Self-efficacy as a Function of Language Learning Strategy Use

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Authors' contributions

This work was carried out in collaboration between both authors. Author AAZ designed the study, wrote the protocol and supervised the work. Authors AAZ and MG carried out data collection and performed the statistical analysis. Author MG wrote the first draft of the manuscript. Author MG also managed the literature searches and author AAZ edited the manuscript. Both authors read and approved the final manuscript.

Original Research Article

ABSTRACT

The present study investigated the predictive power of language learning strategy types on various types of self-efficacy (general and academic self-efficacy and self-regulatory efficacy). To this end, 147 male and females B. A. level students majoring in English translation and English language teaching were selected. A general proficiency test (MTELP) was administered to homogenize the participants. Other instruments were the Strategy Inventory for Language Learning (SILL), a 12-item General Self-efficacy scale, an 8-item Academic Self-efficacy scale, and an 11-item Self-regulatory Efficacy scale. Three separate stepwise multiple regression procedures were used to analyse the obtained data. The results indicated a positive relationship between affective and memory strategies and general self-efficacy, and a significant but negative relationship between cognitive strategies and general self-efficacy. Moreover, meta-cognitive, compensation, and memory strategies were predictors of academic self-efficacy. The findings also showed that affective and memory strategies had predictive power on self-regulatory efficacy.

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1. INTRODUCTION

Self-efficacy as one of the components of the motivational self-regulated learning, which has a major role in teaching and learning, has received much attention from many researchers [e.g., 1-4]. [5] defines self-efficacy as individual's beliefs in self-capability to organize the performance needed for achievements. In addition, [6,7] state that self-efficacy is the key to students' motivation and efforts. For more than three decades, researchers have investigated the relationship between teachers' capability and students' motivation and achievements. [8,9] conclude that teachers' behavior in the class is related to students' self-efficacy.

Another important factor, which educational researchers have investigated for several decades, is language learning strategies. The findings of studies in the field of language learning strategies help researchers to understand the processes students employ to learn second or foreign language. [10-17] have investigated the relationship between language learning strategies and various factors (e.g. level of proficiency, gender, motivation, attitude, self-regulation, goal orientation, and second language (L2) idioms comprehension).

As mentioned above, many researchers have considered language learning strategies as a factor facilitating the learning process. There have also been many studies on self-efficacy. However, there seems to be a paucity of research on the relationship between language learning strategies and self-efficacy. The purpose of this study is to partially fill this gap and to answer the following research questions.

1. Which language learning strategies are better predictors of general self-efficacy?
2. Which language learning strategies are better predictors of academic self-efficacy?
3. Which language learning strategies are better predictors of self-regulatory efficacy?

2. LITERATURE REVIEW

2.1 Self-efficacy

[18] defines self-efficacy as judgments about individuals' capability to offer a given model of behavior. But, [19]'s definition and measurement of self-efficacy is somehow boarder. They refer to both expectancy for success and judgments about individuals' ability to perform a task and ignore people's skill in doing a task.

[20] divides motivational scales into three components including expectancy, value, and affect. Students' beliefs in doing a task stems from expectancy components. Value and affect components are employed to assess and control the beliefs of self-efficacy for learning. Furthermore, [21,22] claim that self-efficacy beliefs cover people's feeling, thought, motivation, and behavior through four major processes (cognitive, motivational, affective, and selection processes). Moreover, he states that self-efficacy beliefs can be created and strengthened through four major ways: a) mastery experiences b) different experiences supplied by social models c) social or verbal persuasion, and d) reduction of people's stress reactions and change of their negative emotional tendencies. So, [21,23] regard the following factors as the sources of efficacy expectations:

1. Mastery or enactive experience: The most important source of self-efficacy is performance outcomes, which are related to individual's achievement and failure in doing a task. If a person experiences success, self-efficacy is to be increased; when an individual cannot be successful in doing a task, one's self-efficacy will be low in that particular area [24].
2. Vicarious or modeling experience: This factor is concerned with one's observation provided by social models. In fact, these observations and models are the source of information to form individual's self-efficacy. So, selecting the successful model with a lot of similarities will improve the sense of self-efficacy [5].
3. Verbal or social persuasion: Verbal encouragement is another influential factor which can enhance the sense of self-efficacy. In contract, receiving discouragement can lower self-efficacy [5].
4. Emotional arousal: According to [5], physiological and emotional states are the last sources of self-efficacy. Having feelings of relaxation can lead to a high level of self-efficacy. However, the opposite is also true; if an individual has a racing heart or high blood pressure when

doing a task, it is the sign of having lower beliefs of self-efficacy. So, it can be to debilitating.

