The role of metacognitive strategy training in fostering vocabulary acquisition

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Abstract

This study explores whether metacognitive strategy training can influence the lexical knowledge of L2 learners of the present study, and what they think about the use of metacognitive strategies in language learning classes. To do so, a 50-item multiple-choice vocabulary test, developed by the researchers based upon Nation's (1990) levels of language proficiency, was employed to measure the learners' vocabulary knowledge progress during the period of instruction. The instruction received by the experimental group was based on the Cognitive Academic Language Learning Approach (CALLA) Model, developed and validated by Chamot and O'Malley (1994). The findings revealed that the experimental group outperformed the control group in their endeavors for comprehending and producing vocabulary. This may be attributed to the fact that after this intervention, participants have developed their metacognitive awareness and their thinking skills. The study concludes with pedagogical implications and highlights avenues for future research.

تمّ دمج استراتيجيات ما وراء المعرفية(MS) ، التي تعتبر الفئة الفرعية لاستراتيجيات تعلّم اللّغة في مناهج تعلّم اللّغة الأجنبية لتسهيل التفكير العالي والتخطيط الذاتي والتعلّم المستقلّ والتعلم الأفضل في نهاية المطاف. وفقًا لذلك، تعدّ هذه الدّراسة محاولةً للإجابة عما إذا كان التدريب على استراتيجية ما وراء المعرفي يمكن أن يؤثّر على المعرفة المُعجمية للمتعلمين وماذا يفكّر فيه المتعلّمون حول تدريس استراتيجيات ما وراء المعرفية. وللقيام بذلك، تمّ استخدام اختبار مكون من 50 عنصراً متعدد الاختيارات الّذي تمّ تطويره بواسطة الباحثين استنادًا إلى مستويات الكفاءة اللغوية لدى الشعب1990 (Nation) م)، لقياس تطوّر معرفة المفردات أثناء فترة التدريس. استندت التعليمات التي تلقّتها المجموعة التجريبية إلى نموذج منهج التعلم المعرفي الأكاديمي (CALLA) الذّي أعدّه و وافق عليه شاموت وأومالي (1994). كشفت النتائج أنّ المجموعة التجريبية تفوقت على المجموعة التحكمية بالنّسبة لفهم وإنتاج المفردات. من الممكن أن يعود ذلك إلى حقيقة أنّ المتعلمين بعد هذا العلاج يمكنهم التفكير أكثر وراء المعرفية وتطوير تقدّم تفكيرهم. تختتم الدّراسة بذكر بعض الآفاق التربويّة وتسليط الضّوء على بعض السّبل للبحث في المستقبل.

Introduction

Enriching language learners' lexical knowledge has always been a major concern of language teachers. To this end, they seek ways to help learners find strategies and approaches to enhance their vocabulary knowledge (Anderson, 2002). Hague (1987) believes that

> Vocabulary is by far the most sizeable and unmanageable component in the learning of any language, whether a foreign or one's mother tongue [because of] tens of thousands of different meanings. (p.219)

To facilitate the vocabulary learning process, Schmitt and Schmitt (1995) advocated using and teaching a wide spectrum of vocabulary learning strategies. Gu and Johnson (1996) introduced seven key classifications of vocabulary learning strategies namely *Metacognitive Regulation, Guessing, Dictionary, Note-taking, Rehearsal, Encoding,* and *Activation* Strategies. Their findings show that strategy description and categorization can positively impact language learning classrooms by assisting teachers in enhancing the achievements of their learners. To accelerate the process of

language learning, learners are advised to be familiar with the strategies that are available to them via explicit instruction and conscious selection. To put it simply, if learners want to decide on their strategy, they need to be aware of the process of making this selection, because "informed selection of strategies presupposes knowledge of strategies and knowledge of strategies presupposes instruction" (Nunan, 1991, p.179).

