, the collected data were imported into SPSS software to examine missing data, outliers, and normality. Cronbach's alpha (α) and omega (ω) were used to assess the reliability of the variables and composite reliability of the scales, respectively. We then ran confirmatory factor analysis (CFA) to ensure the construct validity, which includes checking measurement invariance, convergent, and discriminant validity. Goodness-of-fit indices helped us establish model fit in CFA and SEM.

Results

Data Preparation for SEM and CFA

To prepare our data for CFA and SEM, in the first step, the missing data were checked by full information maximum likelihood estimation (FIML). In the second step, we analyzed the outliers. We identified 7 multivariate outlier cases. In total, 12 univariate and multivariate outliers were discovered and removed, as a result of which 338 participants remained for CFA and SEM analyses.

The univariate and multivariate normality of our data were also controlled. To check the univariate normality, we relied on Kim's (2013) recommendation that, for large-sized samples ($N > 300$), we can solely depend on Skewness and Kurtosis to find out about univariate normality. Skewness and Kurtosis values should be no higher than 2 and 7, respectively, to claim that the observed data have univariate normality.

We also checked multivariate normality by taking advantage of the R package offered by Korkmaz et al. (2014). Among the three tests proposed by Korkmaz, Göksülük, & Zararsiz. (2014), we utilized Mardia's test in R software (Version 2.15.2; Team, R. C. 2014). The results of Skewness (18.29, $p < 0.001$) and Kurtosis (175.06, $p < 0.001$) demonstrated that our data lacked multivariate normality. The absence of multivariate

non-normality was handled in Mplus (explained below) to have accurate confirmatory factor analysis (CFA) and SEM correlations.

Descriptive statistics and reliability check

The descriptive statistics of our constructs are shown in Table 1. To understand the differences between means of constructs, we conducted a paired-sample t-test using SPSS. Generally, most of the quantitative studies depend on p-values (Sullivan & Feinn, 2012), which only indicates statistical significance. However, we also calculated effect sizes manually for our t-test using Cohen’s d (Cohen, 2013).

We followed the framework offered by Plonsky and Oswald (2014) to interpret the effect sizes, according to which $0.6 \leq d < 1$ shows a small effect size, $1 \leq d < 1.40$ a medium effect size, and $d \geq 1.40$ a large effect size. The d-values falling below 0.6 are considered to have an insignificant effect size.

Table 1.
Descriptive statistics, reliability check, and AVE of the constructs

	N	Mean	SD	Variance	α	ω	AVE
Ideal Own	338	4.3935	0.83376	0.695	0.923	0.9266	0.7178
Ideal Others	338	3.6280	0.89555	0.802	0.847	0.8602	0.6088
Ought Own	338	3.9514	0.86716	0.752	0.875	0.8679	0.6250
Ought Others	338	2.9305	0.95748	0.917	0.872	0.8811	0.6501
L2Experience	338	3.7922	0.79043	0.625	0.827	0.8254	0.4864
Intended	338	3.9408	0.76623	0.587	0.852	0.8465	0.5324
Eager	338	3.5589	0.85244	0.727	0.856	0.8337	0.5041
Vigilant	338	2.5331	0.91173	0.831	0.853	0.8438	0.5213
Enjoyment	338	4.0586	0.84249	0.710	0.914	0.9088	0.7149
Boredom	338	2.2072	0.91235	0.832	0.887	0.8830	0.6036
L2Proficiency	338	93.62	12.266	150.443	assured	assured	-----

Furthermore, we measured the reliability of our constructs. To ensure that our scales have internal consistency, we relied both on Cronbach’s alpha (α) omega (ω) in SPSS. As is apparent from Table 1, all of the scales have excellent reliability.