In other words, according to [25,26], Bandura's social cognitive theory refers to the interaction among cognitive, behavioral, personal, and environmental factors which determine motivation and behavior. From one perspective, beliefs of self-efficacy could be either a) general self-efficacy or b) academic self-efficacy. General self-efficacy (GSE) refers to self-observation and self-evaluation of an individual's capabilities to accomplish an action and successfully produce outcomes at a given level [27-29]. Regarding, the relationship between general self-efficacy and the lifetime learning tendencies, [30] asserts that having more general self-efficacy leads to more tendencies for one's lifetime learning. To define the concept of academic self-efficacy (ASE), [31] and [27] state that it involves the general concept of efficacy in performing academic tasks successfully. In other words, [32,27,33] define academic self-efficacy as one's beliefs, knowledge, and perceptions to accomplish academic tasks at a given level. From another viewpoint, beliefs of self-efficacy are one of the components of motivational self-regulated learning. In addition, according to [34], Bandura's social cognitive theory shows the significant role of self-efficacy on regulating the cognitive, vicarious, self-regulatory, and self-reflective processes in individuals' development. [35] as well as [36] claim that self-efficacy is related to self-regulation. So, [37] claim that students with high levels of efficacy beliefs can be better self-regulated learners in accomplishing academic tasks.

Additionally, many researchers [e.g., 8, 9] believe that there is a relationship between teachers' self-efficacy and students' self-efficacy. According to [8,38,39,9,40,2,41,42] teacher efficacy is defined as teachers' judgment on their capability to affect students' motivation and improve their achievement. In other words, teachers' beliefs of self-efficacy have been related to their behavior in the classroom which is required to boost students' motivation, efficacy, and achievement, or to students' learning with difficult and unmotivated cases [5,1], or to perform a task in a particular context [43]. Teacher efficacy is measured from two perspectives: a) general teacher efficacy (GTE), in which teachers believe that they can affect students' learning through overcoming the environmental student factors and b) personal teacher efficacy, in which teachers rely upon their personal teaching skills and ability to influence students' learning [1].

A number of studies have been conducted on various aspects of self-efficacy. [38] examined English teachers' efficacy (management, engagement, and instructional strategies) in several schools in Venezuela. To this end, 100 teachers were selected to complete the Teacher Sense of Efficacy Scale developed by [44]. The findings revealed that the correlation between teachers' efficacy and self-reported English proficiency was significant. The results also showed that teachers had higher levels of efficacy for instructional strategies compared to their efficacy for management and engagement.

In a different study, [45] explored the correlation between self-efficacy and academic motivation of prospective teachers. Data were collected through surveys administered to 251 prospective teachers from two universities. The instruments included the Teacher Sense of Efficacy [44], which was adapted into Turkish by [46], and Academic Motivational Scale [47]. The results showed a significant correlation between participants' sense of efficacy and academic motivation.

Moreover, [48] attempted to find the relationship between experience/academic degree and beliefs of self-efficacy among 47 English as Foreign Language (EFL) teachers. Data were gathered by means of a survey. The results of data analysis showed that experienced teachers' global efficacy, efficacy for student engagement, efficacy for classroom management, and efficacy for instructional strategies were higher than those of the novice teachers.

[4] studied the relationship between types of intelligences and self-efficacy. To this end, 148 EFL students were selected. Next, a 100-item Michigan test, Gardner's MI questionnaire, and a 12-item General self-efficacy scale were administered to the participants. The results of multiple regression analyses indicated that musical and linguistic intelligences had predictive power on general self-efficacy.

