

Effect of Cognate-Based Instruction Strategy on Vocabulary Learning Among Iranian EFL Learners

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Abstract

Cognates are the words celebrating their similarities from phonetic, orthographic, and semantic points of view across two or more languages. The aim of the present study was to investigate the effect of cognate-based instruction strategy on vocabulary learning among Iranian EFL learners. To achieve the goal of the study, 80 EFL learners (15-27 years old) took part in the study; all of them were learning English at language institutes of Lorestan and Isfahan provinces in Iran. Half of the participants who were native speakers of Laki language were assigned to experimental group and the remaining 40 who were from Isfahan and not familiar with Laki language were assigned to control group. Oxford Placement Test (OPT) was administered to make sure that the participants were homogeneous. The participants in both groups were taught target words (42 English-Laki cognate words), by the researcher, during six sessions. A pretest was administered for both groups before the treatment and a posttest was managed after the treatment for both groups. Three weeks after the treatment, a delayed posttest was administered for experimental group, only. One sample *t* test for pre and posttest, and paired sample *t* test for delayed posttest were run. Findings of the study showed that participants in the experimental group outperformed the participants in the control group, resulting in null hypothesis rejection. In addition, the results indicated similar performance of experimental group in both posttest and delayed posttest, confirming that new cognate words were not forgotten over a period of time.

Keywords: Cognate; Cross linguistic influence; Language learning strategies; Language; Vocabulary

Introduction

In recent years, the status of English, as an international language, has developed and English has become the major foreign language in Iran. People in Iran, like other countries, like to learn English in order to pursue their professional, educational, and communicative goals across the world. They need to learn English to be able to communicate with others. Not only people, but also policy makers in Ministry of Education and Ministry of Science, Research, and Technology have recognized the importance of learning English, based on which they developed and implemented English language learning and teaching programs. One of the most important and neglected aspects of English learning and teaching is how to involve students with vocabulary learning. A large number of techniques have been introduced to enhance this sub skill's learning. The present research tended to focus on whether using cognates shared in English and Laki (A language spoken in some parts of Lorestan, Ilam, and Kermanshah provinces, Iran) enhance English vocabulary knowledge of Iranian EFL learners.

Learners from many L1 backgrounds during their study of English are definitely faced with cognate words, those that celebrate their similarities from phonetic, orthographic, and semantic points of view across two or more languages. However, Pahlavannezhad and Hassan Zadeh Tavakoli (2013) stated the fact that the only element was used in conveying meaning is the actual similarities or dissimilarities of the appearance or form of the words and its meaning. Bilingual speakers rate cognate translation pairs as more similar phonologically and

orthographically than translation pairs that are not cognates (Elgort & Piasecki, 2014). Recognizing and using cognates has been indicated to be an important strategy for English Language Learners (ELLs) whose first language shares cognates with English (Kamil & Hiebert, 2005).

Based on the research objectives and considering the literature reviewed, the following questions are to be answered:

RQ1: Does cognate-based strategy improve Iranian EFL learners' knowledge of English vocabulary?

RQ2: Does cognate-based strategy result in long-retention of vocabularies in Iranian EFL learners' minds?

Based on the research questions of the study, the following null hypotheses are formulated:

H01: Cognate-based strategy does not improve Iranian EFL learners' knowledge of English vocabulary.

H02: Cognate-based strategy does not make vocabularies long-lasting in Iranian EFL learners' minds.

Literature Review

Meticulous research on vocabulary acquisition indicate that understanding 95% to 98% of the words, extensively used in the text, is a prerequisite for learning vocabulary incidentally or for understanding a text (Nation, 2001). In addition, Laufer (1998) pointed out that approximately 5000 individual word forms or 3000 word families (i.e., words such as common, uncommon, and commonly counted as one word) were considered a fundamental necessity to comprehend the text.

Craik (1993) and Feldman and Healy (2013) studies supported the contention that words containing phonemes that were familiar to the learner were easier to learn. It is important to note that the harder-to-learn words contained phonemes to which the participants had no prior exposure expressively or receptively, and learning words with these unfamiliar sounds was contrasted with novel words, containing sounds with which the participants had experience and consequently would be easier to discriminate and pronounce.