Vocabulary is claimed to be a fundamental component when communicating in a second or foreign language (Meara, 2002; Read, 2000). It is also asserted that the size of L2 learners' lexical knowledge is influential in reading comprehension and also positively correlated with the global assessment of writing and overall proficiency (Bachman & Palmer, 1996). O'Malley and Chamot (1990) argued that "learners without metacognitive approaches are essentially learners without direction or opportunity to plan their learning, monitor their progress, or review their accomplishments and future learning directions" (p. 8). Moreover, researchers believe that metacognitive strategies can lead to higher achievement and learning outcomes (Bolitho et al., 2003).

Most of the research in the field of learning strategy instruction has primarily concentrated on identification, discovery and explanation of the strategies employed by language learners, as well as reading comprehension skills. As a result, there have been fewer attempts to investigate the effect of the language learning strategies training on other components of language learning namely vocabulary, writing, grammar, pronunciation, speaking and listening. Thus, this study aims to investigate the role of metacognitive strategy training in the vocabulary knowledge development of English as a Foreign Language (EFL) learners. To achieve the purpose of the present study, the following research questions have been proposed:

1. Can metacognitive strategy training influence the lexical knowledge of participants in the current study?
2. What are the participants' attitudes towards engaging in metacognitive strategy approaches?

Based upon the research questions, the following hypothesis was made:

H1: metacognitive strategy training cannot influence the lexical knowledge of participants in the current study.

Literature review

With an increasing interest in language learning strategies, the question on the effectiveness of their instruction would contribute to the improvement of learners' language knowledge. An extensive amount of research advocates the positive impact of training strategies on language learning performance (Carrell, 1998). It has been proposed that metacognitive strategy instruction may help individuals become better language learners, more independent and confident, and ultimately more motivated to use learning strategies (Chamot & O'Malley, 1994). To prove their hypothesis, researchers conducted a large range of studies and finally concluded that the use of learning strategies is the key element in successful learning (O'Malley & Chamot, 1990).

On the importance of strategy training, Oxford et al. (1990, p. 210) claimed that:

> Teachers who use strategy training often become enthusiastic about their roles as facilitators of classroom learning. Strategy training makes them more learner oriented and more aware of their learners' needs. Teachers also begin to scrutinize how their teaching techniques relate (or fail to relate) to their learners' learning strategies and sometimes teachers choose to alter their instructional patterns as a result of such scrutiny.

The research findings in the field of language learning strategies have admitted the teachability of learning strategies in order to help learners become better and active language learners (Chamot, 2005; Hsiao & Oxford, 2002; Nation, 2001; Oxford, 1990). "The use of strategies embodies taking

active, timely, coordinated responsibility for learning. This is both learnable and teachable" (Oxford, 2008, p. 52).

With respect to vocabulary learning, research shows that for most adult L2 learners explicit vocabulary instruction, in contrast to simply letting learners learn vocabulary in their own way, is more helpful and essential owing to the fact that learners cannot acquire the mass of vocabulary just by meaningful reading, listening, speaking and writing (Brown & Perry, 1991).

Husltijn (1997) made a claim that vocabulary learning strategies training, in particular at the intermediate and advanced level through the use of keyword technique, would bring remarkable results. He added employment of appropriate language learning strategies would enhance language learning process.

To provide empirical supports regarding the beneficial role of instruction in vocabulary enhancement, Nation (2001) conducted a study to examine the extent to which vocabulary learning strategies can develop lexical knowledge. Nation (2001) maintained that Learning how to use vocabulary strategies is not inherited, nor does it happen naturally and overnight, yet it necessitates specific instruction of basic vocabulary skills and strategies.

Ranalli (2003) highlighted that owning a variety of strategies (metacognitive knowledge) and the ability to employ them appropriately in proper situations (metacognitive regulation) can facilitate the process of learning new words for learners. To better understand it, Anderson (2002, p.1) defined metacognition as "thinking about thinking" which would result in higher achievement and more outcomes.

Anderson (2002) has suggested five major components for metacognition which include:

1) Preparation and planning: this is about setting learning goals, and how learners will go about achieving them.

2) Select and use particular strategies: learners should be taught not only about learning strategies but also about when and how to employ them. They must be trained on how to select the best and most proper strategy in a given context.