Confirmatory Factor Analysis

To have a confirmation of model fit in CFA, goodness-of-fit indices were used. Mplus offers four chief indices: 1) Tucker-Lewis index (TLI) 2) comparative fit index (CFI) 3) root mean square error of approximation (RMSEA) and 4) standardized root mean square residual (SRMR). According to Hu and Bentler (1999), CFI and TLI values above 0.9 and 0.95 indicate sufficient and very good fit to the data, respectively, and RMSEA and SRMR values below 0.08 and 0.06 indicate respective sufficient and excellent fits. Apart from the CFI, TLI, RMSEA, and SRMR, we also relied on χ^2/df , of which according to Kline (2015), values between 1 and 3 are the best ratio for model fit.

Table 2.
Goodness-of-fit indices for CFA and final SEM model

	χ^2	df	χ^2/df	CFI	TLI	RMSEA (90% CI)	SRMR
Revised L2MSS	355.375	196	1.813	0.956	0.949	0.049 [0.041, 0.057]	0.045
L2 Emotions	51.323	23	2.231	0.977	0.964	0.060 [0.038, 0.083]	0.023
Motivated Learning Behaviors	121.657	83	1.465	0.982	0.977	0.037 [0.022, 0.051]	0.036
Final SEM Model	1863.586	990	1.882	0.907	0.899	0.051 [0.048, 0.055]	0.052

Furthermore, since our data lacked multivariate normality, it needed to be handled before we ran CFA and SEM in Mplus. In this study, we took advantage of MLR to deal with non-normality. We examined the factor loadings in revised L2MSS, L2 emotions, and motivated learning behaviors. Covariance between errors, proposed by Mplus in the modification index, was also included to improve goodness-of-fit indices. Figures 2, 3, and 4 are the standardized factor loadings of L2 emotions, revised L2MSS, and motivated learning behavior, respectively. In addition, Table 2 indicates the goodness-of-fit indices accordingly.

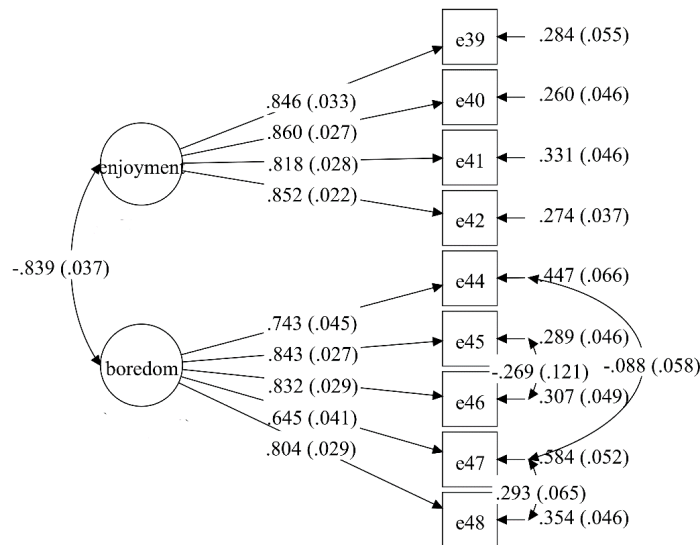


Figure 2. Results of CFA analysis for L2 Emotions with standardized estimates

As it is apparent from figures 2, 3, and 4, all of the factor loadings are above 0.5, which indicates that the constructs in this study have convergent validity in regard to factor loadings. One thing that should be noted here is that while examining the factor loadings in Mplus, three items had factor loadings below 0.5. We omitted one item from Ought/Own (Item 13: If I don't work on my English, it will negatively affect my social status), one item from Enjoyment (Item 43: I feel happy in English classes), and one item from Boredom (Item 49: My mind begins to wander in the English classes) from further analysis. In addition, Table 2 demonstrates the excellent fit of the CFA models to the data.