2.2 Language Learning Strategies

Investigations into language learning strategies can help researchers to discover the processes learners use in second or foreign language learning. According to [49,50,51] the use of

appropriate language learning strategies helps learners to achieve proficiency in the process of L2 learning. [52] believe that the use of suitable language learning strategies may improve learner autonomy and self-direction. Several researchers have considered the role of various types of strategies in education. [51] counted seven types of strategies including memory, cognitive, compensation, meta-cognitive, affective, and social strategies. According to [12], the first three strategies are direct strategies which involve direct learning and need mental processing to process language for various purposes. Memory strategies or mnemonics refer to the mental processes used in internalizing and organizing information in long-term memory and retrieving them in order to communicate. Cognitive strategies include mental processes such as reasoning and analyzing, which make meaning clearer and more understandable in the target language. [51] refer to compensation strategies as those that are used during speaking in order to compensate the gaps in the knowledge of language. [12] puts the second three strategies (meta-cognitive, affective, and social strategies) in another classification and calls them indirect strategies. Unlike direct strategies, indirect strategies manage and regulate language learning without direct contribution. Meta-cognitive strategies aid learners to plan, arrange, monitor, and evaluate the process of their own learning. Affective strategies enable learners to reduce their anxiety and to increase self-encouragement, which originates from self-doubt, in order to manage their feelings, attitudes, and motivation related to language learning. Social strategies are activities such as questioning, assisting, and increasing cultural awareness, which involve other people, to improve language learning. To define the seventh type of strategies (communication strategies), So, [12,53] claim that language learning strategies are vital factors in language learning processes. [12] concluded that language learning strategies lead to self-directed involvement, which can improve communicative competence.

A number of studies have been conducted on language learning strategies and their relationship with different factors in the process of learning. [54] studied the relationship between the students' language efficacy beliefs, attitudes toward English, and the use of language learning strategies among 58 bilingual primary school-aged children. The results showed high correlations between students' efficacy beliefs in

various areas (e.g. speaking, listening, writing, and in general), attitudes to English, and language learning strategies.

[14] examined the effect of motivation on the choice of language learning strategies. To this end, 108 students were selected. Oxford's Strategy Inventory for Language Learning and Gardner's Attitude/Motivation Test Battery were used as data collection instruments. The gathered data were analyzed using six separate one-way ANOVA procedures. The findings of the study showed that the effect of students' level of motivation on their choice of memory, compensation, and affective strategies was statistically significant while its effect on the choice of cognitive, meta-cognitive and social strategies was insignificant.

In another study, [13] investigated the effect of attitude on the choice of compensation and meta-cognitive strategies of EFL learners. The results of ANOVA procedures showed that the effect of attitude on the choice of compensation strategies was statistically significant, whereas the level of attitude had no significant effect on the choice of meta-cognitive strategies.

In addition, [17] studied the relationship between language learning strategies and L2 idioms comprehension. 112 Iranian college students were given the Michigan Test of English Language Learning (MTELP), an idiom comprehension test, and the Strategy Inventory for Language Learning (SILL). Data were analyzed by using multiple regression procedure. The findings revealed that cognitive and affective learning strategies had predictive power on L2 idioms comprehension.

In a different study, [15] studied the predictive power of language learning strategy types on self-regulated learning components among 148 L2 learners. The Michigan Test of English Language Proficiency (MTELP), the Strategy Inventory for Language Learning (SILL), and Motivated Strategies for Learning Questionnaire (MSLQ) were used to obtain data. The gathered data were analyzed using stepwise multiple regression analysis procedures. The result of the study indicated that memory strategies had predictive power on rehearsal self-regulated learning. Meta-cognitive, affective, and memory strategies were also recognized as predictors of elaboration self-regulated learning. In addition, the relationship between meta-cognitive and cognitive strategies and organization self-

regulated learning were statistically significant. Furthermore, the combination of cognitive, affective, compensation, and social strategies as well as affective, compensation, and social strategies had predictive power on critical thinking.

Moreover, [16] examined the relationship between various types of language learning strategies and goal orientation components. 145 B.A level students participated in this research. Michigan Test of English Language Learning (MTELP), the Strategy Inventory for Language Learning (SILL), and Motivated Strategies for Learning Questionnaire (MSLQ) were the instruments of the study. Stepwise multiple regression analyses were used to analyze the obtained data. The findings revealed that meta-cognitive, compensation, and cognitive strategies were predictors of intrinsic goal orientation. Moreover, affective strategies were the best predictor of extrinsic goal orientation. There were also significant relationships between affective, meta-cognitive, and compensation strategies and task goal orientation In addition, the relationships between social and compensation strategies and ability approach goal orientation were statistically significant. Furthermore, social strategies had predictive power on ability avoid goal orientation.