3) Monitoring strategy use: learners should learn to regularly check and evaluate the strategies they had employed to monitor whether they are effective and being used as intended.

4) Knowing how to use a combination of strategies in an orchestrated fashion: learners need to be well trained to choose the strategies that work well together in a highly orchestrated way, matched with the necessities of the language task.

5) Evaluating the effectiveness of strategy use: at this stage of metacognition, the whole cycle of planning, selecting, using, monitoring and orchestration of strategies is evaluated through techniques such as self-questioning, debriefing discussions after strategies practice, learning logs in which learners record the results of their learning strategy applications, and checklists of strategies.

In-Jae Jeon (2007) tested the correlations between EFL learners' vocabulary ability level and vocabulary learning strategy use in South Korean EFL context. To this end, the participants, 450 high school students, were assigned to three experimental groups based upon their advanced, intermediate and lower proficiency level. The overall results showed that the participants in the advanced and intermediate group were inclined to employ a much broader variety of vocabulary learning strategies more actively than those in the lower group. Too, the participant were advanced proficiency levels were disposed to use all three of the strategies (e.g., discovery, memory, and cognitive strategies) more frequently than the intermediate and lower group students. The findings

demonstrated that learners tend to have positive attitude to utilizing vocabulary learning strategies as they see their achievements.

Mizumoto and Takeuchi (2009) investigated the extent to which explicit instruction of vocabulary learning strategies (VLSs) leaves positive impacts on Japanese EFL learners. To do so, a pool of 146 participants, divided into experimental and control groups, were exposed to the intervention during 10 educational weeks. The results indicated that the participants in the experimental group outperformed those in the control group. To provide more in-depth understanding of the effects of explicit strategies instruction, a semi-structured interview was run. The results showed that explicit vocabulary learning strategies would result in increases of strategy use and intrinsically motivated learners.

Lai (2013) integrated explicit vocabulary instruction into EFL classroom to investigate its effect on Taiwanese learners' vocabulary acquisition at different proficiency levels. The most significant result drawn from the data is that strategy training leads to a remarkable improvement in the frequency of low-level learners' strategy use.

To explore the interrelationship between metacognitive strategy training and vocabulary learning, Al-Khasawneh and Fathi Huwari (2014) employed the instruction model of CALLA on Jordanian language learners. The findings indicated that the experimental groups, receiving the explicit instruction, surpassed their counterparts in the control group. The findings suggested that it may be helpful to promote the L2 learners' overall strategic awareness by drawing their attention to the various strategies which learners feel comfortable and effective to use.

Naeimi and Foo (2015) carried out a study to compare the effects of direct and indirect learning strategies on the vocabulary knowledge achievement. The findings revealed that direct learning strategies contributed to a higher level vocabulary acquisition. It was argued that direct strategies such as *structured reviewing* and *mechanical techniques* (e.g., use of flashcards), due to their comfort and ease, are more effective for developing L2 learners' lexical resources.

Amirian, Mallahi and Zaghi (2015) did a survey to examine the correlations between Iranian EFL learners' self-regulation capacity for vocabulary learning and their vocabulary size. The findings showed that metacognitive learning strategies, as a critical sub-component on self-regulation learning strategies scale, was significantly associated with the learners' vocabulary size. It was discussed that the students' awareness of different strategies, ability to monitor their learning process and reflect on it can possibly affect their capacity for vocabulary learning.

Ostovar-Namaghi and Malekpur (2015) intended to uncover the strategies Iranian EFL learners take for vocabulary acquisition. To conceptualize the vocabulary learning strategies, the participants were interviewed to collect the data. The findings indicated that resourcing (use of different resources and materials for learning vocabularies), creating structure (structuring the new words for memorizing), grouping items, repeating, contextualizing (putting the new words in different clear contexts), employing images and sounds, and use of dictionaries were among the strategies that EFL leaner utilize for leaning new words.