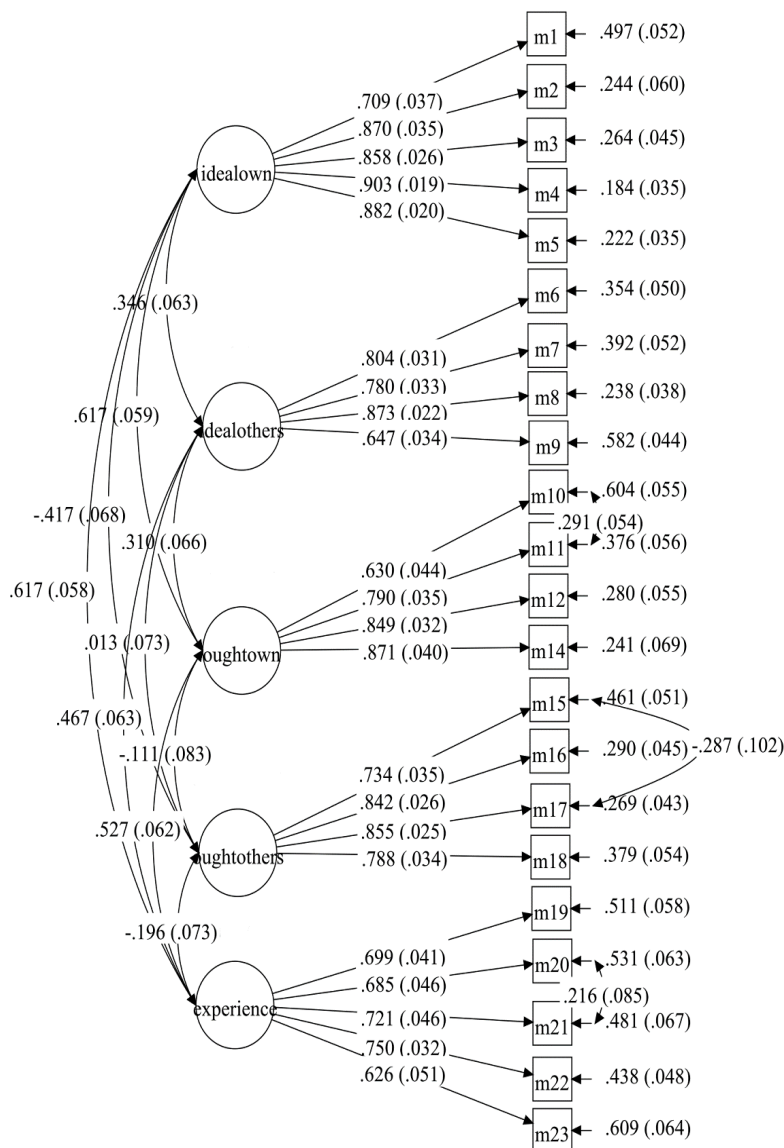


Figure 3. Results of CFA analysis for Revised L2MSS with standardized estimates

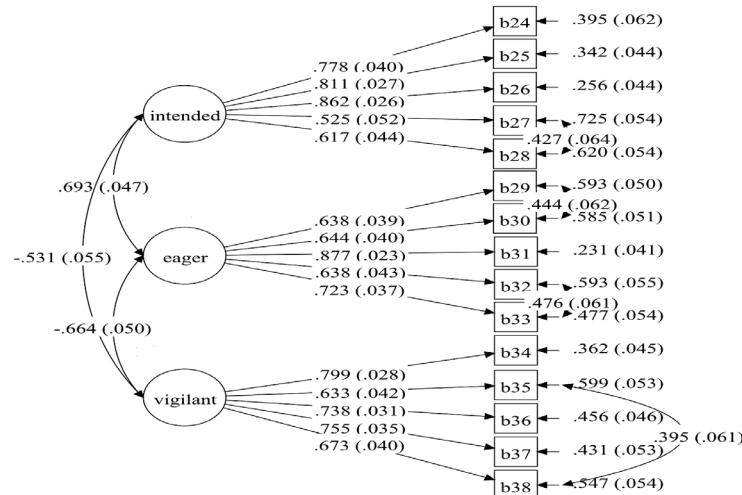


Figure 4. Results of CFA analysis for Motivated Learning Behaviors with standardized estimates

Having checked the divergent validity in terms of factor loadings, we observed divergent validity by calculating composite reliability (ω). Since SEM software packages do not calculate composite reliability, we did it manually utilizing Joreskog's rho Formula 1 (Fornell & Larcker, 1981). The omega values can be seen in Table 1.