Models and Theories Concerning Cross Linguistic Influences

Parasitic Model

On the basis of a series of studies on foreign language errors in L2 and L3, Hall (1992, 1996, 1997), Hall and Schultz (1994), and Ecke and Hall (1997, 2000) have argued that vocabulary development may usefully be viewed as a problem of pattern-matching and assimilation with current lexical knowledge, at least at the onset of the word learning process. This psycholinguistic approach has motivated the postulation of a parasitic strategy of vocabulary development: a series of automatic, unconscious cognitive stages that an emerging lexical entry is hypothesized to undergo after the learner first encounters an unknown word.

According to the parasitic strategy, the key to learning the word is first to establish a form representation, i.e., construct a memory trace of the pronunciation and/or spelling, and, then, to make the right connections with existing lexical and conceptual knowledge. The strategy claims that after registering the form, learners will immediately identify a translation equivalent through overt translation into L1, by an L1 or L2 definition, by some icon (e.g., a picture or mime), contextual cues, or by whatever other media. This is because when language input is received, it is the immediate and inevitable responsibility of the language faculty in the mind/brain to deal with it, whether it is from the L1 or the L2.

BIA+ Model

According to the BIA+ (Bilingual Interactive Activation) model (Dijkstra & Van Heuven, 2002), the visual presentation of a word to a bilingual leads to parallel activation of orthographic input representations in the native language (L1) and the second language (L2). These representations, then, activate associated semantic and phonological representations, leading to a complex interaction (or resonance process) between codes from which the lexical candidate corresponding to the input word emerges and is recognized.

Furthermore, the BIA+ model makes predictions about a number of important issues that are still unresolved and debated in the literature. First, with respect to representational issues, it is still unclear exactly how cognates and interlingual homographs are represented in the bilingual lexicon. The BIA+ model proposes that interlingual homographs have separate representations for each language, whereas it remains possible that cognates have shared representations (Dijkstra & Van Heuven, 2002). This proposal is based on hints in the data from earlier studies (e.g. Dijkstra, Grainger, & Van Heuven, 1999, Dijkstra, Van Jaarsveld, & Ten Brinke, 1998), but no solid evidence supporting this claim is available. According to the BIA+ model, the activation of various lexical representations is constantly monitored by a task/decision system (Green, 1998). The task/decision system systematically uses the activation pattern in the word identification system to optimize responding. The BIA+ model predicts that different tasks will lead to systematically different response patterns, because responding can occur at different moments and can be based on different information sources.

The Facilitating Role of Cognates

Cognate facilitation effects have been observed for words presented out of sentence context, in a wide variety of tasks, including lexical decision (Dijkstra et al., 1999, semantic categorization (Dufour & Kroll, 1995), and picture naming (Costa, Caramazza, & Sebastian-Galles, 2000; Poarch & Van Hell, 2012). The facilitation effect is largely sustained when cognates are embedded in a semantically low-constraint sentence context (Duyck, Van Assche, Drieghe, & Hartsuiker, 2007; Libben & Titone, 2009; Schwartz & Kroll, 2006). In addition to behavioral evidence, event-related potentials (ERPs) also point to facilitating processing for cognates in terms of a reduced N400 (Midgley, Holcomb, & Grainger, 2010; Strijkers, Costa, & Thierry, 2009; Yudes, Macizo, & Bajo, 2010).