Ping, Baranovich, Manueli and Siraj (2015) implemented research to explore the use of self-regulated learning strategies as well as motivational beliefs for vocabulary learning in Chinese EFL context. To do so, a total of 38 Chinese EFL learners were asked to participate in the study. The derived results demonstrated that language learners scarcely draw upon cognitive deep processing strategies and meta-cognitive strategies in the L2 classes, additionally, learners' low self-efficacy and motivation stem from the lack of strategy knowledge. The study suggested that there is a pressing need to provide Chinese EFL learners with explicit instruction on how to use self-regulation in vocabulary learning.

Nosratinia, Ghavidel and Zaker (2015) investigated the efficacy of metacognitive strategies training based on Anderson's (2002) model on the learners attending TOEFL listening classes. The findings reported a positive and significant influence for metacognitive strategies instruction on the ultimate performance of language learners. It was claimed that higher-order thinking skills, i.e., metacognitive strategies, would help language learners to take control of their learning process, which can lead to more language achievement.

Trujillo, Álvarez, Zamudio, and Morales (2015) conducted a study to investigate the effect of using metacognitive strategies (MS) through learning journals for enhancing the participants' vocabulary learning. The findings revealed the intervention helped the participants to improve their lexical competence, increase the number of words known, use more verbs and basic expressions about daily routines, and decrease the number of misspelled words. The interview, administered after the intervention, showed that some students' perspectives regarding the employment of strategies changed; they became more critical and realistic about the strategies they actually used for vocabulary learning.

Poo and Funn (2017) did a study to test the efficacy of implementing metacognitive awareness and connectivist learning strategy in vocabulary learning by using a cloud-based immersive learning environment. Data collection was through questionnaires and interviews. The study revealed that metacognitive awareness and connectivist learning helped student in vocabulary learning. The findings showed that goal-setting, setting up purpose and planning were among the strategies that lead to better performance in acquiring vocabularies.

Pérez and Alvira (2017) conducted an empirical study to compare the effects of three memory strategies on vocabulary learning. To this end, word cards, association with pictures, and association with a topic through fables were run in three distinct groups to Colombian EFL learners. The findings revealed that these strategies positively impacted the participants' ability to recall the words they were exposed to. The study also found that these strategies involve cognitive and affective factors that affect students' perception about the learning of vocabulary.

Methodology

Study design

This study employed a mixed method study to investigate the effects metacognitive learning strategies on Iranian EFL learners' vocabulary acquisition and also seek the participants' perceptions regarding the use of metacognitive strategies in L2 learning classes. In the quantitative phase, this study used a nonrandomized control group, pretest–posttest design to answer the research question. To this end, two independent samples t-test were run to ensure the homogeneity of the participants before the intervention, and the efficacy of intervention after the post-test. In the qualitative phase, the data were collected to gain further understanding of the underlying factors leading to EFL learners' opinions towards integration of metacognitive strategies for learning vocabulary. In this phase of the study, which followed the quantitative phase, 10 participants were purposefully selected for the interview to depict a better picture of their experience. They included learners in the experimental group with high and low scores in the vocabulary test. The data were collected through semi-structured interviews. The participants responded to five open-ended questions such as: how do you think about the use of metacognitive strategies in the learning classes? Do you think this is useful? Then, the interviews, lasting for almost 5 to 10 minutes, were administered face-to-face with each interviewee. The interviews were digitally recorded, transcribed, returned to the interviewees to be read through and commented on. Afterwards, following Creswell (2013), the transcripts were coded and themes were identified through a within-case analysis.

Participants

The participants of the present research study included 51 male EFL learners studying English at an aeronautical college in Iran who were selected from two intact classes. The average age of the participants was 22.64 years (range: 21-26). All were undergraduates of different majors who were enrolled in the course as an obligatory module in their curriculum. All participants previously completed *Active (Intro.)*, a reading-based textbook, during the previous semester. There were 26 participants in the control group and 25 in the experimental group, respectively. The reason for which these participants were selected was that language learning was extremely emphasized in that college and instructors were encouraged to find ways to increase learners' language ability particularly in vocabulary.