$$\rho_{\eta} = \frac{\left(\sum_{i=1}^p \lambda_{yi}\right)^2}{\left(\sum_{i=1}^p \lambda_{yi}\right)^2 + \sum_{i=1}^p Var(\epsilon_i)} \quad (1)$$

We then examined divergent validity utilizing average variance extracted (AVE). The purpose of AVE is to ensure that the variance of latent constructs is larger than the variance of measurement error. Since SEM software bundles do not calculate AVEs for each construct, we did it manually using the formula 2 offered by Fornell and Larcker (1981). The rule of thumb is that constructs should have at least 0.5 or higher AVE (Fornell & Larcker, 1981). AVE values can be seen in Table 1, which clearly illustrates that all of the constructs have an acceptable AVE above 0.5 (except for the L2 learning experience, which is 0.48).

$$\rho_{vc(\eta)} = \frac{\left(\sum_{i=1}^p \lambda_{yi}^2\right)}{\left(\sum_{i=1}^p \lambda_{yi}^2\right) + \sum_{i=1}^p Var(\epsilon_i)} \quad (2)$$

Our examination of divergent validity utilizing average variance extracted, factor loadings, and composite reliability showed that the constructs of the study had divergent validity. The next step was to investigate the discriminant validity of our scales.

Table 3.
Latent correlation matrix for variables

	1	2	3	4	5	6	7	8	9	10
1. Ideal Own	-									
2. Ideal Others	0.313**	-								
3. Ought Own	0.514**	0.247**	-							
4. Ought Others	-0.388**	0.038	-0.043	-						
5. L2 Experience	0.547**	0.406**	0.435**	-0.167*	-					
6. Intended	0.660**	0.434**	0.559**	-0.257**	0.601**	-				
7. Eager	0.508**	0.275**	0.324**	-0.274**	0.528**	0.574**	-			
8. Vigilant	-0.542**	-0.174*	-0.299**	0.351**	-0.371**	-0.446**	-0.544**	-		
9. Enjoyment	0.700**	0.372**	0.486**	-0.328**	0.674**	0.747**	0.610**	-0.510**	-	
10. Boredom	-0.634**	-0.353**	-0.432**	0.444**	-0.582**	-0.668**	-0.534**	0.567**	-0.763**	-
11. L2Proficiency	0.594**	0.183**	0.363**	-0.306**	0.404**	0.507**	0.548**	-0.477**	0.469**	-0.534**

Note: **p< 0.001, *p<0.01

Discriminant validity determines whether the constructs of a study are amply different and distinct from each other. In other words, there is no considerable overlap between the items used to measure different scales in accordance with Heir et al. (2010). Since we needed to know the correlation of a scale with other scales, latent correlation matrixes for all variables were analyzed in Table 3. We calculated the square root of AVE for each construct (Ideal Own = 0.847, Ideal Others= 0.780, Ought Own= 0.790, Ought Others= 0.806, L2 Learning Experience= 0.697, Intended= 0.729, Eager= 0.710, Vigilant= 0.722, Enjoyment= 0.845, Boredom= 0.776), and compared these values with the correlation of that construct with other scales. It was found that all the scales had discriminant validity except for Intended Learning Effort, whose square root of AVE (0.729) was negligibly lower than its correlation with Enjoyment (0.747).

The Structural Model

The structural model is displayed in Figure 5. Non-significant paths have been highlighted in red color. Goodness-of-fit indices show that the model fits the data sufficiently: $\chi^2 = 1863.586$, $df = 990$, RMSEA= 0.051, CFI= 0.907, TLI= 0.899, 90% CI [0.048, 0.055], SRMR= 0.052. We divided the correlations between constructs into four different phases. In addition to calculating effect sizes in SEM, we took advantage of Cohen's f^2 (Cohen, 1992). Since SEM software packages do not calculate Cohen's f^2 , we did it manually using the Formula 3. The results of correlations between constructs are elucidated meticulously below.