Brunner and Ankerstein (2013) investigated lexical transfer for German native speakers learning English and French. Seventy-two participants (all female aged between 15-16 years) were taken from four French classes in year 10 at a secondary school. Twenty French and English cognate pairs and 20 French and English false cognates were used as stimuli. All words were common nouns in both languages. Stimulus material was presented in randomized order. All participants completed a background questionnaire asking about their native language(s), whether or not they had taken Latin, and what their grades were for English and French. Participants were, then, given definitions of cognates and false cognates, and were asked to indicate which of the 40 listed word pairs were cognates and which were false cognates. There were four possible answers: 'false cognate', 'cognate', 'neither', and 'I do not know one or both words'. The experiment was restricted to 20 minutes to discourage the use of meta-cognitive search strategies. Results showed that all groups scored better on cognates in comparison to false cognates. Participants in all groups recognized more cognates and, out of the cognates they knew, they scored better on the test in comparison to false cognate. These findings suggest that CAH can be

extended to include transfer from L2 to L3 and that, in accordance with intercomprehension theories, a facilitation effect can be found between English and French, in particular.

Gholami, Alavinia, and Izadpanah's (2015) study was conducted to determine the participants' awareness of using true and false cognate words of L1 and L2 in learning English. Three hundred and eighty-five selected people from 3,789 statistical population participated in 2014–2015 at three levels of A.D., B.A., and M.A. of Islamic Azad University as well as teachers of English in English educational institutions in Zanjan (Iran). Each educational level was considered as one category with the total sample calculated by using Kokran Formula, and the amount of each category was determined by using appropriate proportion and randomized categorical sampling method. The participants' age was between from 18 to 52, with the mean age of 29 years. The materials were 45 words of true and false cognate words from 500 words by doing CVR (content validity ratio) and CVI (content validity index) (Lawshe's table with the index of 88% and 82%, respectively) for being reliable and valid. The awareness level of true and false cognate words was compared in different educational levels. The results showed no significant difference between the awareness of A.D., B.A., and M.A. levels, but there was a significant difference between the level of awareness of teachers group and the other groups (in true cognate words) and for false cognate words, there was no significant difference between the level of awareness of the four groups in this regard. Hence, the authors concluded that students did not recognize cognates and, due to this, instructors should teach students how to recognize and work with cognates. They also pointed that target word recognition was significantly influenced by the type of cognate. Likewise, given the pedagogical implications, teachers should not assume that just because cognates are used, students will recognize them. It is important to include more activities focused on word recognition in text-books or language curriculums to train students to identify cognates and use them appropriately.

Methodology

Participants

Eighty participants were invited to take part in this study, all of them being EFL learners studying at English language institutes of Lorestan and Isfahan provinces. Half of the students were native speakers of Laki language and the remaining half were from Isfahan and not familiar with Laki language. Their proficiency level was determined by Oxford Placement Test (OPT) to make them homogeneous. Forty participants (those who study English in Isfahan) were assigned to control group and the remaining 40 (those who study English in Lorestan) were allocated to experimental one, and were supposed to learn new English vocabularies through using cognate-based strategy. Male and female students with the range of 15-27 years of age participated in this study. Convenience sampling was used for the purpose of this study.

Materials

The material used in this study was a list of 42 words being cognates in English and Laki languages. These words were selected from a large number of cognate words (shared in English and Laki languages) based on the strong connections from phonetic, orthographic, and semantic points of view. In other words, those words which were very similar both in English and Laki languages were selected. In this way, the words are more mnemonic for the experimental group learners and learning the words will be an easier task.

Instruments

As it was mentioned, an OPT (version 2001) was administered to determine the proficiency level of the participants and a pretest posttest design was used in this study. Moreover, a delayed posttest was administered to experimental group after three weeks.

The target words were administered to both experimental and control groups in the form of pretest and posttest which were developed by the researcher. After three weeks, experimental group took another test (delayed posttest) to see if they forgot the target words after a period. In order to avoid the memory effect, the order of the delayed posttest, compared to posttest, was changed. A pilot study was conducted before starting the main project to provide the reliability of the tests and modify the probable imperfections of the study.

The validity of the tests was verified based on expert judgment. The first drafts of the pre and posttest as well as delayed posttest were constructed according to the research aims. These tests were sent to three experts with the intention of being reviewed by them. According to the viewpoints of these experts, some changes were made on the first drafts of the pre and posttest. The second draft was designed as the result. In addition, the reliability of the tests was determined using Kuder-Richardson 21 formula. The obtained reliability of 0.7 for pre and posttest was acceptable for this study.

