The Effects of Explicit and Implicit Instructional Techniques on Iranian EFL Learners' Comprehension and Production of Lexical Collocations

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Abstract: To investigate the effect of explicit and implicit techniques of presentation on Iranian adult upper-intermediate learners' comprehension and production of lexical collocations, a sample of 180 participants at four major English language institutes in Qazvin were presented with six different implicit and explicit instructional techniques. Before the treatment, the researchers administered a pre-test including 160 multiple-choice items to make sure that the participants had no prior knowledge of the target collocations. The participants were then randomly assigned to two groups, and each group received instruction based on one of the treatment conditions: explicit or implicit presentation techniques. At the end of the treatment period, a comprehension and a production test of lexical collocations were administered. The obtained data were analyzed using independent samples t-test procedures. The results indicated no significant difference between the effects of implicit and explicit techniques on the comprehension and production of lexical collocations. The findings of this study may have implications for learners, teachers, and syllabus designers.

Key words: Explicit instruction • Implicit instruction • Lexical collocations

INTRODUCTION

The relationship between explicit and implicit knowledge and learning in general and language learning in particular has been extensively studied in psychology, education, and applied linguistics (Sonbul & Schmitt, 2013). As Schmitt (2008) points out, the past few decades have seen a large number of studies in second language vocabulary learning. According to Ellis (2001) and Nation (2001), collocations are an important part of vocabulary knowledge. Hsu (2007) as well as Bahns and Eldaw (1993) also consider collocations as an important part of vocabulary knowledge.

DeKeyser (2005) states that a limited number of studies have been conducted on implicit and explicit learning of target features. Shook (1994), Alannen (1995), Durrant and Schmitt (2010), Fahim and Vaezi (2011), and Goudarzi and Moini (2012) are among the few studies which have explored implicit and explicit learning of target features. At the same time, several investigators including Zhang (1993), Zarei and Koosha (2002), Sung (2003), Koosha and Jafarpoor (2006), Siyanova and Schmitt (2008), Durrant and Schmitt (2010) and Sonbul and Schmitt (2013) have examined the knowledge of collocations, patterns of learners' problems with collocations , and the effect of different types of instruction on collocation learning. However, there seems to be a paucity of research on the effect of explicit and implicit instructional techniques on EFL learners' learning of lexical collocations. Therefore, the aim of this study is to address this gap and to answer the following research questions:

1-Is there any significant difference between the effects of explicit and implicit techniques of instruction on EFL learners' comprehension of lexical collocations?

2-Is there any significant difference between the effects of explicit and implicit techniques of instruction on EFL learners' production of lexical collocations?

REVIEW OF LITERATURE

By definition, collocation refers to a sequence of words that co-occur more often than would be expected by chance (Nesselahauf, 2003). An example of a collocation is the expression 'strong tea'. While the same meaning could be conveyed by the roughly equivalent '*powerful tea', the latter expression is considered incorrect by native speakers of English.

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As long ago as 1933, Palmer highlighted the importance of collocation as a key to producing natural-sounding language for anyone learning a foreign language (Hsu, 2007). Thus, from the 1940s onwards, information about recurrent word combinations became a standard feature of dictionaries. As these dictionaries became less word-centered and more phrase-centered, more attention was paid to collocations.

There are different definitions of collocations in the literature. Nation (2001) regards collocations as the tendency of one word to co-occur with other words in a specific domain. Walsh (2005) differentiates between a broad and a narrow sense of collocations. In the broad sense, he states there are some patterns which separate collocations from grammatical structures. However, in the narrow sense, he believes there are some natural or idiomatic friendships between lexical items that are determined by linguistic rules.

Ellis (2001) interprets collocations as linguistic 'chunking' and claims that chunking enables the user to store a larger amount of information in short term memory. He suggests that increasing fluency and efficiency is a positive effect of chunking and refers to chunking as a subconscious process which is only evident in performance (Ellis, 2002).