To conclude, as the above-mentioned studies indicate, self-efficacy and learning strategies are significant issues in educational studies, especially in the field of language learning and teaching. However, there appears to be a paucity of research as to the relationships between self-efficacy and language learning strategies. The purpose of this study is to partially fill this gap by investigating the relationship between various types of self-efficacy and different types of language learning strategies.

3. METHODS

3.1 Participants

The participants of the present study were initially 232 male and female B.A. level students at Imam Khomeini International University in Qazvin majoring in English translation and English teaching. After homogenization and the administration of the questionnaires, only 147 homogeneous participants who had answered all of the questionnaires completely were selected as the participants of the study.

3.2 Instruments

The data collection instruments utilized in this study included the following:

1) In order to homogenize the participants, a general proficiency test (MTELP) was administered. The test consisted of 100 grammar, vocabulary, and reading comprehension items in multiple-choice format.
2) To assess the general language learning strategies utilized by L2 learners, a Strategy Inventory for Language Learning with 60 strategy items on a five-point Likert scale from 'Never' to 'Always' was given to the participants. This version of SILL was designed by [12] to collect information about seven types of strategies.
3) The third instrument used to assess the participants' general self-efficacy was the modified version of Sherer's General Self-Efficacy. It included 12 items on a five-point scale from 'strongly disagree' to 'strongly agree' [55]. Sherer's general self-efficacy (SGSES) consists of 17 items [56], but [55] excluded five items and made a 12-item version of the scale.
4) The fourth instrument used to elicit information about the participants' academic self-efficacy, developed by [32], consisted of 8 items. The response format ranged from 'strongly disagree' to 'strongly agree'.
5) The last instrument used to measure the participants' self-regulatory efficacy was Bandura's self-efficacy for self-regulated learning scale consisting of 11 items on a five-point scale ranging from 'strongly disagree' to 'strongly agree'.

3.3 Procedure

To achieve the purpose of the study, the following procedure was followed. First, 232 participants with the aforementioned characteristics were selected. Second, the Michigan language proficiency test was administered. The time duration of this test was 60 minutes. As a result, 147 participants whose scores fell between one standard deviation above and below the mean remained as the participants, and the others were excluded from all subsequent analyses.

Next, the Strategy Inventory for Language Learning (SILL) was given to the students. The

participants were required to answer the questionnaire by choosing from the five-point Likert scale.

Then, the questionnaires for general and academic self-efficacy and self-regulatory efficacy were administered. The participants were required to complete the questionnaires by choosing from among five alternatives ranging from strongly disagree to strongly agree.

To analyse the collected data and to answer the research questions, three stepwise multiple regression analyses were used.

4. RESULTS AND DISCUSSION

4.1 Investigation of the First Research Question

The first question attempted to investigate the relationship between types of language learning strategies and general self-efficacy. To this end, a stepwise multiple regression procedure was run (Table 1), which showed that affective, memory, and cognitive strategies entered into the regression equation.

The result of model summary (Table 2), shows that the affective strategies and general self-efficacy share over 6%, and affective and memory strategies together share above 8% of variance with general self-efficacy. Affective, memory, and cognitive strategies collectively account for 12% of the total variance in general self-efficacy.

Based on Table 3, the results of the ANOVA ($F_{(1,145)} = 11.24$, $p < .05$; $F_{(2,144)} = 7.84$, $p<.05$; $F_{(3,143)} = 7.61$, $p < .05$) show that the predictive power of the three models are significant.

To find out how strong the relationship between the general self-efficacy and each of the predictors is, the unstandardized as well as standardized coefficients of the three models, along with the observed t-values and significance levels were checked. Table 4 shows the results.

Based on Table 4, the first model shows that for every one standard deviation of change in affective strategies score, there will be over .26 of a standard deviation positive change in general self-efficacy score. The second model

shows that when affective and memory strategies are taken together, for every one standard deviation change in affective and memory strategies score, there will be above .21 and .17 of a standard deviation positive change in general self-efficacy score, respectively. The third model shows that when affective, memory, and cognitive strategies are taken together, for every one standard deviation increase in affective, memory, and cognitive strategies scores, there will be about .30 and .27 of a standard deviation increase, and .25 of a standard deviation decrease in general self-efficacy scores, respectively. Meanwhile, all the standardized coefficients are statistically significant.

