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## The relationship between Iranian EFL learners' self-regulatory vocabulary strategy use and their vocabulary size

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### ABSTRACT

Self-regulation is referred to as learners' self-generated ideas and actions which are systematically directed towards achieving educational goals and require learners' active participation in the learning process (Zimmerman & Bandura, 1994). The present study investigated the relationship between Iranian EFL students' self-regulation capacity for vocabulary learning and their vocabulary size. For this purpose, the researchers made use of two main instruments: the self-regulation capacity in vocabulary learning scale developed by Tseng et al. (2006) consisting of five subscales of commitment, metacognitive, emotion, satiation and environment control, and a bilingual vocabulary size test developed and validated by Karami (2012). The results of the data analysis revealed no significant relationship between the two variables measured by these instruments. However, the results of the multiple regressions indicated that the metacognitive control compared to the other subscales made a better contribution to the prediction of learners' vocabulary size. In addition, based on the analysis of variance (ANOVA), which examined and compared the self-regulatory strategy use of learners in different experience groups, the first year students had a higher mean score in their self-regulation capacity, which can possibly be attributed to the strategies they have learnt in their Study Skills courses. Finally, it was suggested that teachers must try to develop self-regulatory power in the learners because their creative effort and informed decisions in trying to improve their own learning are highly important.

**Keywords:** self-regulation capacity; strategy use; vocabulary size; learning experience groups

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## Introduction

Learning a language involves gaining control in and the development of different skills (namely, reading, writing, listening and speaking). Whatever the focus of any instructional program, two features are highly essential to the process of acquiring and using language: vocabulary and grammar (Celce-Murcia, 2001). It is worth mentioning that compared to other aspects of language, vocabulary was initially considered peripheral to the main purpose of target language teaching and was left to a position of secondary importance (Celce-Murcia, 2001; DeCarrico, 2001; Nunan, 2001; Richards & Renandya, 2002; Swan, 2002). However, the emergence of communicative approach to language teaching, advances in the study of lexicon and psycholinguistically-oriented researches about the role of mental lexicon and nature of vocabulary acquisition have led to a kind of renewal and re-thinking of the roles and functions of vocabulary in language pedagogy (Lai, 2005).

In addition, due to the attempts and works published by some prominent figures in the field of language acquisition (e.g., Nation, 1990; Read, 2000; Schmitt, 2000; Singleton, 1999), vocabulary has gained some importance. Hunt and Beglar (2005) believe that due to the importance and significant role of lexicon in aural language processing, speech production, reading and writing, the increased emphasis and interest in the lexicon and researching its various dimensions are highly warranted. Likewise, language teachers have also become more aware of and informed about the indispensable role of lexicon in language learning and effective communication and, hence, have devoted more time and conscious effort to delivering effective instruction on this aspect of language.

Therefore, nowadays vocabulary is considered as one of the basic components of language learning and since lexical items carry the basic information, deficiencies in this aspect of knowledge may affect learners' communication skills (Nation, 2001). In the same vein, Richards and Renandya (2002) considered vocabulary as the key component of language proficiency which can create a foundation for the efficient learning of listening, speaking and writing and deficiencies in this aspect of language may lead to a feeling of incompetence in the learners and may discourage them from learning the language. Therefore, words are recognized as one of the most important aspects of language competence and their acquisition is highly essential for the improvement of the receptive and productive language skills since it is believed that communication doesn't occur without having enough vocabulary.

For most of the researchers, vocabulary knowledge is not a single but a multidimensional and complex construct that involves understanding of a variety of word knowledge and aspects such as meaning, form, register and collocation (e.g., Nation, 2001; Read, 2000). Nation (1990, as cited in Yamamoto, 2014) elaborated upon three main dimensions of lexical competence which are further explicated by nine components: "form (spoken form, written, and word parts), meaning (form and meaning, concept and referents, and associations), and use (grammatical functions, collocations, and constraints on use)" (p. 233). Other researchers in the field of lexical competence investigation have proposed a variety of frameworks to examine lexical knowledge (e.g., Henriksen, 1999; Read 2000; Read & Chapelle, 2001). For instance, based on Henriksen's model, three most central aspects of lexical knowledge are: size (the average number of words a person knows), depth (the quality of their understanding and knowing various associations) and mastery (how well they are comprehended or actively produced). In another framework, Bogaards (2000) has considered word knowledge as having six aspects: (1) form (spoken and/or written), (2) meaning, (3) morphology (derivation and compounding), (4) syntax, (5) collocates, and (6) discourse.