Instruments

Nation's (1990) 50-item multiple choice vocabulary test was the first instrument to measure the vocabulary knowledge of the learners in the study. The researchers used this test as a pre-test to ensure homogeneity of the both experimental and control groups. Read (2000) argues that Nation's (1990) test has proven to be a worthy diagnostic estimate of vocabulary level. Also, Nation (2001) claims that the test is designed to be quick to take, easy to mark, and easy to interpret. Moreover, it tests the English lexical proficiency of learners from large samples of words from different word frequency levels, which being chosen randomly, represents the entire vocabulary at these levels (Nation, 2001).

The second measurement was a semi-structured interview which was carried out to obtain the participants' viewpoints toward this strategy instruction. Based on the post-test score, ten learners, five with the lowest scores and five with the highest scores from both groups, were randomly selected to seek their opinions what they think about incorporation of metacognitive strategies in the classes for improving vocabulary acquisition.

Procedures of data collection and data analysis

The study started with a test-administration session. To reach homogeneity, Nation's (1990) language test was employed. The results showed that the groups were at the pre-intermediate proficiency level. Then, the participants were randomly assigned to experimental and control groups. The intervention lasted for a term, consisting of fifteen training sessions (30 hours). The treatment was carried out using CALLA.

Some researchers have proposed models for increasing the effectiveness of strategy training. Chamot and O'Malley (1994), as one of the initiators in this regard, developed a model which later became known as Cognitive Academic Language Learning Approach (CALLA). This framework can help teachers incorporate language, content, and learning strategies in a carefully planned lesson. According to Chamot and O'Malley (1994), the CALLA can be presented to learners in five sequential phases which are: *preparation* (*introducing*), *presentation* (teaching), *practice*, *evaluation*, and *expansion (applying learning strategies),* respectively. In this model, the explicit instructions gradually disappear to give autonomy to learners to select and expand the strategies. The sequence repeats when new strategies or new applications are added to learners' strategic repertoires. Later on, Chamot, Barnhardt, Dinary and Robbins (1999) also introduced an updated, non-linear, metacognitive instructional model of CALLA, according to four *metacognitive processes of planning, monitoring, evaluating,* and *problem-solving*. This recursive model makes the learners step back to a prior stage at any time to better and enhance their comprehension process. The model includes six instructional stages, which can be implemented through *preparation, presentation, practice, self-evaluation, expansion, and assessment phases, sequentially.*

The training sessions on the experimental groups followed five sequential stages.

1. **Preparation:** The primary purpose behind this stage was to assist learners in identifying the strategies they were already using, and also to make them aware of the effect of language learning strategies on increasing vocabulary knowledge. In this phase, the teacher explained the importance and meaning of metacognitive learning strategies and distributed a handout including varying metacognitive strategies. Also, the participants were guided by the teacher to set specific goals for mastering the vocabulary from certain units in the textbook.

2. **Presentation:** This phase was dedicated to modeling the learning strategy. The teacher discussed strategies to approach reading a text and understanding unknown words. Learners were explicitly taught the characteristics, usefulness, and applications of the strategy through examples. A number of strategies were taught, and the learners were reminded of the fact that no single strategy can be helpful in all contexts. The procedure and applications of preparation and planning, choosing vocabulary learning strategies, monitoring strategy selection and use, orchestrated use of several strategies, and evaluation of effectiveness of metacognitive strategies were elucidated via numerous examples.

3. **Practice:** In this phase, learners were given the opportunity of exercising the learning strategies with authentic learning tasks. By using the metacognitive strategies along with cognitive vocabulary learning strategies, the learners acquire how to move to other strategies when one is not suitable. At this stage, the teacher guided and helped the learners to monitor the metacognitive strategies available to them.

4. **Evaluation:** The main purpose of this phase was to give learners opportunities to evaluate the efficacy of the strategies they had employed, thus becoming aware of the merits of metacognitive strategies. Teachers can take advantage of activities such as self-evaluation insights including self-questioning, debriefing discussions after practicing strategies, learning logs, checklists of strategies used, and open-ended questionnaires in which learners expressed their opinions about the usefulness of particular strategies.