4.2 Investigation of the Second Research Question

The second question examined the relationship between types of language learning strategies and academic self-efficacy. To this end, a second stepwise multiple regression was run (Table 5), based on which meta-cognitive, compensation, and memory strategies entered into the regression equation as the predictors of academic self-efficacy.

Model summary (Table 6) shows that meta-cognitive strategies and academic self-efficacy share over 16% of variance. Meta-cognitive and compensation strategies together account for approximately 24% of the total variance in academic self-efficacy. Meta-cognitive, compensation and memory strategies together share 26% of variance with academic self-efficacy.

Based on Table 7, the results of the ANOVA ($F_{(1,145)} = 30.54$, $p < .05$; $F_{(2,144)} = 23.97$, $p < .05$; $F_{(3,143)} = 18.10$, $p < .05$) show that the three models are significant.

To see how strong the relationship between academic self-efficacy and each of the predictors is, the unstandardized as well as standardized coefficients of the three models, along with the observed t-values and significance levels were checked. Table 8 shows the results. Based on Table 8, the first model shows that for every one standard deviation of change in meta-cognitive strategies score, there will be over .41 of a standard deviation positive change in academic self-efficacy score.

Table 1. Variables entered/removed[a]

Model	Variables entered	Variables removed	Method
1	affective	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	memory	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	cognitive	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent variable: general self-efficacy

Table 2. Model summary[d]

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics				
					R square change	F change	df1	df2	Sig. F change
1	.268[a]	.072	.066	5.02211	.072	11.242	1	145	.001
2	.314[b]	.098	.086	4.96749	.026	4.206	1	144	.042
3	.371[c]	.138	.120	4.87478	.039	6.529	1	143	.012

a. predictors: (constant), affective, b. predictors: (constant), affective, memory, c. predictors: (constant), affective, memory, cognitive, d. dependent variable: general self-efficacy

Table 3. ANOVA[a]

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	283.546	1	283.546	11.242	.001[b]
	Residual	3657.130	145	25.222		
2	Regression	387.344	2	193.672	7.849	.001[c]
	Residual	3553.332	144	24.676		
3	Regression	542.504	3	180.835	7.610	.000[d]
	Residual	3398.172	143	23.763		

a. dependent variable: general self-efficacy, b. predictors: (constant), affective, c. predictors: (constant), affective, memory, d. predictors: (constant), affective, memory, cognitive

Table 4. Coefficients[a]

Model		Unstandardized coefficients		Standardized coefficients	T	Sig.
		B	Std. error	Beta		
1	(Constant)	24.317	1.734		14.023	.000
	affective	.191	.057	.268	3.353	.001
2	(Constant)	21.014	2.353		8.933	.000
	affective	.155	.059	.217	2.619	.010
	memory	.144	.070	.170	2.051	.042
3	(Constant)	23.682	2.534		9.347	.000
	affective	.219	.063	.307	3.463	.001
	memory	.228	.076	.269	2.985	.003
	cognitive	-.216	.085	-.250	-2.555	.012

a. dependent variable: general self-efficacy

The second model shows that when meta-cognitive and compensation strategies are taken together, for every one standard deviation change in meta-cognitive and compensation strategies score, there will be above .33 and .28 of a standard deviation positive change in academic self-efficacy score, respectively. The third model shows that when meta-cognitive, compensation, and memory strategies are taken together, for every on standard deviation of change in meta-cognitive, compensation, and memory strategies score, there will be over .27, .21, and .19 of a standard deviation positive change in academic self-efficacy score,

respectively. Moreover, all the standardized coefficients are statistically significant.

4.3 Investigation of the Third Research Question

The third question attempted to see which types of language learning strategies are predictors of self-regulatory efficacy. To this end, a third stepwise multiple regression procedure was run (Table 9), which showed that affective and memory strategies entered into the regression equation as the predictors of self-regulatory efficacy.

Based on model summary (Table 10), it can be seen that affective strategies and self-regulatory efficacy share over 19% and affective and memory strategies together share above 24% of variance with self-regulatory efficacy.

Based on Table 11, the results of ANOVA (F $_{(1,145)}$ = 36.27, p < .05; F $_{(2,144)}$ = 24.43, p < .05)

show that the predictive power of both models is significant.