Procedure

The present study took place in a classroom setting in both Lorestan and Isfahan English language institutes. The researcher presented the target words to the students and asked them to translate the words into their first language to make sure that they were not familiar with these words. Some of the participants translated some of the target words. Hence, those words which were translated by some of the participants were excluded from the list of target words and were substituted by other unknown cognate words. The treatment was implemented as follows:

The researcher presented new English words (being cognate with Laki) in class, wrote them on the board, provided their dictionary pronunciation, and illustrated them in simple sentences. The researcher used different techniques of vocabulary teaching such as pointing, drawing, and using gestures. In addition, the researcher provided English synonyms, explained the meaning of the target words in English, and provided Persian equivalences, after participants could not guess the meaning of the words. The participants were requested to repeat the words, individually and in chorus, to decide if they have learnt the correct pronunciation of the target words. To make sure that learning has completely occurred, then, the participants were required to write short meaningful sentences each including a target word.

This process was repeated for both experimental and control groups in six sessions, each session taking 45 minutes, but the difference was that in the experimental group the cognateness of the words such as the phonetic, orthographic, and semantic connections shared in English-Laki cognate words was overemphasized. Seven new words were taught in each session and the treatment was repeated for 6 sessions.

Data Analysis

The last step of the study was the evaluation of two groups regarding their progress in learning the new words. After collecting the data, SPSS software (version 22) was used to analyze the tests results. An independent sample T test was applied to see if there was any significant difference between the two groups of the participants. In addition, a paired sample T test was applied to see the performance of the experimental group in delayed posttest.

Results

After administering the OPT, 80 homogeneous learners were chosen and divided into two groups of EG and CG. To further make sure that the two groups did not have prior differences, their OPT scores were compared using an independent-samples T test. Descriptive statistics regarding these participants are presented in Table 1.

Table 1. Descriptive Statistics of the OPT for the EG and CG Learners

Groups	N	Mean	Std. Deviation	Minimum	Maximum
EG	40	34.7	2.06	30	39
CG	40	35.07	1.77	31	39

Table1 shows the number of participants in each group, along with their mean scores, standard deviations, minimum scores, and maximum scores. The two mean scores did not appear to be very different; however, to ascertain this was the case, independent-samples t test table was consulted.

Table2. Results of the Independent-Samples t test for Comparing the EG and CG OPT Scores

	Levene's Test for Equality of Variances		t test for Equality of Means							
	F	Sig.	t	d	f	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
OPT	1.816	.182	.756	78	.452	.32500	.42987	.53081	.18081	

The p value under the *Sig.* (2-tailed column) was larger than the significance level (i.e., $.452 > .05$); it could, thus, be inferred that there was not a statistically significant difference in the OPT scores for EG ($M = 34.7$) and CG ($M = 35.07$), $t(78) = .756$. The approximate equality of the two groups on the OPT is also graphically shown in Figure 1.

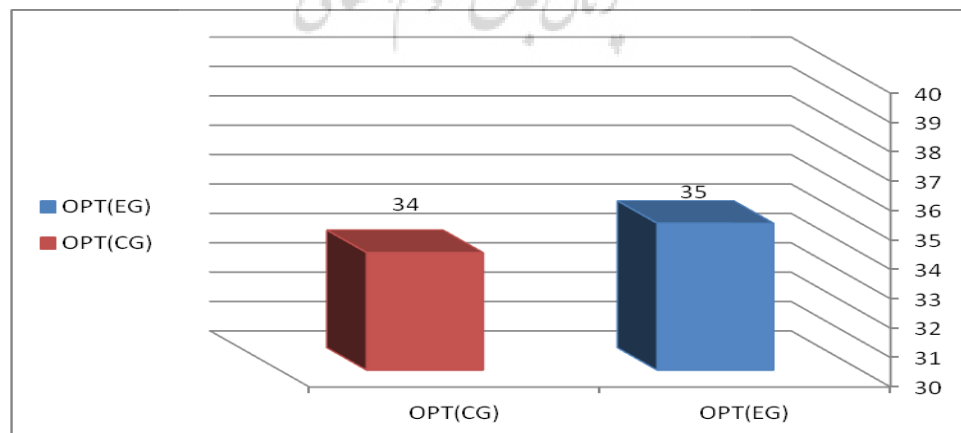


Figure 1. The Mean Scores of the EG and CG on the OPT

It could be clearly seen, in Figure 1. that the difference between the OPT scores of the EG and CG was not very considerable.