Collocations are classified in the literature as either lexical or grammatical (Mongkolchai, 2008). According to Carter (1987), lexical collocations are derived from the companionship between two words or more lexical units, and grammatical ones are taken from grammatical relationships between words. Aside from the lexical/grammatical dichotomy, there are other classifications. Carter (1987) classifies collocations into four main types including unrestricted collocations, semi-restricted collocations, familiar collocations and restricted collocations

Collocations make up around 70% of what we produce via language (Hill, 2000), and they are common in all languages (Mongolchai, 2008). Much has been said about the importance of collocations in language use. For instance, Zengin (2009) considers them as the most important 'mechanisms of language',

It has also been argued that knowledge of collocations can improve learners' knowledge of other aspects of language. For instance, Brown (1974) found that when learners' knowledge of collocations increased, their oral skills, and reading speed also improved. Also, Walsh (2005) argues that knowledge of collocations is essential to using language fluently. Previous research has also shown that knowledge of collocations can assist learners to obtain native-like performance in speaking and writing (Bahns, 1997; Kennedy, 1990; Shin & Nation, 2007).

Collocations can also be a source of great difficulties for language learners (Nesselhauf, 2003). Benson, Benson, and Ilson (1985) state that because of their subjective and 'arbitrary' nature, collocations cause some problems for learners; therefore, it is better for teachers and instructors to encourage learners to learn them.

Learners' use of collocations is affected by many different factors such as overgeneralization, paraphrasing, interlingual transfer, intralingual transfer, insufficient knowledge of collocation, and analogy. Liu (1999) referred to 'interlingual transfer' and 'absence of familiarity with collocations' as the main sources of the production of unnatural collocations. Koosha and Jafarpour (2006) investigated the effect of L1 transfer on the production of collocations among Iranian EFL learners and concluded that although Iranian EFL learners easily learn grammar and vocabulary of the target language, they encounter difficulties with the production of collocations.

Teachers and researchers are increasingly aware of the importance of formulaic sequences and collocations in using language idiomatically (Lewis, 2000; Wray, 2002). Hsu (2007) states that scholars from different fields like second language vocabulary leaning (Bahns & Eldaw, 1993), pedagogy (Ellis, 1996; Nation, 2001), and materials and curriculum design (Richards & Rogers, 2001) have emphasized the teaching of collocations.

What all this boils down to is that it is important to find better ways of teaching collocations. Before we discuss teaching collocations, it is important to make a few points. The first point concerns effectiveness. The results of Lin's study (2002) on the effect of teaching collocations on the observed development of learners' vocabulary knowledge revealed that instruction brought about a significant improvement in learners' production of collocations.

Another issue is related to selection. Nesselhauf (2003) believes that it is not clear which of the very many existing collocations should be selected for instruction in the EFL context. Indeed, according to Nesselhauf (2003), and Shin (2007), there is a general consensus among materials developers and teachers that the development of a set of criteria seems necessary for forming a basis for the selection of most frequent and useful collocations.

The third important point is the question of when to teach collocations. In Zinkgräf's view (2008), it is better to include collocations in learners' curriculum from the very beginning levels of language learning.

As to the most effective techniques which can be used in teaching collocations and formulaic sequences, there is an ongoing debate among teachers, researchers, and linguists about whether explicit or implicit techniques

should be used. According to DeKeyser (2005), it is important to understand the difference between implicit and explicit learning mechanisms and their roles in second language learning. Hyes and Broadbent (1988) define implicit learning as "the unselective and passive aggregation of information" (p. 251). According to Hulstijn (2008), picking up information without intentional information is a general definition of incidental learning. Recently, Schmitt (2010) defined incidental learning as "learning which occurs as a by-product of language usage, without the intended purpose of learning a particular linguistic feature" (p.29).

On the other hand, explicit instruction is defined as a process by which pedagogical rule presentation is followed by illustrative examples of their application (Ellis, 1993). DeKeyser (2005) divides explicit instruction into two types: deductive and inductive. When instruction is done through rule explanation, deductive learning takes place and when learners are given examples to work out the rules, inductive learning occurs.