5. **Expansion:** In this final phase, learners were encouraged to utilize the strategies that they found most operational, employ these strategies in new contexts, expand them to new learning situations and devise their own individual combinations and interpretations of metacognitive learning strategies.

Regarding the second component of the research, the researchers conducted an interview after the administration of the post-test. Participants were questioned about their perspectives regarding employment of metacognitive strategies for increasing the performance of language learners for vocabulary acquisition. Throughout each interview, the learners were allowed to communicate in their native language so as to make them feel comfortable and not limited by their English proficiency. Moreover, in order to warrant the homogeneity of the procedure, participants were briefed on the procedures of conducting the interview. Interviews lasted between 5 to 10 minutes per learner. Following Creswell (2013), the transcripts were coded and themes were identified through a within-case analysis. The current research was done according to ethical standards provided by American Psychological Association (APA, 2010).

Results

To analyze the probable difference of the participants in their lexical knowledge, an Independent samples T-Test was employed. The purpose of administering a pre-test session was to investigate the extent to which the groups were homogeneous. As previously mentioned, the results of the pre-test revealed that the participants were at pre-intermediate proficiency level. Tables 1 and 2 indicate the vocabulary pre-test results before the metacognitive strategies instruction.

Table 1. Descriptive Statistics of the vocabulary pre-test

	Learner's group	N	Mean	Std. Deviation	Std. Error Mean
pretest	Experimental	25	.5096	.09689	.01882
	Control	26	.4898	.08330	.01434

Table 2: Results of independent samples t-test for the pre-test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
pretest	Equal variances assumed	2.225	.131	.-.925	49	.352	-.02221	.02414	-.07358	.02698
	Equal variances not assumed			.-.925	2.609	.453	-.02221	02414	-.07362	.02705

The independent samples T-Test analysis of the vocabulary pre-test scores in Table 2 revealed that there is no significant difference (sig=.352; *p*>.05) between the mean scores of the learners in the two groups. To put it simply, both the experimental and control groups, just before the start of the treatment, were homogeneous in terms of vocabulary knowledge. This report helps to make sure that any rise and fall in the final-exam score can be attributed to the treatment of metacognitive strategies.

Table3. Post-test group statistics.

	Group	N	Mean	Std. Deviation	Std. Error Mean
Posttest	experimental	25	18.0400	1.24097	.24819
	control	26	16.0769	1.01678	.19941

Following that, metacognitive strategies instruction was applied to the experimental group only, while normal teaching was practiced for the control group. A vocabulary post-test was run at the end of the semester so as to evaluate the effectiveness of metacognitive strategies training on the participants' vocabulary knowledge development. The descriptive statistics after the instruction and the differences between the groups are provided in Table 3 and Table 4, respectively.

Tables 3 and 4 clearly show that there is a significant difference between experimental and control groups in terms of vocabulary knowledge after the metacognitive instruction. The experimental group, with the mean score of (M= 18.04), outperformed (t (6.190) =.000; *p*<0.01) its control counterpart (M= 16.09). Therefore, the metacognitive strategies instruction seemed to have contributed to the vocabulary learning improvement of the learners.

Table 4. The results of independent samples t-test for the post-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
posttest	Equal variances assumed	.446	.507	6.190	49	.000	1.963	.317	1.326	2.600
	Equal variances not assumed			6.166	46.417	.000	1.963	.318	1.322	2.604

Regarding the second research question, an interview was administered. A content analysis was made on five participants from high scorers and five from low scorers of the vocabulary test in the experimental group. A sample of the transcripts of the high scorers are as follows:

> It is wonderful that the teacher instructs us step by step…

> learning these strategies help me read faster and better…

> these strategies have greatly increased my self-confidence…

> I think it has equipped me with a technique to help me in difficulties…

Overall, almost 92 percent of the high-scoring interviewees expressed their positive opinions regarding the employment of metacognitive strategies in L2 learning classes, in particular for vocabulary acquisition.