The first research question was "Does cognate-based strategy improve Iranian EFL learners' knowledge of English vocabulary?" To uncover the possible effectiveness of cognate words in enhancing the English vocabulary knowledge of the EFL learners, the pretest scores of EG and CG learners had to be compared via an independent-samples *t* test, to make sure that they were not drastically different with respect to the variable under investigation at the outset of the study. An independent-samples *t* test was used, again, to compare the EG and CG learners' posttest scores after the experiment was completed. Table 3. shows the descriptive statistics related to these analyses.

Table 3. Descriptive Statistics for Comparing the EG and CG Scores on the Pretest and Posttest

	Groups	<i>N</i>	Mean	Std. Deviation	Minimum	Maximum
Pretest	EG	40	15.9	3.01	11	24
	CG	40	12.6	4.5	6	22
Posttest	EG	40	20.8	4.7	10	29
	CG	40	10.6	3.9	6	20

On the pretest, the mean score of the EG ($M = 15.9$) was only slightly upper than the mean score of the CG ($M = 12.6$). However, for their posttest scores, the EG learners' mean score ($M = 20.8$) appeared to be greater than that of CG ($M = 10.6$). To check the statistical significance of these differences between the pretest scores of the two group and between their posttest scores, one needs to consult the *Sig.* (2-tailed) column in the T test table which follows (Table 4.).

Table 4. Results of the Independent-Samples *t* test for Comparing the EG and CG Scores on the Pretest and Posttest

		Levene's Test for Equality of Variances		<i>t</i> test for Equality of Means		
		<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig.</i> (2-tailed)
Pretest	Equal variances assumed	15.952	.000	-.19	42	.64
	Equal variances not assumed			-.19	78	.64
Posttest	Equal variances assumed	1.868	-10.621	78	78	.001
	Equal variances not assumed			78	75.516	.001

According to Table 4., there was not a statistically significant difference in pretest scores for EG ($M = 15.9$, $SD = 3.01$) and CG ($M = 12.6$, $SD = 4.5$), $t(42) = -.19$, $p = .64$ (two-tailed).

This was so because the p value was greater than the specified level of significance (i.e. .05). However, comparing the two groups' posttest scores, it was found that the p value was smaller than the alpha level ($.001 < .05$), and, thus, the difference between the EG ($M = 20.8$, $SD = 4.7$) and CG ($M = 10.6$, $SD = 3.9$) was statistically significant. This leads to the conclusion that the EG received a treatment which was completely effective. The results obtained from the t test analyses are graphically shown in Figure 2.