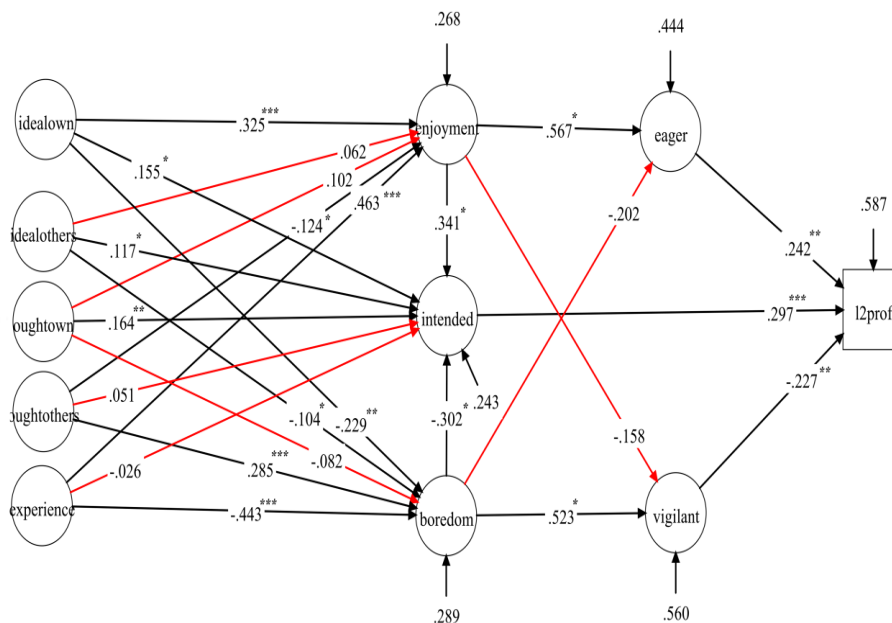
$$f^2 = \frac{R^2}{1 - R^2} \tag{3}$$

Regarding the correlations in the first phase, Ideal/Own positively correlated with Intended Learning Effort ($\beta = 0.155$, $p < 0.05$, $R^2 = 0.024$, 95% CI [0.00, 0.09], $f^2 = 0.024$, a small effect size); Ideal/Others had a significant positive impact on Intended Learning Effort ($\beta = 0.117$, $p < 0.05$, $R^2 = 0.013$, 95% CI [0.00, 0.04], $f^2 = 0.013$, a negligible effect size);

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, for exact p values

Ought/Own positively correlated with the Intended Learning Effort ($\beta = 0.164$, $p < 0.01$, $R^2 = 0.026$, 95% CI [0.00, 0.08], $f^2 = 0.026$, a small effect size). Ought//Others and L2 Learning Experience did not have a significant impact on Intended Learning Effort, and their p-values were higher than the 0.05 threshold.

Regarding the correlations in the second phase, in the case of L2 Enjoyment, Ideal Own positively predicted L2 Enjoyment ($\beta = 0.325$, $p < 0.001$); Ought Others had negative impact on L2 Enjoyment ($\beta = -0.124$, $p < 0.05$); L2 Learning Experience positively predicted L2 Enjoyment ($\beta = 0.463$, $p < 0.001$); The impact of Ideal/Others and Ought/Own on L2 Enjoyment turned out to be insignificant. In the case of L2 Boredom, Ideal Own was a negative predictor of L2 Boredom ($\beta = -0.229$, $p < 0.01$); Ideal/Others had a significant negative impact on L2 Boredom ($\beta = -0.104$, $p < 0.05$); Ought/Others had a positive impact on L2 Boredom ($\beta = 0.285$, $p < 0.001$); L2 Learning Experience was a negative predictor of L2 Boredom ($\beta = -0.443$, $p < 0.001$); Ought/own did not have any significant impact on L2 Boredom, and its p-values were higher than the 0.05 threshold.