However, the low scorers answered the questions differently, for example*:*

> It's a little bit boring. We had to do a lot of exercises…

> I am not sure I can use these strategies when I am in need…

> It much depends on the person to use them…

> It is somehow a waste of time, vocabulary is much more challenging to master by a set of strategies…

Discussion

Can explicit metacognitive strategy affect the lexical knowledge of these learners?

The results have shown that the experimental group, after receiving the explicit instruction on metacognitive strategies, demonstrated a significant progress in their vocabulary knowledge (t (6.190) =.000; $p<0.01$). This may be attributed to the fact that after the intervention learners can think more cognitively and develop their thinking process. These findings are in line with the previous research works centered on the utilization of learning strategies.

Furthermore, the results corroborate what the former studies on strategy training of other language skills claimed. Coskun (2010) maintained that language learning strategies lead to improvement in skills such as listening performance and reading comprehension (Çelik & Toptaş, 2010). This is also

consistent with the results of the survey conducted by Alderson (2000), who found that explicit metacognitive strategies made readers more skilled in contrast with those who did not use these strategies.

Moreover, the present study confirms the findings of studies on vocabulary learning strategies. Nation (2001) admitted the teachability of learner strategies in order to help individuals become better and active language learners. He maintained that vocabulary learning strategies can develop lexical knowledge.

In another research, Ranalli (2003) remarked that applying a variety of strategies (metacognitive knowledge) and the ability to employ them appropriately in proper situations (metacognitive regulation) can facilitate the process of learning new words for learners.

What do the learners think about teaching metacognitive strategies in language learning classes?

The findings of the interview seem to imply that one of the reasons that learners lack knowledge about the effectiveness of these strategies is their unfamiliarity with the strategies. When they become familiar with the influence of these strategies in the process of reading, their perspectives will be changed and they become eager to learn how these strategies facilitate their reading abilities; although this is mediated by their level of proficiency.

These results were in accordance with the researchers' pre-assumption that there should be a positive viewpoint towards the strategy usage after the training. This enhancement can be due to the fact that learners can distinguish the worth, value and benefit of metacognitive strategies in learning vocabulary. They learned how to use the strategies as they learned new vocabulary. Furthermore, the more they were trained, the more they were accustomed to using those strategies. The results showed that a majority of the high-scoring interviewees (over 92%) had positive opinions regarding strategy instruction.

Conclusion and implications

This paper has given an account of explicit metacognitive instruction on vocabulary acquisition with EFL learners at an aeronautical college in Iran. Nation's (1990) language proficiency test, to reach homogeneous groups, were utilized to demonstrate the extent to which the participants' lexical knowledge improved after receiving the intervention. Taken together, the results would seem to suggest that metacognitive training, through the CALLA Model, enhances the learners' ability to acquire new vocabularies when the instruction is explicit. Also, the findings from the qualitative phase have revealed that majority of the learners hold positive viewpoints toward using language learning strategies, in particular metacognitive vocabulary learning strategies.

One possible implication of the present study would be for language teachers to use a number of techniques and strategies in order to integrate various learning strategies in the classroom. Metacognitive strategies provide learners with the knowledge and ability to gather learning tools to carry out learning goals, and manage cognitive processes. In addition, teachers can assist their learners to select the appropriate strategies for developing language skills. It would generate autonomous behaviors and ways of self-managing learning strategies by allocating mindful tools and particular individual methods of attaining learning goals. The third implication is that this study can be helpful for the material developers to detect, revise, and modify course-books and textbooks by including metacognitive strategies to improve the ultimate performance of language learners.

However, one shortcoming of the study would be the fact that the obtained results cannot be generalized to all EFL/ESL contexts because the number of participants and training models can easily

differ. The other pitfall lies in the duration. This research just took a semester which cannot be a sufficient period for generalizing the findings.

Further experimental research would be needed to estimate whether metacognitive strategy training could be effective for teaching other skills such as reading, writing, listening, and speaking.

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