To see the strength of the relationship between self-regulatory efficacy and each of the predictors, the unstandardized as well as standardized coefficients of the two models, along with the observed t-values and significance levels were checked. Table 12 shows the results.

Based on Table 12, the first model shows that for every one standard deviation of change in affective strategies score, there will be over .44 of a standard deviation positive change in self-regulatory efficacy score. The second model shows that when affective and memory strategies are taken together, for every one standard deviation change in affective and memory strategies score, there will be above .37 and .24 of a standard deviation positive change in self-regulatory efficacy score, respectively. Meanwhile, all the standardized coefficients are statistically significant.

Table 5. Variables entered/removed[a]

Model	Variables entered	Variables removed	Method
1	Meta-cognitive	.	Stepwise (Criteria: Probability-of-F-to-enter <=.050, Probability-of-F-to-remove >=.100).
2	compensation	.	Stepwise (Criteria: Probability-of-F-to-enter <=.050, Probability-of-F-to-remove >=.100).
3	memory	.	Stepwise (Criteria: Probability-of-F-to-enter <=.050, Probability-of-F-to-remove >=.100).

a. dependent variable: academic self-efficacy

Table 6. Model summary[d]

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics				
					R Square change	F change	df1	df2	Sig. F change
1	.417[a]	.174	.168	6.08097	.174	30.546	1	145	.000
2	.500[b]	.250	.239	5.81524	.076	14.555	1	144	.000
3	.525[c]	.275	.260	5.73575	.025	5.019	1	143	.027

a. predictors: (constant), meta-cognitive, b. predictors: (constant), meta-cognitive, compensation, c. predictors: (constant), meta-cognitive, compensation, memory, d. dependent variable: academic self-efficacy

Table 7. ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1129.535	1	1129.535	30.546	.000[b]
	Residual	5361.835	145	36.978		
2	Regression	1621.724	2	810.862	23.978	.000[c]
	Residual	4869.646	144	33.817		
3	Regression	1786.838	3	595.613	18.104	.000[d]
	Residual	4704.532	143	32.899		

a. Dependent variable: academic self-efficacy, b. predictors: (constant), meta-cognitive, c. predictors: (constant), meta-cognitive, compensation, d. predictors: (constant), meta-cognitive, compensation, memory

Table 8. Coefficients[a]

Model		Unstandardized coefficients		Standardized coefficients	T	Sig.
		B	Std. error	Beta		
1	(Constant)	21.236	2.495		8.512	.000
	Meta-cognitive	.379	.069	.417	5.527	.000
2	(Constant)	14.551	2.960		4.916	.000
	Meta-cognitive	.306	.068	.336	4.469	.000
	compensation	.287	.075	.287	3.815	.000
3	(Constant)	12.635	3.042		4.153	.000
	Meta-cognitive	.246	.072	.271	3.394	.001
	compensation	.213	.081	.213	2.630	.009
	memory	.211	.094	.195	2.240	.027

a. Dependent variable: academic self-efficacy

Table 9. Variables entered/removed[a]

Model	Variables entered	Variables removed	Method
1	affective	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	memory	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent variable: self-regulatory efficacy

Table 10. Model summary[c]

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics				
					R square change	F change	df1	df2	Sig. F change
1	.447[a]	.200	.195	5.73910	.200	36.272	1	145	.000
2	.503[b]	.253	.243	5.56399	.053	10.271	1	144	.002

a. Predictors: (constant), affective, b. predictors: (constant), affective, memory, c. dependent variable: self-regulatory efficacy

Table 11. ANOVA[a]

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	1194.695	1	1194.695	36.272	.000[b]
	Residual	4775.910	145	32.937		
2	Regression	1512.663	2	756.332	24.431	.000[c]
	Residual	4457.942	144	30.958		

a. Dependent variable: self-regulatory efficacy, b. predictors: (constant), affective, c. predictors: (constant), affective, memory

Table 12. Coefficients[a]