About the correlations in the third phase, L2 Enjoyment positively determined Intended Learning Effort ($\beta = 0.341$, $p < 0.05$); L2 Enjoyment had a significant positive impact on Eager L2 Use ($\beta = 0.567$, $p < 0.05$); L2 Boredom negatively predicted Intended Learning Effort ($\beta = -0.302$, $p < 0.05$), and finally L2 Boredom had a significant positive impact on Vigilant L2 Use ($\beta = 0.523$, $p < 0.05$). Also, L2 Enjoyment and L2 Boredom did not have any significant impact on Vigilant and Eager L2 Use, respectively.

As to correlations in the last phase, Intended Learning effort significantly and positively predicted L2 Proficiency ($\beta = 0.297$, $p < 0.001$); Eager L2 Use positively influenced L2 Proficiency ($\beta = 0.242$, $p < 0.01$), and Vigilant L2 Use had a significant negative impact on L2 Proficiency ($\beta = -0.227$, $p < 0.01$).

Discussion

First Phase: Effects of Revised L2MSS Components on Intended Learning Effort

With regard to research question 1, Ought L2 Self/Own most confidently predicted Intended Learning Effort, after which came Ideal L2 Self/Own and Ideal L2 Self/Others. Moreover, the impact of Ought L2 Self/Others and L2 Learning Experience on Intended Learning Effort was not significant. These findings have no resemblance to the classic L2MSS studies (e.g., Al-Shehri, 2009; Csizer & Kormos, 2009; Csizer & Lukas, 2010; Papi, 2010; Taguchi et al., 2009; You & Dornyei, 2014; You et al., 2016) since in all these studies, Ideal L2 self from the standpoint of “own” and L2 Learning Experience appeared to be the strongest determiners of Intended Learning Effort.

These results can be justified from two points: According to Dornyei and Ushioda (2011), there are certain conditions necessary for the ideal selves to have their full impact on behavior, such as procedural strategies, effective planning, and self-regulation strategies. We are not sure whether the participants in our study had the necessary conditions to fully take advantage of their ideal L2 self/own, and just imagining an ideal L2 self is not adequate. Another point that should be taken into account regarding the predictive power of ought L2 self/own over ideal L2 self/own is related to the specific characteristics of our participants as TOEFL test takers whose main purpose was to get the acceptable TOEFL grade and apply to their favorite universities. They had invested lots of time, energy, and money to prepare for the exam, and in case of failure in the exam, they would face negative academic and financial outcomes. As a result, their ought L2 self/own was a stronger motivator and dominated their Ideal L2 self/own. Regarding the weaker predictive power of ideal L2 self/others and the non-significant power of ought L2 self/others, according to Deci and Ryan’s (2004) self-determination theory, intrinsic types of motivation are more powerful than extrinsic types.

Although the results about L2 selves in our study are in contrast with classic L2MSS studies, they are in harmony with Papi et al. (2019), who proposed the revised L2MSS with modifications in classic L2MSS questionnaire items to demonstrate that ought selves can have as much impact on motivation as ideal selves (Higgins, 1987, 1997). Finally,

about the non-significant effect of the L2 learning experience, first of all, although there was no direct effect of the L2 Learning Experience on Intended Learning Effort, the L2 Learning Experience had a huge impact on the Enjoyment of L2 learners, which then predicted Intended Learning Effort significantly. So, there was an indirect effect of the L2 Learning Experience. This is understandable since, according to Higgins (1987), motivation provokes emotions, and emotions come before actions and behaviors. Also, as the participants of the study were TOEFL test takers, their ideal and ought selves may have dominated their past experience of learning a second language. They valued mostly their visions, advancements, hopes, and avoidance of negative outcomes than their past L2 Learning Experiences, such as their teachers, learning environment, curriculum, and peers to get an acceptable grade in the exam.

Second Phase: Effects of Revised L2MSS Components on L2 Emotions

Regarding research question 2, firstly, we found that ideal L2 self/own had a positive impact on L2 Enjoyment of learners. This result is similar to the findings of Teimouri (2017), MacIntyre and Vincze (2017), and Papi and Khajavi (2021). According to Higgins' Self-Discrepancy Theory (1987), getting closer to the ideal self causes the student to experience such emotions as joy and happiness. Moreover, ideal L2 self/own determined L2 Boredom negatively. It is logical that those L2 learners who peruse their ideal L2 selves and are mostly concerned with advancements, hopes, and wishes will not experience feelings like Boredom. This piece of finding is understandable with regard to the predictions made by self-discrepancy theory.

