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The Effect of Explicit Teaching of Lexical Inferencing Strategies on the Vocabulary Learning Among Iranian Field-Dependent and Independent EFL Learners

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Abstract

It is claimed that lack of vocabulary knowledge is one of the most challenging issues for foreign language learners. Moreover, both language learners and teachers are after the most viable method of vocabulary learning and teaching. Along the same lines, this study focused on the effect of explicit teaching of lexical inferencing strategies on the vocabulary learning of Iranian foreign language learners with different cognitive styles. To this end, three groups of learners, namely, field dependent, field independent, and a control group of English language learners were formed. Field dependent and field independent language learners received explicit teaching of lexical inferencing strategies while the control group just received the conventional method of vocabulary teaching. The performances of the three groups of the study on a vocabulary posttest were analyzed using one way ANOVA. The results of statistical analysis indicated that both field dependent and field independent language learners outperformed the control group in terms of vocabulary learning. However, no significant difference was found between field dependent and field independent learners in terms of vocabulary learning when they received explicit instruction of inferencing strategies. This led to the conclusion that explicit teaching of lexical inferencing strategies has a positive effect on Iranian foreign language learners with different cognitive orientations.

Key words: Cognitive styles; Field-dependence; Field-independence; Lexical inferencing; Vocabulary learning

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INTRODUCTION

A review of studies on cognitive styles shows that, as a psychological process, such styles differentiate learners in terms of how they proceed with learning, in general, and second language, in particular. As many studies conducted on the contribution of learning styles show (Cakan, 2000), leaning styles can influence learners' achievement on different fields at school. According to Luk (1998), cognitive styles affect the way an individual processes and transfers information and classifies newly absorbed knowledge as well as the manner in which he/she integrates this information with the memory structure. Jonassen and Grabowski (1993) reviewed the literature on learning styles and classified them as follows: 1-visual-haptic, 2-visualize-verbalize, 3-leveling-sharpening, 4-serialist-holist, and 5- FD-FI. This study aims to investigate field dependent–field independent style in relation with lexical inferencing.

One aspect of inferencing is Lexical inferencing, which involves making informed guesses as to the meaning of a word through all available linguistic clues plus the learner's general knowledge of the world, the awareness of context and the related linguistic knowledge (Haastrup, 1987). If the informed guess is successful, it can work for purposes of instant understanding in a listening, or reading context, and under different circumstances, it may cause retention of the word form in addition to semantic and other lexical information (Paribakht & Wesche, 1999). Besides, according to Moran (1991), writers on second language pedagogy, researchers, and writers of

reading textbooks suggest lexical inferencing as a useful strategy. Also, Moran (1991) stated that the great majority of reading textbooks at all levels published for English as a Foreign Language (EFL) since the early 1980's feature tasks in which it needs the reader to be able to guess the meaning of unknown words. Moreover, in top-down reading models, the importance of lexical inferencing is highlighted (Goodman, 1976; Smith, 1978). These models of reading emphasize the important role played by the reader, who uses his or her knowledge to be a better reader who uses short-cuts in bottom-up processing of letters and words.

The improvement of interactive models of reading has renewed interest in exploring lower-order reading skills (Morrison, 1996). These models allow a great deal of communication between the divergent bottom-up and top-down models (Hudson, 1998). Three main types of cues are available for learners when making lexical references. Carton's (1971) taxonomy of knowledge sources comprises of three main cue types which are *contextual*, *intralingual*, and *interlingual*. Haastrup's (1991) taxonomy of knowledge bases employed in her empirical research on Danish-speaking learners of EFL was taken from the cue types established by Carton's (1971).