Model		Unstandardized coefficients		Standardized coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	22.383	1.982		11.295	.000
	affective	.392	.065	.447	6.023	.000
2	(Constant)	16.603	2.635		6.301	.000
	affective	.329	.066	.375	4.965	.000
	memory	.252	.079	.242	3.205	.002

a. Dependent variable: self- regulatory efficacy

4.4 Discussion

The findings of the present study are to some extent in accordance with a number of previous studies and contradict others. The findings of the present study lend partial support to [54] showed that the relationship between students' self-efficacy beliefs and language learning strategies is significant. Similar to the findings of this study, [57] found other predictors for self-efficacy beliefs. They reported that musical and linguistic intelligences have predictive power on general self-efficacy. They also reported a significant relationship between spatial/visual intelligences and self-efficacy for self-regulated learning. The findings of the present study, on the one hand, lend support to [58] findings based on which there was a significant positive relationship between language learning strategies and self-efficacy. She reported the direct relationship between teachers' level of self-efficacy and more frequent use of more number of language learning strategies. On the other hand, one of the findings of the present showed that there was a negative correlation between cognitive strategies and general self-efficacy, which is in conflict with [58]'s findings. The present study showed the predictive power of affective and memory strategies on self-efficacy for self-regulated learning. This corroborates the findings of [15], who reported significant relationships between different types of language learning strategies and cognitive self-regulated learning components. Also, in line with the findings of the present study, [16] claimed that language learning strategy types had predictive power on goal orientation components. In contrast with another result of the present study, indicating that affective strategies are predictors of general self-efficacy and self-regulatory efficacy, [17] found that affective strategies have negative relationship with L2 idioms comprehension. From another viewpoint, the findings of [17], reporting a significant positive relationship between cognitive strategies and L2 idioms comprehension, are in conflict with the finding of this study, which showed the negative predictive power of cognitive strategies on general self-efficacy. In line with the findings of present study, [45] showed a significant correlation between self-efficacy and academic motivation. According to the findings of the present study and those of [45], it can be concluded that the relationship between those language learning strategies, which are predictors of self-efficacy, and academic motivation is significant.

Unlike this study, which showed the predictive power of affective strategies on general self-efficacy and self-regulatory efficacy, [59] reported a low correlation between affective strategies and self-efficacy. The high correlation between compensation strategies and self-efficacy, on the other hand, lend support to those of the present study, reporting compensation strategies as a predictor of academic self-efficacy.

A number of factors (e.g., students' level of proficiency, gender, social context, culture, and field of study) may be responsible for the differences between the findings of the aforementioned studies and those of the present study. Unlike [60,61,59], the present study did not take into account the participants' proficiency level and gender differences. In addition, all of the participants of this study were in an Iranian EFL setting. They did not have opportunities to use the target language in real environments. This may be an important factor affecting the participants' use of various strategies and their relationship with different types of self-efficacy. Moreover, the present study was conducted with BA level learners majoring in English. Similar studies with different samples at other proficiency levels, majoring in other fields of study might have come up with different results. Finally, the educational context and the social culture of the Iranian context might have affected the findings of this study.

5. CONCLUSION

The present study attempted to investigate the relationship between language learning strategies and the various types of self-efficacy. The results indicated that affective and memory strategies were the predictors of general self-efficacy, but cognitive strategies had negative predictive power on general self-efficacy. Meanwhile, meta-cognitive, compensation, and memory strategies were found to be predictors of academic self-efficacy. Moreover, affective and memory strategies turned out to be significant predictors of self-regulatory efficacy.

Based on the findings of the present study, it can be concluded self-efficacy and its components are more closely related to some strategies than others. This means that to improve learners' feeling of efficacy, the use of certain strategies should be encouraged. This also implies that probably a cost-benefit approach needs to be adopted with regard to the teaching of strategies. In other words, priority should be given, in the

teaching of strategies, to those that are more strongly correlated with self-efficacy. In addition, given that different strategies are predictors of different types of efficacy, different groups of learners may need to receive instruction on different types of strategies depending on the type of efficacy they need or wish to develop.

Since self-efficacy is closely associated with academic achievement [9,2], the findings of the present study may have implications for teachers as well as students. The findings of the present study can help teachers to find ways to enhance educational performance. Moreover, there is an interaction between self-efficacy and self-regulation [35,36], so it can be useful for students' success in education. In addition, the findings of this study can help teachers and students to implement types of language learning strategies which have predictive power on students' self-efficacy beliefs. If students can believe in their abilities, they will have better performance needed for attainments.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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