A number of studies have emphasized the advantage of explicit instruction over implicit techniques. For instance, Ellis (2001) claims that different types of explicit instruction are more effective than implicit instruction since they can speed up the learning process. Similarly, in a meta-analysis of the studies conducted between 1980 and 1998, Norris and Ortega (2000) concluded that formal and explicit instruction could lead to durable learner development. They also assert that direct instruction is much more effective than indirect instruction.

More recently, Spada and Tornita (2010) reviewed the results of 44 studies which employed explicit and implicit instructional techniques. The results of this meta-analysis showed that direct instruction is more effective than indirect instruction on enhancing and developing implicit knowledge.

On the other hand, Smith (1993) introduced input enhancement, defining it as a process by which learner attention is directed to certain features of input and concluded that input is changed into intake due to the presence of attention. The visual salience of target features can be increased through the use of different formatting techniques such as bolding, capitalizing, underlining, and shading, using different fonts, word cards, and posters (Leow, 2001).

Explicit instruction can be integrated into classrooms in many different ways. While the focus of most teacher education courses is on direct instructional approaches like clarity, questioning strategies, and wait time, little attention has been paid to cooperative learning methods (Rosenshine & Strevens, 1986).

DeKeyser (2005) states that a limited number of studies have been conducted on implicit and explicit learning of target features in laboratory and classroom contexts, and that mixed results have been reported. In one such study, Shook (1994) investigated the acquisition of Spanish present perfect tense and relative pronouns by 125 first and fourth semester adult native English speakers. Three groups of learners participated in this study: the first group received written input enhancement, the second group was given written enhancement and direction to pay attention to form, and the third or control group received neither input enhancement nor direction to pay attention to forms. The results showed that the groups with input enhancement outperformed the control group, and there was no statistically significant difference between the explicit group, who had been directed to attend to form, and those who had not.

VanPatten and Cadierno (1993) examined the effect of form-focused instruction and input processing instruction on the comprehension and production of target features. The researchers categorized participants into two groups. The form-focused instruction group received explicit instruction and practice of target features. The participants in the processing instruction group were instructed and then asked to process input data. Based on the scores of comprehension and production tests, the processing instruction group outperformed their counterparts in both comprehension and production of target features. However, the participants in the form-focused group had a good performance on production tests.

Alanen (1995) carried out a study to investigate the effect of enhanced and unenhanced input on patterns of consonant change in 36 adult English speakers who studied Finish. Participants were in four groups: Three experimental groups received enhancement in italic form, rule search and enhancement with rule search, and the control group received only rule search. Results showed no advantage of input enhancement over unenhanced input.

Leow (2001) studied the effect of input enhancement on the learning of Spanish imperatives and commands. 38 native English learners of Spanish were divided into three groups. The experimental groups (first and second groups) received target features in bold and underlined formats, and the control group did not receive any textual enhancement. The results showed no advantage of the enhanced groups over the unenhanced group regarding their performance on pre and post-tests.

Jenson and Vinther (2003) examined the effect of exact repetition and speech rate reduction (as input enhancement technique) on the acquisition of Spanish as a second language. Their participants were 84 upper-intermediate Spanish learners. The researchers

categorized the participants into three experimental groups and one control group. The experimental groups were asked to watch a video of native speakers' conversation at different speeds. However, the control group did not receive any such treatment. Based on the scores of pre- and post-tests, they concluded that the experimental group with different speed combinations and repetition performed better than the control group.

Macaro and Masterman (2006) studied the effect of explicit instruction on the learning of French grammar rules. 12 native English learners of French were given explicit instruction before their university lessons over a period of five months. The participants were tested three times during the instructional period and compared with those learners who did not receive explicit instruction. The results showed that the explicit groups were better than the control group regarding their performance on grammar tests.