Traditionally, some L2 vocabulary researchers have focused on the intentional (e.g., explicit instruction or memorization) and incidental (e.g., from reading texts) acquisition of lexical items (Hulstijn, Hollander, & Greidanus, 1996). Some experimental studies have been conducted which

have compared L2 receptive and productive vocabulary growth in different learning contexts (e.g., Lee & Muncie, 2006; Paribakht & Wesche, 1997). Another approach adopted by some scholars is examining the self-reported learning strategies of learners with regard to their vocabulary learning experience and trying to establish the link between the vocabulary learning processes and the learning outcomes measured in terms of general competence or vocabulary size (e.g., Fan, 2003; Gu, 2003; Gu & Johnson, 1996; Kojic-Sabo & Lightbown, 1999; Lawson & Hogben, 1996). In fact, most of these researchers have tried to investigate how the learners' strategy use can contribute to or enhance their vocabulary knowledge or general language proficiency. They have reached an attested finding that different levels of vocabulary acquisition in the learners can be attributed to the application of a cluster of certain cognitive and metacognitive regulation strategies (Ma, 2013). Due to the importance of technology and web-based devices in facilitating the acquisition of various language skills and components, some researchers have explored the potentials of Computer Assisted Language Learning (CALL) to provide immediate, individualized and contextualized materials and feedback for the acquisition and long-term retention of vocabulary items (Heilman et al., 2010; Hirschel & Fritz, 2013; Juffs & Friedline, 2014; Zapata & Sagarra, 2007).

To trace the development of and elaborate more on the concept of strategy use in learning, it can be asserted that due to the movements away from teacher-centered approaches to language teaching, more attention has been directed towards the individual learners' endeavors as a more determining factor accounting for success in their learning. Rubin (1975) and Stern (1975) are two of the earliest researchers who advocated the learner-centered approaches to learning and emphasized the facilitative role of employing language learning strategies in enhancing the quality of students' learning. O'Malley and Chamot (1990) define learning strategies as "special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information" (p. 1). However, Schmitt (2010) believes that it is the creative effort of learners while engaged in the learning process and their self-regulatory capacity that enable us to pass judgment and consider them as good language learners with a repertoire of strategies or not. The concept of self-regulation is in line with the idea of autonomy and autonomous learners who attempt to develop independent capacity for learning. In most of the studies conducted in domain of vocabulary learning strategies, the emphasis has been upon cognitive strategies and less attention is directed towards metacognitive and affective factors; however, self-regulated learning emphasizes the essential links between learners' motivational beliefs and the cognitive and metacognitive strategies they apply (Duckworth, Akerman, MacGregor, Salter, & Vorhaus, 2009). Self-regulation capacity is a concept which is broader than learning strategies and encompasses a variety of initiatives and actions on the part of learners. Accordingly, the present study attempts to investigate whether learners' self-regulation capacity in vocabulary learning is a determining factor in accounting for their vocabulary size (which refers to the number of words that language learners at a particular proficiency level may know) or not.

## Literature review

### *Theoretical background*

It is generally believed that learner-related variables, especially the use of learning strategies, can enhance the effectiveness of students' performance on the educational tasks and can lead to success in language learning. According to Oxford's (1990) ideas, "...learning strategies are operations employed by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (p. 8). The majority of the works conducted in the domain of learning strategies have had practical goals such as finding ways to empower and

make the learners more self-directed and independent in their learning process (Tseng, Dornyei & Schmitt, 2006). In fact, these researchers have suggested that internalization of a repertoire of learning strategies can facilitate the learning process and possibly lead to higher language proficiency.

However, some scholars have questioned the validity of such conclusions and have pointed to the fact that the research conducted under the umbrella term of language learning strategies suffers from a number of problems which stem from either fuzziness of definitions of the terms used (e.g., diverse conceptualizations of 'learning strategies') or inherent psychometric characteristics of the assessment instruments (i.e., how to operationalize and measure the constructs) which are applied to collect the necessary data (e.g., Dörnyei & Skehan, 2003; Ellis, 2008). As a result, in spite of having a positive attitude towards the term 'strategic learning', the term learning strategy is frowned upon and rarely appears in the current research publications. Accordingly, Tseng et al (2006), based on the notion of self-regulation, have outlined and elaborated upon a new approach in conceptualizing and assessing strategic learning which emphasizes "the importance of the learners' innate self-regulatory capacity that fuels their efforts to search for and then apply personalized strategic learning mechanisms" (p. 79). In fact, because of lack of theoretical clarification about the concept and nature of language learning strategies, research on self-regulation capacity for learning has gained importance (Dörnyei, 2005). The main justification for conducting research on self-regulated learning has been shedding lights on the learners' personal initiatives, resourcefulness, persistence and sense of responsibility and the main concern is how and why the learners select and use particular strategies (Zimmerman & Schunk, 2001).