Secondly, ought L2 self/others had a positive impact on L2 Boredom and a negative impact on L2 Enjoyment in contrast to Papi and Khajavi (2021), who had reported no significant relationship. It seems that those learners who are influenced by the expectations and evaluations of other people are more prone to experience emotions like Boredom and not positive feeling of Enjoyment. It makes sense since other peoples' expectations and evaluations of an L2 learner's potential and abilities have a negative impact on the learner and makes the individual feel more Boredom and less Enjoyment. For instance, Nakamura et al. (2021) have identified negative judgment of peers as one of the causes of Boredom for L2 learners in the classroom.

Finally, we demonstrated that L2 Learning Experience was a positive predictor of L2 Enjoyment, whereas it negatively predicted L2 Boredom. Studies conducted by Dewaele and Dewaele (2020), Dewaele and MacIntyre (2014), and Dewaele, Witney, Saito, & Dewaele (2018) are the prime examples showing the huge positive impacts of L2 Learning Experience such as teachers' attitudes and characteristics on the L2 Enjoyment. On the other hand, studies conducted by Kruk, Pawlak, & Zawodniak (2021), Kruk and Zawodniak (2020), Pawlak, Kruk, & Zawodniak. (2020), and Pawlak, Zawodniak, & Kruk. (2021) have highlighted the negative impacts of such classroom learning experiences as difficult and monotonous L2 tasks or lack of fun and humor by teachers on L2 Boredom.

Third Phase: Effects of L2 Emotions on Motivated Learning Behaviors

As for research question 3, we found that L2 Enjoyment had a significant positive effect on Eager L2 Use, explaining 32% of its variance, and L2 Boredom had a significant positive effect on Vigilant L2 Use, explaining 27% of its variance. Our results are in harmony with Papi and Khajavi (2021), who also found the huge impact of L2 Enjoyment on Eager L2 Use. According to Higgins' Self-Regulatory Theory (1997), those individuals who are motivated by strong ideal selves feel more elation-related emotions like enjoyment, which makes them use more eager strategies toward achieving their goals. That is, these individuals seize every chance they get to improve their L2. Moreover, the L2 Learning Experience had a positive impact on the L2 Enjoyment of learners, and those learners who are happy and satisfied with the overall educational setting tend to utilize more eager strategies than vigilant strategies.

Fourth Phase: Effects of Motivated Learning Behaviors on L2 Proficiency

Regarding research questions 4 and 5, first of all, we found that Intended Learning Effort was a positive predictor of L2 Proficiency. This finding resembles the results of Kim and Kim (2011), Takahashi and Im (2020), and Yashima et al. (2017) but differs from the results of Moskovsky et al. (2016) and Hiver and Al-Hoorie (2020), who found a negative and tenuous link between Intended Learning Effort and L2 Proficiency respectively. This finding of our study is understandable since those L2 learners who invest lots of time and energy and study hard are expected to have much higher L2 Proficiency than those who do not put much effort. In our study, the impact of Intended Learning Effort on L2 Proficiency was higher as opposed to Kim and Kim (2011), Takahashi and Im (2020), and Yashima et al. (2017) since we utilized a real TOEFL test as a measure of proficiency. Thus, they definitely put much effort into the exam because of the time, energy, and money they invested in this exam. However, in other studies, the L2 proficiency test was just an experimental test that participants probably did not give much importance to its results. Secondly, we found that Eager L2 Use had a positive impact on L2 Proficiency, and Vigilant L2 had a negative impact on L2 Proficiency. This is in line with the findings of Papi and Khajavi (2021), and it is a perfectly logical finding since those individuals who utilize Eager strategies seize every chance and opportunity they can get in order to maximally improve their L2.