Collocations have also been extensively studies. Several experimental studies have been conducted on the knowledge of collocations among EFL/ESL learners. Bahns and Eldaw (1993) studied knowledge of collocations among advanced EFL learners whose their L1 was German. In their study, they investigated the production of verb-noun collocations through cloze test and translation tasks. The results of their study highlighted the insufficient knowledge of English collocations among German learners.

The results of Farghal and Obiedant's (1995) study confirmed those of Bahns and Eldaw's (1993) study. In their study, Farghal and Obiedat investigated the differences between the knowledge of collocations of English teachers and that of advanced EFL learners. These two groups were asked to take two tests. Advanced EFL learners were asked to take a fill-in-the-blank-test, and the EFL teachers were asked to write the English equivalent of each Arabic combination. The results of their study showed that neither EFL teachers nor advanced learners had sufficient knowledge of collocations.

Zarei (2003) studied Iranian advanced learners' problems with the production of English collocations. This study was conducted in two phases: extracting learners' collocational errors from 2,400 pages of produced written materials and investigating patterns of 64 learners' problems in cued production tasks. The results showed that advanced learners have difficulty with five patterns of collocations.

In another similar study, Nesselhauf (2003) examined the use of different forms of word combinations (i.e. free combinations, restricted collocations, and idioms) and their acceptability in the written production of German EFL learners. The results of her study revealed that of the total number of 1,072 word combinations,

255 were erroneous and the most frequent type of problem was incorrect verb choice.

Zarei and Koosha (2003) conducted a study to find out the problems of Iranian advanced learners with the production of lexical collocations. Their study had two phases and the results of their study showed that 55% of Iranian advanced learners had problem with lexical collocations.

In another study, Huang (2007) investigated the correlation between reading proficiency of EFL learners and their collocational competence. He divided 76 Taiwanese students in two groups: an experimental group and a control group. The experimental group received collocational instruction. A comparison of pre- and post-tests of both groups revealed that the experimental group performed better than the control group. Accordingly, he arrived at the conclusion that there is a significant positive correlation between collocational competence and reading proficiency.

Siyanova and Schmiitt (2008) carried out a study on processing and production of 1,810 adjective-noun collocations in the written production of 31 Russian students. The frequency of those collocations in BNC was as follows: half of the collocations were quite frequent, a quarter did not exit, and another one-quarter had lower frequency in BNC. The results showed that Russian learners are able to produce acceptable collocations, but that the fluency in producing combinations does not match the fluency of native speakers.

In an experimental study, Durant and Schmitt (2010) examined the effects of different kinds of exposure including single and verbatim and varied repetition on 84 non-native adult learners' retention of collocations. Among different kinds of implicit instruction, verbatim repetition was more effective than the other types of contextual repetition (i.e. varied repetition).

Zarei and Baniesmaili (2010) investigated the ability of Iranian upper-intermediate EFL learners to learn different patterns of lexical collocations. The participants were 34 university students. The results suggested that they had better performance in 'noun + noun' and 'adj + noun' combinations. However, 'noun + verb' was considered as a great source of difficulty for EFL learners.

In another study, Sonbul and Schmitt (2013) examined the effect of enriched, enhanced and decontexualized input on 35 native English speaking participants. They carried out the study in two phases. In the first phase, there were 35 native participants. Results of this phase showed that the decontexualized condition led to higher learning than did enriched condition, and enhanced input did not make any difference. In the second phase, 43 non-native participants took part. Results showed all the three learning conditions led to the development of

collocational knowledge, but the enhanced condition was more effective than the enriched condition.

As the above short review suggests, various aspects of both collocations and explicit/implicit instruction have been investigated. However, there appears to be a gap in our understanding of how explicit or implicit instructional techniques might influence the comprehension and production of lexical collocations. This study is an attempt to partially fill this gap.

METHOD

Participants
The participants of this study were initially, 250 male and female upper-intermediate level EFL students between the ages of 16 and 30 at four English language institutes in Qazvin, Iran. However, only 180 of them were included in the study after a placement test (described below) was administered. All the participants had been studying English for at least four years. All the participants were native speakers of Persian.