Self-regulation refers to learners' self-generated ideas and actions which are systematically directed towards achieving educational goals and require learners' active participation in the learning process (Zimmerman & Bandura, 1994). This concept is broader in nature and encompasses learning strategies and other related micro-processes such as goal setting, strategic planning, self-motivational beliefs (self-efficacy), evaluation and self-reflection, receiving and processing feedback, and establishing a congenial environment. In order to accurately and appropriately operationalize and measure this new concept, Tseng et al. (2006) have developed a new system consisting of five facets: *commitment control* which helps learners preserve and enhance their original goal commitment; *metacognitive control* that assists the learners in monitoring their concentration and reducing any inhibiting factors; *satiation control* which avoids boredom and adds interests to the task; *emotion control* which is related to the management of emotional states or moods and *environment control* which helps the learner control negative environmental influences.

Self-regulation is considered as an aptitude which is improvable and can be influenced by experience and instruction (Winne, 1996). The studies which have examined the relationship between the learners' self-regulatory behavior and their achievement in various domains of learning (e.g., Hong, Pang & Rowell, 2009; Kitsantas, Steen, & Huie, 2009; Kozlowski & Bell, 2006; Oettingen, Honig, & Collwitzer, 2000; Young, 2005) have found a positive relationship between these two constructs. More specifically, it has been determined that academically self-regulated learners and students are "independent in their studies, diligent in listening inside the classroom, focused on doing their task inside the classroom, get high scores in tests, able to recall teacher's instruction and facts lectured in class, and submit quality work" (Magno, 2011, p. 56). In the same vein, it is believed that "learners' previous learning experience can have an effect on the developmental level of self-regulating capacity...and the magnitude of self-regulating capacity will depend on the instigation of the initial appraisal of vocabulary learning experience, with its related motivational state" (Tseng & Schmitt, 2008, p. 362). In addition, researchers maintain that self-regulation capacity has a mediating role between initial motivation and strategy use and can directly affect the learners' strategy use. In order to target the learner trait of self-regulation, as a construct deriving from the field of educational psychology, and to increase the validity of the construct, Tseng et al. (2006) developed a self-regulatory scale situated in the domain of vocabulary (the

detailed explanation is provided below). This instrument is used in the current study to investigate the issues of concern by the researchers.

#### *Related studies on vocabulary learning strategies*

In the past decades, a great number of scholars have investigated and elaborated upon the concept of language learning strategies (e.g., Cohen, 2002; Lan & Oxford, 2003; Macaro, 2001; MacIntyre, 1994; Nunan, 1997; O'Malley & Chamot, 1990; Oxford, 1996). Vocabulary learning strategies are considered a subset of general learning strategies and a number of scholars have investigated this issue in their studies. For example, Gu and Johnson (1996) conducted a large-scale study investigating Chinese university learners' vocabulary learning strategies. The researchers correlated the responses of 850 sophomore non-English majors to a vocabulary strategy questionnaire with their performance on a vocabulary size test and a general proficiency measure. They found significant positive correlations between metacognitive strategies and the two test scores. Gu and Johnson suggested that "students would benefit more if they aimed at learning the language skills rather than just remembering English equivalents of all Chinese words" (p. 659). In a rather similar study, Schmitt (1997) explored the vocabulary learning strategies of 600 Japanese learners from four different age levels through using questionnaire. Three strategies which were used with higher frequency were bilingual dictionary use, verbal and written repetitions. In addition, Wen and Johnson (1997) examined the relationship between a number of learner variables and their vocabulary learning strategies. The findings of the study revealed that the students use psycholinguistic (memory and cognitive) and metacognitive strategies very often. Similarly, Zhang (2001) found that the graduate students use these strategies more frequently than other learners.

It has also been found that learners who consciously use learning strategies and monitor their performance perform better than those who are less cognizant to do so (e.g., Coxhead, 2006; Nyikos & Fan, 2007). The literature has also revealed that the choice and use of vocabulary learning strategies largely depend on a variety of factors such as the learning environment, culture and gender (Jiang & Smith, 2009; Mizumoto, 2010; Nakamura, 2002; Nyikos & Fan, 2007). It has also been reported that "not only did successful learners use a variety of strategies, but they also took a structured approach by engaging in self-initiated learning activities, keeping records of new words, and reviewing them" (Yamamoto, 2014, p. 233). Teachers' methods of instruction, which are the reflection of general language policies, are also believed to affect learners' strategic behavior (Jiang & Smith, 2009).