When using contextual cues (also called extralingual or pragmatic cues), learners use their knowledge of the world and the co-text. Knowledge of the world is viewed as part of language user's and language learners' general socio- cultural knowledge (Haastrup, 1991). On the other hand, the role of co-text refers to the way in which the understanding of a lexical item is affected by the specific linguistic context in which it is located. For contextual cues to be helpful for word inference, Li (1988) showed that first they must be familiar to the text-receiver both perceptually and conceptually and second they should contain the information existing in the text to find the related schemata so as to account for the oncoming input in the text and detect the unfamiliar stimuli in context. Without such clues, inferencing may result in guessing incorrectly (Bensoussan & Laufer, 1984). They also concluded that Lexical guessing is a very difficult task due to the text complexity or the limitations of the reader, or both. Some clues do not exist in the text in which they appear; however, when there are clues for these words, foreign language learners will not look for them automatically; and when readers search for these clues in the texts, they cannot find or comprehend them.

Intralingual cues are the ones which are based on the learner's knowledge of the target language. For example, English learners may infer the meaning of words through making use of their knowledge that express notion of agency (Carton, 1971). The ability to achieve intralingual cues assumes that the learners already have some knowledge of the foreign language in which they are expected to make lexical inferences about. Lastly, *interlingual cues* are judgments made by learners of the identity or similarity of structures in two languages. For instance, word meanings may derive on the basis of cognates and regularities of phonological alterations from one language to another by second language learners.

As mentioned previously, vocabulary learning can occur through explicit study or incidental learning. Therefore, when L2 learners get a threshold vocabulary of at least 2,000 word families, they can be provided with more low-frequency vocabulary learning through extensive reading (Schmitt, 2000). However, no matter how many words learners know, they will always encounter unfamiliar words in their reading texts. As a result, learners need to learn how to guess word meanings from context intelligently. Clarke and Nation (1980) studied learners who used the strategy of guessing the meanings of words from context and claimed that there are some advantages to this skill. Firstly, this skill allows the learners to learn vocabulary without the aid of the teacher and learners' vocabulary can be expanded through extensive reading. Secondly, owing to several encounters with one word in context, learners can increase their command of the word and its various uses. Thirdly, with the skill of lexical inferencing, learners can continue their reading without stopping to consult a dictionary, which allows them to develop independent thinking regarding which unguessable words need to be looked up in a dictionary. Fourthly, learners are encouraged to summarize the information of the guessed word they get in context before consulting a dictionary. Afterwards, they can have more impressions and a better understanding of the guessed word. Finally, by using the skill of lexical inferencing, learners can practice seeking information and making predictions of the word in context, which can in turn develop their reading skill.

It seems that the design of the text and the use of vocabulary both play a crucial role in the success of lexical inferencing. On the other hand, learner-related factors include "learners' backgrounds; previous learning experience; size of receptive vocabulary knowledge; procedural knowledge; attention to details in context, including ability and inclination to use context effectively; preconceptions about the meaning of the word; and the usefulness of previously known information in cue utilization(ibid.). From the description of these learner-related factors, it is obvious that what affects the success of lexical inferencing is strongly connected to learners' knowledge of words and texts. Lexical inferencing is a very important way of incidental vocabulary learning. However, to achieve successful guessing, in addition to contextual and learner-related factors proposed by Paribakht (2005), some more detailed factors should also be discussed.

1. REVIEW OF LITERATURE

Brown and Brailford (2006) define cognitive styles as "a psychological construct relating to how individuals

process information" (p.327). There are several learning styles one of which is field dependent (FD) and field independent (FI). Field dependence (TD) represents a type of cognitive style thereby a person has the tendency to look at the whole picture of a learning task which consists of different items. In contrast, field independence (FI) is concerned with a type of cognitive style thereby a person can identify or concentrate on certain items. As Gollnick and Chein (1994) state, people possessing such style are not distracted by surrounding items in the background. Stated differently, FI learners are able to easily to sieve the essential details from among a confusing set of distracting items but FD learners experience trouble doing that. Some studies have focused on the impact of FD/FI cognitive style on L2 learning. The results have illustrated that, based on whether the person is field independent or field independent, he/she will behave differently. The studies carried out by Brown (2000) and Chapelle and Green (1992) show that there seems to be a positive correlation between field-independence and successful performance in L2 classrooms. However, FD style cannot be necessarily considered as a weakness as people possessing such a style can outperform the FI individuals in the case of social aspect of language (Dornyei, 2005).