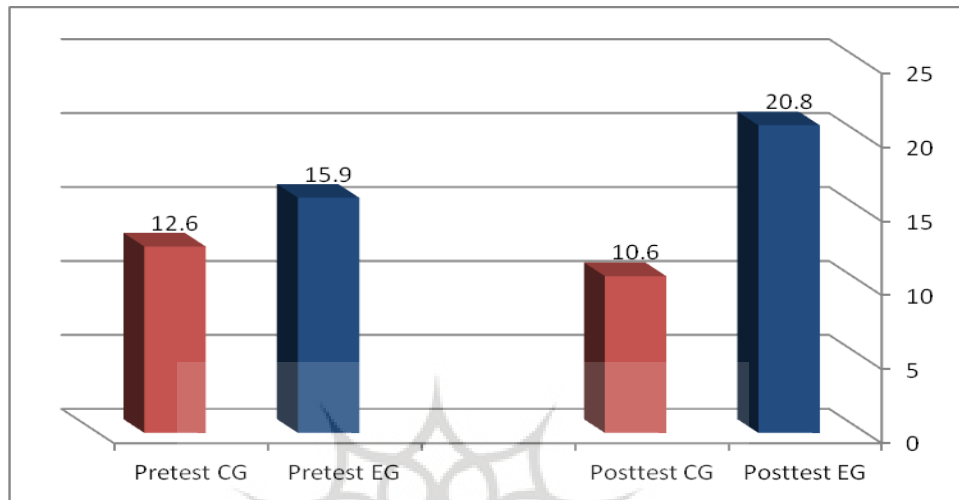


Figure 2. The Mean Scores of the EG and CG on the Pretest and Posttest

As it could be seen in Figure 2., the difference between the pretest scores of the EG and CG was small, but the difference between their posttest scores was considerable. This indicates the benefit the EG learners obtained from their instruction was effective.

The second research question was "Does cognate-based strategy result in long-retention of vocabularies in Iranian EFL learners' minds?" To find out the possible effects of time on the retention of vocabularies in Iranian EFL learners' minds, a paired-samples t test was conducted. This statistical test shows that there is not a significant difference between the performance of EG participants in posttest and delayed posttest. The results of paired-samples t test is presented in the following table.

Table 5. Results of the Paired-Samples t test for Comparing the EG Scores on the Posttest and Delayed Posttest

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Posttest.EG Delayed.Posttest.EG	-.42500	6.04635	.95601	2.35872	1.50872	-.445	39	.659

In table 5, sig equaled .659, which is larger than alpha level ($p > 0.05$), indicating no significant difference. In other words, the interval time between delayed posttest, which was

administered four weeks after the posttest, had no effect on EFL vocabulary learning, and if the learners were informed about the cognates shared in English and their mother tongue, they not only learned them, but also memorized them for a long time. The results obtained from the *t* test analysis are graphically presented in Figure 3.

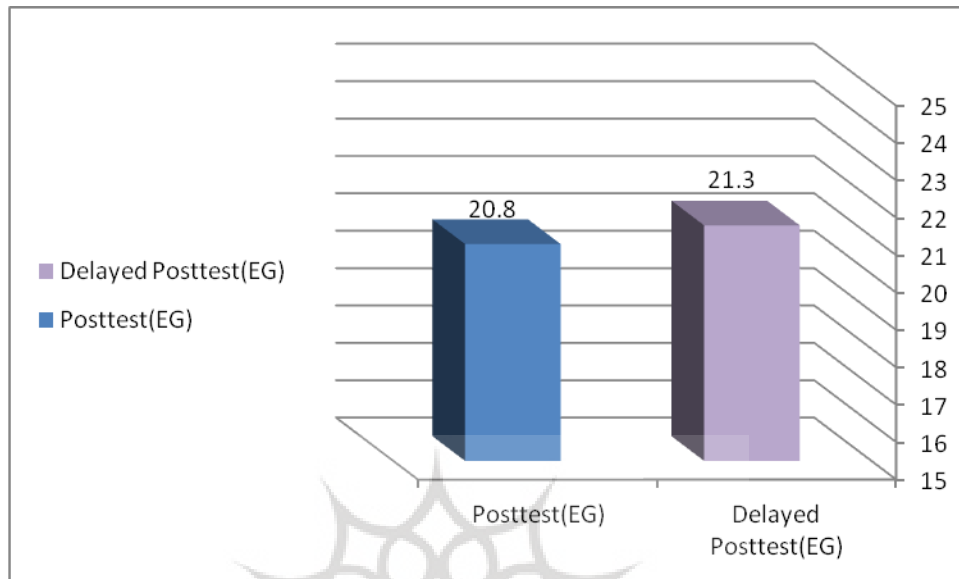


Figure 3. *The Mean Scores of the EG on the Posttest and Delayed Posttest*

As shown in Figure 3. the difference between the posttest and delayed posttest scores of the EG was small.