As for the studies conducted in Iranian contexts, Zarafshan (2002) attempted to identify the reason underlying Iranian EFL learners' reluctance for using metacognitive strategies. He found that opportunities for using such strategies are not provided in educational institutions and the established curriculum does not promote collaborative and social learning needed for social strategies and the instructional programs are formal and teacher-centered. Therefore, in such contexts psycholinguistic (cognitive and memory) strategies were most preferred by the learners. The same finding was achieved by Sarani and Kafipour (2008) who considered psycholinguistic strategy as the most frequently used strategy for the purpose of retaining new words. In another study, Hamzah, Kafipour and Abdullah (2009) found a positive relationship between the vocabulary learning strategies of Iranian undergraduate EFL students and their vocabulary size score. The findings of their study also revealed that Iranian EFL learners are medium strategy users and these strategies are learnt in the study skills courses they pass in the initial semesters of their academic studies which aim to assist the learners in enhancing the quality of their learning. Two years later, Kafipour, Yazdi, Soori and Shokrpour (2011), experimenting with a different group of participants, found a similar result (that is, Iranian junior EFL students were medium strategy users) and concluded that the participants needed more training on vocabulary learning strategies to become more familiar with all types of vocabulary learning strategies. In addition, they found

significant positive relationship between all vocabulary learning strategies and vocabulary levels of the students. Finally, Rezvani and Pourshahian (2012) explored the relationship between vocabulary learning strategies and vocabulary size of a group of ELT students and found that the learners adequately operated psycholinguistic and metacognitive strategies.

However, since the goal of strategy training is to foster learner autonomy and empowerment, the construct of self-regulation, which highlights the learners' personal initiatives and resourcefulness, can be a better and more insightful construct to be touched upon and its relationship with various aspects of language learning especially the level of vocabulary knowledge of the learners is to be explored. In addition, since a variety of factors may influence the extent and level of the learners' vocabulary acquisition, their degree of self-awareness, regulatory action and control over these factors can be a more determining factor in accounting for their success or failure than mere focusing upon the construct of strategy use which is considered as a subset of the learners' regulative behavior. Therefore, examining the studies conducted on the learners' self-regulatory behavior in vocabulary learning and designing new studies to fill the lacunae in the literature on this aspect of learning are highly warranted.

#### *Related studies on self-regulation and vocabulary learning*

Since the introduction and entrance of self-regulation construct in the domain of vocabulary learning (Tseng, et al., 2006), some researchers have started to (experimentally) examine the possible relevance of these two constructs to each other. For example, Ma Ping and Siraj (2012) examined the use of self-regulated learning strategies and motivational beliefs for vocabulary learning of 38 pre-university Chinese EFL learners. They interpreted the results of the study by having this idea in mind that "strategy use and self-efficacy are the crucial elements for defining self-regulated learners" (p. 1211). Accordingly, they suggested that there is a pressing need to enhance the Chinese EFL learners' self-regulation in vocabulary learning through strategy instruction. Furthermore, Zarei and Hatami (2012) investigated the relationship between 250 Iranian EFL college students' self-regulated learning competence and their vocabulary knowledge and reading comprehension. After administering the intended tests and questionnaire, they found mixed results in the relationships of various self-regulated learning components, namely, planning, self-checking, effort and self-efficacy, with each other. In addition, they found no significant relationship between self-regulated components and the vocabulary knowledge of the participants.

Moreover, Mizumoto (2013) examined the effects of integrating a self-regulated learning approach on self-efficacy in vocabulary learning. The participants were assigned to a treatment group, which received the intended self-regulatory intervention, and two comparison/control groups. They responded to the items of a self-efficacy in vocabulary learning questionnaire three times and a vocabulary test twice. Multilevel analysis of change was used to examine the trajectories of change in the participants' self-efficacy over time. The students' gain scores in vocabulary tests were also computed to complement the results. The results of the study confirmed a steady increase in the self-efficacy beliefs and vocabulary knowledge of the group which benefited from self-regulatory instruction which was believed that in the long run may help the learners become independent and autonomous in their vocabulary learning.