Instrumentation
The data collection instruments utilized in this study included the following:
1. Michigan English Language Proficiency Test (MELPT): To determine the homogeneity of the participants in terms of their vocabulary knowledge, the vocabulary subtest of MELPT was used, which contained 35 items in multiple-choice format.
2. A multiple choice pre-test including 160 selected collocations was administered to ensure that the participants had no prior knowledge of the target collocations.
3. Two post-tests with the following characteristics were also used:

a. A multiple-choice test of collocational knowledge consisting of 30-items was administered to the participants to measure their comprehension of noun +noun collocations (e.g. a pack of dogs, a box of matches, etc).

b. A fill-in-the-blanks test including 30-items was given to the participants to gauge their production of noun+ noun collocations. Each item contained a phrase or a statement with a blank to be filled with one of the target collocations.

Since the questions were taken from "English collocations in use" and" Oxford Collocations Dictionary for Students of English", the content validity of the tests was taken for granted. The reliability of the tests was estimated through KR-21 method. The reliability index turned out to be .71 for the comprehension test and .62 for the production test.

The instructional materials included 160 noun + noun collocations extracted from "English collocations in use" and "Oxford Collocations Dictionary for Students of English".

Procedure and Data Analysis
To begin with, 250 upper-intermediate level learners were selected based on cluster sampling and availability. Then, a 35-item multiple choice vocabulary sub-test of MELPT was administered to determine the homogeneity of the sample. It took 35 minutes. This resulted in the selection of 180 learners whose scores were between one standard deviation above and below the mean. Then, to make sure that the participants have no prior knowledge of the target collocations, the multiple-choice pre-test was administered. Then, the learners were randomly assigned to two instructional groups, each group receiving instruction under one of the experimental conditions (explicit and implicit instructional techniques) for over 16 sessions twice a week. Each session lasted about one and a half hour, with about 20 minutes allocated to the treatment. Each group was presented with 10 words every session. The treatment consisted of Jigsaw, STAD, and individual learning as techniques of explicit instruction and capitalizing, underlining and word card as techniques of implicit instruction of teaching the target collocations. To answer the research questions and to analyze the data, two independent samples t-test procedures were used.

RESULTS AND DISCUSSION

Results
The first research question sought to investigate the effect of explicit and implicit presentation techniques on EFL learners' comprehension of lexical collocations. To this end, an independent samples t-test was used. Descriptive statistics are shown in Table 1.

Table 1: Descriptive statistics for the t-test on the comprehension of collocations

	mode	N	Mean	Std. Deviation	Std. Error Mean
Comprehension	Implicit	90	17.38	4.798	.506
	Explicit	90	16.78	3.848	.406

Based on Table 1, the mean score of the implicit group ($\bar{x}$ =17.38) is higher than that of the explicit group ($\bar{x}$=16.78). In order to see whether or not the observed difference is statistically significant, an independent samples t-test was used, yielding the following results.

Based on Table 2, the F-value and the significance level ($F_{(1,178)}$ = 7.609, p < .01) indicate that the assumption of the equality of variances is violated. This means that instead of the first row, the second row of the table (with equal variances not assumed) has to be checked.

Nonetheless, the index of the observed t value and the significance level shows no significant difference between the two groups ($t_{(1,169)}$ = .925, p > .05).

Table 2: Independent samples t-test results on the comprehension of collocations

		F	Sig.	t	df	Sig.(2tailed)	Mean Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Comprehension	Equal variances assumed	7.60	.006	.925	178	.35	.60	-.679	1.879
	Equal variances not assumed			.925	169.97	.35	.60	-.680	1.880

The second research question sought to investigate the effect of explicit and implicit presentation techniques on EFL learners' production of lexical collocations. To this end, an independent samples t-test was used. Descriptive statistics are shown in Table 4.12.