Discussion

The results obtained from the analysis of the tests highlighted the beneficial effects of cognate-based instruction strategy on long-retention of target words. Furthermore, the results of the analysis of the tests supported the findings of study conducted by Comesana et al. (2010), and Lima (2010) who focused on the role of cognate and non-cognate words on second language learning methods, and concluded that "cognate words are easier to learn than non-cognate words because of the stronger lexical links" (p. 203).

Moreover, the findings of this research may be in line with Parasitic Model. According to the Parasitic Model, the key to learning the word is first to establish a form representation, i.e., construct a memory trace of the pronunciation and/or spelling, and, then, to make the right connections with existing lexical and conceptual knowledge. The strategy claims that after registering the form, learners will immediately identify a translation equivalent through overt translation into L1, by an L1 or L2 definition, by some icon (e.g., a picture or mime), contextual cues, or by whatever other media. This is because when language input is received, it is the immediate and inevitable responsibility of the language faculty in the mind/brain to deal with it, whether it is from the L1 or the L2.

The results of the present study, in the same vein, are in agreement with BIA+ (Bilingual Interactive Activation) Model (Dijkstra & Van Heuven, 2002) stating the visual presentation of a word to a bilingual leads to parallel activation of orthographic input representations in the native language (L1) and the second language (L2). These representations, then, activate associated

semantic and phonological representations, leading to a complex interaction (or resonance process) between codes from which the lexical candidate corresponding to the input word emerges and is recognized.

The results of this study also support the findings of the previous studies conducted in facilitating role of cognates (Midgley et al., 2010; Strijkers et al., 2009; Yudes et al., 2010). The facilitation effect is taken as evidence for co-activation; that is, the activation of representations from both languages upon presentation of cognate words. Findings in the present study are consistent with the findings of Dressler (2000) who concluded that those students who were taught to search for cognate relationships were more successful in inferring meaning for untaught cognates than their peers in the control group.

Furthermore, Dressler pointed out that there was variability in the perception of L1/L2 cognates, the connection between the phonologically more transparent ones being more easily perceived than between the less salient ones.

Conclusions

The main objective of the present study was vocabulary improvement. In this sense, it sought to investigate effect of using of cognates shared in English and Laki languages on vocabulary learning as well as the time the learners memorize the target words. In this sense, it was successful in fulfilling objectives of the study. The evidences obtained from this study suggest that exploiting such an instruction could promote vocabulary learning in an educational context. Firstly, the results of the study confirmed that exploiting cognate-based instruction as a strategy to teach new vocabulary items could improve EFL learners' vocabulary knowledge. Secondly, learners who are informed of the existing common cognates in English and their mother tongue not only learn the new words easily, but also memorize them for a long time. In other words, new vocabulary items, which are learned through cognate-based instruction strategy, are long-lasting in learners' minds.

This study was not out of limitations. First of all, this study did not have a large sample size. The participants of this study consisted of 80 EFL learners. Due to this fact, a word of caution should be taken into account in generalizing the results.

The next limitation of the present research was the duration of training. It was limited to six sessions. Therefore, longer or shorter duration may ensure different outcomes. The present research is applicable to the language institutes in Lorestan and Isfahan provinces, only. The sampling frame is limited to institute; therefore, the results may not be generalized to the entire educational contexts.

Like many other studies in the field of language teaching, this research has covered only a small area of subject matter selected for investigation. Further research can be conducted with more participants in other situations and with different learning materials. Some suggestions for further study are as follow:

1. The attitude of the teachers toward the use of cognates is one of the important factors that worth being studied.
2. The study, also, can be replicated with students with other levels of proficiency or with other linguistic items to be learned.
3. More studies are needed to be carried out to extract the perspectives of EFL learners toward exploiting cognates.
4. Having a variety of languages like Arabic, Guilaki, Baluchi, Turkish, and Kurdish, Iran is considered a suitable setting for researchers to conduct such research and use these languages' cognates to improve EFL learners' skills and sub skills in different parts of the country.

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