Hardi (2014), in her Ph.D. dissertation project, investigated more than 400 Hungarian primary school learners' vocabulary learning strategies in the framework of self-regulation and in light of the findings proposed categories of young learners' self-regulated vocabulary learning behavior and identified age-related differences in the use of such strategies. The necessary data were collected using interviews and questionnaires which were complemented by the results of classroom observations. In fact, the researcher wanted to tap into the learners' own perceptions of their learning processes. The results of the study showed that young learners make use of various

vocabulary leaning strategies, are conscious of their endeavors while learning the words and make appropriate and rather efficient use of self-motivational and self-regulatory strategies. She also suggested a variety of useful implications for teachers and teacher trainers as the most important outcomes of her research.

On the whole, many attempts have been made to tap into the nature of vocabulary learning and the associated processes, especially in this case the effects of learners' strategic and self-regulatory behavior, which may be related to vocabulary acquisition or may affect such a process. From the mid-1980s onward, the growth of interest in vocabulary learning and the beliefs in its effectiveness in enhancing successful language learning have led some researchers to investigate this aspect of language more profoundly in their research endeavors. This body of research has also shown that learners' agency in learning process and their self-regulatory capacity can enhance the quality of their learning. Therefore, more research is needed to operationalize the link between vocabulary learning and self-regulation capacity and to explore how the level and differences in the learners' self-regulation capacity may be relevant to or affect different aspects of vocabulary knowledge such as the learners' vocabulary size. In line with this objective, the present study attempts to investigate the self-regulated vocabulary learning behavior of a group of Iranian EFL undergraduate students and its relation to their vocabulary size. More specifically, the research aimed at responding to the following research questions:

1. Is there any significant relationship between the self-regulation capacity in vocabulary learning of Iranian EFL learners and their vocabulary size scores?
2. How well do the subscales (commitment, metacognitive, emotion and environment control) in the self-regulation capacity framework predict the vocabulary knowledge (vocabulary size) of the learners and which one is the best predictor?
3. Is there any significant difference in the self-regulatory strategy use of the learners with different years of academic learning experience?

## Method

### *Participants and setting*

A convenient sample of ninety (20 males and 70 females) undergraduate students of English language and literature from Hakim Sabzevari University in Iran participated in the study. It is worth-mentioning that over 130 students participated in the study, but due to some problems, especially the existence of some anonymous questionnaire responses and impossibility of matching the responses with the participants' corresponding vocabulary size scores, the researchers could only use the responses of 90 students and include them in the final data analysis. The average age of the participants was about 23 and their proficiency level was from intermediate to advanced. Moreover, based on the years of learning English in the academic context, they were divided into three different experience groups: freshmen (low group), sophomore (mid group) and junior and senior (high group). The main justification behind this categorization is the fact that according to some scholars' ideas, self-regulation is an aptitude that changes and develops as a result of being exposed to instruction and years of learning experience (e.g., Tseng & Schmitt, 2008; Winn 1996). In fact, the researchers wanted to see whether there is a significant difference between these groups of learners in terms of their self-regulation capacity for vocabulary learning or not.

### *Instruments*

Two main instruments were employed by the researchers in order to collect the data required to answer the above research questions. The first instrument was a bilingual Persian version of vocabulary size test developed and validated by Karami (2012). The original test is developed by Nation and Beglar (2007) to measure learners' written receptive word knowledge. This test is based on word family frequency estimates derived from the British National Corpus (BNC) (Nation, 2006). There are a total of 140 multiple-choice items in the test ordered according to the frequency level. The bilingual Persian version of the test is used in the present study because previous research has pointed to the fact that bilingual versions of the vocabulary size test can be more efficient than the monolingual one in assessing the learners' vocabulary knowledge (Nguyen & Nation, 2011).

The second instrument was the self-regulation capacity in vocabulary learning scale (see Appendix A) developed by Tseng et al. (2006), which consisted of five subscales or, more specifically, five facets of control which were elaborated on previously: commitment control, metacognitive control, satiation control, emotion control and environment control. In fact, the scale has been developed based on the theoretical construct of self-regulation developed by Dörnyei (2001). Totally, it contains 20 items which were designed in a way that they could reveal specific trends and inclinations of learners for vocabulary learning. The participants made their responses on a six-point Likert-scale ranging from strongly disagree (=1) to strongly agree (=6). The reliability of the scale was estimated and turned out to be .844 Cronbach's Alpha.