Table 3: Descriptive statistics for the t-test on the production of collocations

	Mode	N	Mean	Std. Deviation	Std. Error Mean
Production	Implicit	90	17.12	4.321	.455
	Explicit	90	16.36	4.220	.445

Table 3 shows that the mean score of the implicit group ($\bar{x}$ =17.12) is higher than that of the explicit group ($\bar{x}$=16.36). In order to see whether or not the observed difference is statistically significant, another independent samples t-test was used, yielding the following results:

Table 4: Independent samples t-test results

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Production	Equal variances assumed	.011	.916	1.20	178	.230	.767	-.490	2.023
	Equal variances not assumed			1.20	177.90	.230	.767	-.490	2.023

Based on Table 4, the index of the observed t value and the significance level shows no significant difference between the two groups ($t_{(1,178)}$ = 1.20, p > .05).

Discussion

The results of this study revealed that the difference between the explicit and implicit presentation techniques on EFL learners' comprehension and production of lexical collocations was not statistically significant. This means that explicit and implicit presentation techniques have no differential effect on the comprehension and production of lexical collocations.

The findings of the present study lend support to those of Alanen (1995) and Leow (2001), who found no significant difference between explicit and implicit instruction in terms of their effect on learners' achievement.

On the other hand, the findings of these two research questions do not go in line with most of the studies mentioned in the review of literature. The findings of the present study are different from those of, Norris and Ortega (2000), Ellis (2001), and Macaro and Masterman (2006), who claim that explicit instruction is more effective than implicit instruction, and that explicit instruction could lead to more durable learning. The results of this study are also different from those of Spada and Tornita (2010), Zaferanieh and Behrooznia (2011), who showed that explicit presentation techniques were more effective than implicit techniques.

These findings are also in conflict with those of Jenson and Vinther (2003), Shook (1994), and VanPatten and

Cadierno (1993), who found that the groups receiving implicit instruction outperformed their counterparts.

A number of factors could possibly account for the discrepancies between the findings of this study and those of the above-mentioned studies. One of the reasons may be attributed to the learners' proficiency level. For example, in Zaferanieh and Behrooznia (2011) and Zarei (2012) studies, all of the participants were at elementary and intermediate levels, but the participants of the present study were upper-intermediate level learners.

Another factor could have been the age of the participants. The participants of this study were between the ages of 16 to 30. So, one of the reasons why we came up with different results was probably because of the differences between the age level of the participants in this study and in other studies. Moreover, in the present study the participants were studying in an EFL context. This means that part of the difference between the results of this study and those of the above-mentioned studies, which were conducted in ESL settings, could be attributed to the context of study.

CONCLUSION

The findings of the present study showed no significant difference between explicit and implicit instructional techniques affecting Iranian EFL learners' comprehension of lexical collocations. Based on these findings and those of other studies in the relevant literature, it may be concluded that it does not matter how lexical collocations are presented as long as teachers make sure that they do present them. This implies that instead of jumping from one instructional technique to another (in particular jumping between explicit and implicit techniques), teachers probably need to look elsewhere to find a way to help learners improve their knowledge of collocations.

It may also be concluded that instead of sticking resolutely to either explicit or implicit instructional techniques, probably teachers had better use a combination of explicit and implicit techniques together. This may be more justifiable on grounds that learning collocations can be effected by a wide range of individual learner variables including proficiency level, learner styles and strategies, attitude, aptitude, and a host of other factors. As a result, implicit and explicit instructional techniques may be more effective when they complement each other and bring about better results simply because one size normally does not fit all. This means that materials developers may also be able to contribute to the improvement of EFL learners' knowledge of collocations by including materials that encourage the use of various activities and instructional techniques. By so doing, materials developers may actually take on the role of agents of change encouraging teachers to incorporate variety into their teaching and discouraging them from sticking to the security of routinized activities.

One point that needs to be considered about the findings of this study is that they might have been affected by variables like the context of teaching, learners' age, gender, proficiency level, as well as many other factors. These factors may also account for the discrepancies between the findings of this study and those of other studies. The conditions under which the present study was conducted as well as the above mentioned areas of conflict are probably indicative of the need for further research in this area.

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