As was seen in this study, the promotion and prevention system (Higgins, 1997, 1998) leads students to pursue different selves and emotions and follow different behavioral patterns, such as Eager and Vigilant L2 use. The superiority of the promotion system was shown in this study since it leads to ideal selves, positive emotions like Enjoyment, and Eager L2 Use, which has a beneficial influence on the L2 Proficiency of students. The results of this study can have outstanding ramifications regarding motivational strategies (Dornyei & Ushioda, 2011, p. 103), self-regulation, and learning strategies. EFL teachers' balanced motivational practice will be ensured by using an optimal amalgam of promotion and prevention (approach and avoidance) motivational strategies leading to optimal learner motivation (Dornyei & Kubanyiova, 2014).

In accordance with Regulatory Focus Theory (Higgins, 1997, 1998), teachers can develop motivational strategies that mostly promote a promotion-oriented approach since this approach increases students' risk-taking tendencies, need for feedback, and willingness to take every opportunity to practice what they have learned. Therefore, teachers can design manifold motivational strategies or specific tasks to energize learners to approach their learning materials eagerly and maximize their use of chances to learn a L2, whereas sometimes instructors can take advantage of specific tasks to alert students so that they vigilantly put effort and avoid negative consequences. For instance, Van Djik and Kluger (2004) have suggested some ways to increase the eager engagement of students in a L2, such as developing tasks that provoke students' creativity and spontaneity, imagination, and risk-taking. Also, giving positive feedback in these kinds of tasks can improve using a language eagerly (Van Djik & Kluger, 2011).

Conclusion

The present study examined the revised L2MSS in the context of Iran to find out more about the associations between the components of L2MSS, L2 Enjoyment and Boredom, Intended Learning Effort, Eager/Vigilant L2 Use, and L2 Proficiency. In the first place, the results demonstrated that ideal selves and ought selves from the standpoint of "own" influence the effort students invest in learning an L2, which, accordingly, has a positive impact on the proficiency of learners, whereas ideal and ought selves from "other" perspective had lower and non-significant impacts on Intended Learning Effort. Secondly, in accordance with Higgins' Self-Regulatory Theory, the promotion-oriented individuals pursued their ideal selves, specifically ideal L2 selves/own, more than their ought selves, which made them feel more Enjoyment and less Boredom. This, in turn, led to more Intended Learning Effort and more eager use of L2, thereby ending in higher levels of proficiency. Those TOEFL test takers who had good L2 Learning Experience experienced Enjoyment more than Boredom. This feeling of Enjoyment enhanced their Eager L2 use and Intended Effort, which in turn positively affected their L2 Proficiency.

All in all, it seems that if learners want to become proficient in an L2, they should have the courage to pursue their ideal selves, take risks to use the language, leave their comfort zones, and not be afraid to make mistakes, all of which are the characteristics of a promotion-oriented student. This sends a clear message to L2 teachers that learning a second language may inherently be based on promotion-oriented approaches and that teachers should pay more attention to designing tasks, which make L2 learners utilize the language eagerly without the fear of negative outcomes. This study showed that paying attention to the quality of motivated behavior based on Higgins' Regulatory Focus Theory is as important as the quantity of the motivated behavior. Therefore, L2 motivation research should take into consideration L2 learners' quality of motivated behavior along with their emotional and cognitive features to show that motivation is not an isolated concept rather it is interwoven with learners' behaviors, emotions, personality, and learning environment, which all predict achievement and proficiency in language (Roohani, & Mohammadi, 2015).

In this study, we utilized a questionnaire to collect information about L2 learners' motivation, emotions, and behaviors at one point in time. In future studies, researchers can take advantage of qualitative approaches like interviews (see Papi & Hiver, 2020), longitudinal methods, or classroom observation (see Papi & Abdollahzadeh, 2012) to explore the dynamic quality of motivation and emotions. Furthermore, in this study, we utilized total TOEFL scores to measure students' L2 Proficiency and skills of TOEFL were not taken into consideration. Future studies can examine the effects of Intended Learning Effort as well as Eager and Vigilant L2 Use on individual EFL skills.

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