### *Procedure of data collection and analysis*

In order to collect the necessary data, the researchers first administered the vocabulary size test during the class sessions in the University. The students were given no time limit to answer the items and, except for the required instruction with regard to the test, they were not given any help or information while answering the items. Some days later, they filled in the self-regulation capacity in vocabulary learning questionnaire in classrooms, as well. The collected data were scored and analyzed using SPSS 16. More specifically, the patterns of descriptive and inferential statistics (e.g., correlation, multiple regression and ANOVA) were run to explore the relationship between self-regulation capacity and vocabulary size of the learners, the contribution of different self-regulatory subscales to the learners' vocabulary knowledge and, finally, differences in the strategy use of different groups of learners.

## **Results and discussion**

As was stated, vocabulary knowledge is highly important for performing a broad range of communicative functions and the effectiveness of learners' thinking, comprehension, fluency and communication abilities depends on having a rich and broad lexical knowledge. Besides curriculum designers' and teachers' duty to develop appropriate instructional programs and teaching practices to enhance the students' vocabulary learning endeavors, the students themselves must be equipped with self-regulation skill to take advantage of the activities they engage in. Accordingly, the present paper attempted to tap into this issue and tried to explore Iranian EFL learners' self-regulatory capacity for vocabulary learning. As for responding to the first research question, the relationship between the total self-regulation capacity of the learners (as measured by self-regulation scale) and their vocabulary size scores was investigated using Pearson product-moment correlation coefficient (see Table 1). As the results in Table 1 indicate, there is no significant relationship between the two variables,  $r=.048$ ,  $p=.654 > .05$ . This may mean that, based on the learners' own perception, their self-regulation capacity may not be a determining factor in acquiring vocabulary.



Table 1

*Descriptive Statistics and Results of Pearson Correlation Coefficient for Students' Overall Self-Regulation Capacity in Vocabulary Learning and Vocabulary Size Score*

Variables	N	Mean	SD	r	Sig. (two-tailed)
Self-Regulation	90	82.68	11.52	.048	.654
Vocabulary Size	90	62.10	7.13		

This finding is not in line with many previous studies which have explored the learners' self-regulatory behavior in various domains of learning (e.g., Hong, Pang & Rowell, 2009; Kistantas, Steen, & Huie, 2009; Kozlowski & Bell, 2006; Magno, 2011; Oettingen, Honig, & Collwitzer, 2000; Young, 2005). Although they did not investigate the relationship between self-regulated learning strategies and vocabulary knowledge of the learners, their findings reveal that there is a significant positive relationship between self-regulated learning strategies and learners' achievement. However, it is worth-mentioning that the findings with regard to this issue are rather mixed. For example, in Zarei and Hatami's (2012) study, some components of self-regulation (self-checking and effort) were positively related to their vocabulary knowledge and reading comprehension while others were not. In addition, in Rezvani and Pourshahian's (2012) study, the correlations between the vocabulary strategies and the vocabulary size of the participants were very small and negative. However, Hamzah, Kafipour and Abdullah (2009) found a significant relationship between all vocabulary learning strategies and overall vocabulary level of the students. A number of factors might have contributed to these mixed results. Some of these important factors can be the learning context, cultural differences and the differences in the learners who may choose and use different approaches and strategies for vocabulary learning (Jiang & Smith, 2009; Kojic-Sabo & Lightbown, 1999; Mizumoto, 2010; Nakamura, 2002; Nyikos & Fan, 2007). Likewise, since the participants of the current study were from different backgrounds, possibly had various views about vocabulary learning, had employed a host of different strategies in acquiring the words, had different learning experiences and, more importantly, had different proficiency levels, this finding is rather justified.

The second research question addressed the ability of the five subscales in the self-regulation capacity for vocabulary learning scale to predict Iranian undergraduate EFL learners' vocabulary size. The results presented in Table 2 indicated that none of the subscales can act as a strong predictor of the learners' vocabulary size. However, in spite of not showing a significant result, the metacognitive regulation ( $B=-.489$ ,  $Beta=-.227$ ,  $t=-1.475$ ,  $p>.05$ ) has a better predicting power compared to the rest of the subscales. As was mentioned, metacognitive control, as one dynamic component of self-regulated learning, refers to the first steps taken when trying to get on an action and involves identifying distractions and monitoring of concentration (Tseng et al., 2006). A group of strategy researchers believe that "overall metacognitive control must be present for a mental action to be 'strategic' and that metacognitive strategies are the overarching strategies determining the cognitive strategies the learner will deploy" (Cohen, 2007, p. 32). In addition, Eslami Rasekh and Ranjbar (2003) commented that explicit metacognitive strategies instruction has a positive impact on the development of EFL students' lexical knowledge.

Table 2  
Coefficients of the Standard Multiple Regression

Model	Unstandardized Coefficients		Standardized Coefficients		95% Confidence Interval for B		Correlations			Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper bound	Zero Order	Partial	Part	Tolerance	VIF
(Constant)	58.974	5.795		10.24	.000	47.52	70.42					
Station	-.140	.341	-.065	-.412	.681	-.818	.537	-.005	-.045	-.044	.611	1.637
Emotion	.303	.332	.121	.913	.364	-.357	.963	.108	.099	.097	.648	1.543
Environment	.365	.381	.135	.957	.341	-.393	1.123	.109	.104	.102	.571	1.750
Commitment	.248	.325	.111	.762	.448	-.399	.895	.053	.081	.081	.538	1.857
Metacognitive	-.489	.322	-.227	-1.475	.144	-1.194	.170	-.060	.159	.157	.481	2.080

However, since the number of participants in the present study was not large enough and multiple regression is highly sensitive to sample size, the fact that none of the subscales made a significant unique contribution to the prediction of learners' vocabulary size can be attributed to this issue. Evidence for support of this claim can come from Gu and Johnson's (1996) large-scale study in which 850 sophomore non-English majors participated in the study and it was found that there were significant positive correlations between the students' metacognitive strategies and their vocabulary size scores. In a multiple regression analysis, the metacognitive strategies also emerged as positive predictors of both general English proficiency and vocabulary size.

The third research question investigated whether there is a significant difference between the three experience groups (low, mid and high) in terms of their self-regulation capacity for vocabulary learning. As the descriptive statistics presented in Table 3 indicate, the low experience group which was comprised of freshmen students had a higher mean score in their self-regulation capacity ( $M=85.03$ ,  $SD=10.64$ ).

Table 3  
Descriptive Statistics for Three Different Learning Experience Groups' Self-Regulation Capacity for Vocabulary Learning

Group	Number	Mean	SD
Low	30	85.03	10.64
Mid	43	80.76	10.80
High	17	83.41	14.33

However, in order to see whether there is a statistically significant difference between these three groups of learners regarding their self-regulatory capacity for vocabulary learning, a one-way between group analysis of variance (ANOVA) was conducted to explore this issue (see Table 4). The results indicated that there is no significant difference between the mean scores of the groups

(group 1=85.03, group 2=80.76 and group 3= 3.41) in terms of their self-regulation capacity ( $F(2, 87) = 1.260, p=.289$ ).

Table 4  
*ANOVA Results for Three Different Learning Experience Groups' Self-Regulation Capacity for Vocabulary Learning*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	332.530	2	666.265	1.260	.289
Within Groups	11478.759	87	131.940		
Total	11811.289	89			

Despite the fact that no significant difference was observed between the performances of the three different experience groups, the first year students' higher mean score compared to the other two groups on self-regulation capacity for vocabulary learning can be attributed to the *Study Skills* course they were passing at that semester which may have possibly led to their consciousness and use of strategies they have learnt. In addition, the importance of vocabulary at the time they were still passing general English courses such as conversation and reading comprehension can be another factor accounting for this higher performance. Therefore, contrary to the previous ideas which consider self-regulation a developable aptitude that is influenced by years of previous experience and instruction (Tseng & Schmitt, 2008; Winne, 1996), it can be hypothesized that the focused instruction on specific strategies and, hence, the students' awareness of different strategies can possibly affect their capacity for vocabulary learning and not the mere years of learning experience. However, in the self-regulation framework, the learners' own initiatives and actions are more important than the effects of direct instruction on their learning which may add to the difficulty of interpreting the results and any generalizations without considering the real causes should be made cautiously. Consequently, the use of more qualitative research methods such as conducting (in-depth) interviews could have provided more insights into the vocabulary learning behavior of the individual learners and, hence, would have enabled us to interpret the findings of the study with more confidence.

On the whole, since Iranian students are learning English as a foreign language, which brings with itself a new world of actions and thinking processes, and most of the instructions conducted in the classrooms are rather traditional and teacher-centered instead of an individualized and differentiated learning approach, expecting to find positive correlations between the learners' self-regulatory behavior, which is a highly self-initiated process, and their achievements in various domains of learning can be considered as an idealized objective. In fact, since these learners are highly dependent on teachers' guidance and hence are less self-directed in their learning process, some mediational strategies, modellings and supportive feedback must be performed and offered by the competent EFL instructors to inform the learners of the nature and applications of such generative activities and initiatives in their learning process. Therefore, "scaffolds, which support and guide learner's self-regulatory process, are necessary" (Lee, Lim, & Grabowski, 2010, p. 632) in empowering the learners and enhancing the quality of their learning.

### Conclusion and pedagogical implications

The present study attempted to primarily investigate the relationship between Iranian undergraduate EFL learners' self-regulation capacity for vocabulary learning and their vocabulary

size. The results of data analysis indicated no significant relationship between these two variables. Moreover, among the five subscales of self-regulation capacity none had a significant unique contribution to their vocabulary size. However, the metacognitive regulation had a better predicting power compared to the rest of the subscales. In addition, it was found that the students who felt a more immediate need for vocabulary learning, as required by the general English courses they were passing in the first year of studying English in an academic context, had a better self-regulatory capacity for vocabulary learning as revealed by their questionnaire responses. In fact, this finding was attributed to the direct instruction they had possibly received on such (vocabulary) learning strategies in their Study Skills courses. Therefore, due to the importance of such courses in empowering learners with appropriate strategies, more emphasis should be placed on the successful management of such courses and the instructional methods employed by the instructors. Creating more learner-centered pragmas which value the learners' agency and actions in various sociocultural learning contexts may also facilitate the learners' initiatives and their self-regulatory behaviors. Since the learners in different sociocultural contexts may have a variety of learning styles and needs and may employ strategies differently, which can lead to the improvement or undesirable failures in their efforts, the conscientious instructors must try to have a rather realistic initial appraisal of their learners and employ the most effective teaching practices which are capable of enhancing the extent of learners' investment in the learning process.

Moreover, given the fact that English has a very large lexicon and learners need to be equipped with enough vocabulary to cope, at least, with the requirements of reading authentic materials, they need to set a sustained program for vocabulary learning and should try to become more self-regulated in this regard. Accordingly, instead of providing direct instruction on specific strategies that might be useful for some purposes, teachers must try to develop this self-regulatory power in the learners because, as was stated, learners' creative effort and informed decisions in trying to improve their own learning are highly important. In fact, if teachers provide learners with the appropriate support and knowledge to become self-regulated, they can operate more independently and, hence, take more responsibility towards their own learning. Finally, since vocabulary learning and growth is strongly related to successful performance on other language skills, more emphasis is to be placed upon vocabulary learning in foreign or second language classrooms. Furthermore, due to the advances and applications of technology in online and hybrid courses for delivering language learning materials and teaching various language skills and components, more attention and research focus should be directed towards exploring the extent and nature of learners' self-regulatory behavior in such learning contexts.

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**Appendix A.**

## The Self-regulation Capacity in Vocabulary Learning Scale

Item	Learning experience	Strongly agree	agree	Partly agree	Slightly disagree	disagree	Strongly disagree
1	Once the novelty of learning vocabulary is gone, I easily become impatient with it.						
2	When I feel stressed about vocabulary learning, I know how to reduce this stress.						
3	When I am studying vocabulary and the learning environment becomes unsuitable, I try to sort out the problem.						
4	When learning vocabulary, I have special techniques to achieve my learning goals.						
5	When learning vocabulary, I have special techniques to keep my concentration focused.						
6	I feel satisfied with the methods I use to reduce the stress of vocabulary learning.						
7	When learning vocabulary, I believe I can achieve my goals more quickly than expected.						
8	During the process of learning vocabulary, I feel satisfied with the ways I eliminate boredom.						
9	When learning vocabulary, I think my methods of controlling my concentration are effective.						
10	When learning vocabulary, I persist until I reach the goals that I make for myself.						
11	When it comes to learning vocabulary, I have my special techniques to prevent procrastination.						
12	When I feel stressed about vocabulary learning, I simply want to give up.						
13	I believe I can overcome all the difficulties related to achieving my vocabulary learning goals.						
14	When learning vocabulary, I know how to arrange the environment to make learning more efficient.						
15	When I feel stressed about my vocabulary learning, I cope with this problem immediately.						
16	When it comes to learning vocabulary, I think my methods of controlling procrastination are effective.						
17	When learning vocabulary, I am aware that the learning environment matters.						
18	During the process of learning vocabulary, I am confident that I can overcome any sense of boredom.						
19	When feeling bored with learning vocabulary, I know how to regulate my mood in order to invigorate the learning process.						
20	When I study vocabulary, I look for a good learning environment.						