The study conducted by Genesee and Hamayan (1980) showed that field independence is positively correlated with the ability of French listening comprehension. Richards et al. (1997) conducted a study on FI/FD styles, with the results showing that field-independent and field dependent persons make use of different strategies in the case of listening and reading comprehension. Similarly, Ahmady (2002) examined the impact of field dependence/ field independence on listening comprehension strategies used by learners. The results revealed that those learners who have FD style and those who have FI learners apply different strategies. A study conducted by Johnson et al. (2000) showed that individuals using field dependence strategy outperformed field independent learners in the case of communicative tasks and their performance are not that good in the case of formal aspects of L2 proficiency. Salmani-Nodoushan (2006) carried out a study to find the impact of FD/FI on the communicative performance measured by language tests and he reached the same conclusion. The results indicated that field-dependent individuals outperformed the field-independent individuals. This finding is consistent with the literature that showed FD individuals can succeed better in social activities.

Blanton (2004) examined the impact of cognitive style on standardized reading comprehension skill. The results showed that cognitive style compared to ethnicity or gender more strongly influenced learners' performance on standardized reading comprehension test. The type of the tasks included in the test greatly influenced the performance of the field-dependent learners. She came to the conclusion that FD learners had better performance in the case of reading multiple-choice tests compared to other types of tests. As a matter of fact, multiple-choice test yielded more accurate measures of learners' reading comprehension skills, reducing the differences between field-dependent and independent learners on test.

Salmani-Nodoushan (2007) examined how field-dependence/independence is correlated with L2 learners' performance on reading comprehension. The findings showed that cognitive styles of the most proficient learners influenced the performance to the greatest extent. Moreover, there was a positive correlation between successful performance on more holistic/more analytic reading activities and field dependence/field independent style. Performance on holistic activities was positively correlated with field dependence style and was negatively correlated with field independence styles. On the contrary, there was a positive and negative correlation between performance on analytic tasks and field independent style and FD style, respectively.

Tinajero & Paramo (1998) investigated the contribution of the role of sex and intelligence to the relationship between FD/DI cognitive style and L2 learning. The results showed that FI learners had higher levels of achievement compared to FD learners yet this difference was not significant among boys. This result pointed to the intervening effect of gender. He concluded that field-dependent individuals who may not even be more intelligent can have the best academic performance.

The study carried out by Hsueh-Jui and Liu (2008) showed that both listening strategy deployment and learning styles could predict listening ability. Jamieson (as cited in Sadeghi, et al., 2014) examined the qualities of successful and unsuccessful L2 learners concerning their cognitive style. The study provided evidence showing the positive relationship between FI and proficiency in English as second language.

Littlemore (2001) carried out a study to examine the application of communication strategies by L2 learners. The results showed that field dependent learners made more use of more communication strategies compared to field independent learners. Yet, FI learners used strategies that lead them to focus on individual qualities of the target item. Vahabi (2006) studied the correlation between EFL learners' FD/FI cognitive style and their proficiency as well as the extent to which they use communication strategies in writing. The findings showed that Iranian English language learners' FD/FI cognitive styles are not correlated with the frequency and the kind of conceptual strategies used by them in writing. Investigating the relationship between undergraduate students' achievement and the use of FD/FI style and their attitude to computer, Altun & Cakan (2006) observed no significant relationship between students' academic achievement and their cognitive styles. Furthermore, results showed

that learners' perception of computers appears to be independent of their cognitive style.

Ghonsouly and Eghtesadee (2006) examined the contributions FD/FI cognitive style makes to the application of cognitive and metacognitive reading strategies in the case of amateur and skilled readers. The findings revealed no difference between the extent to which metacognitive and cognitive strategies are used by novice field-dependent and those used by novice FI readers. Kassaian (2011) examined the correlation between field dependent/field independent cognitive style and the sub-skills of listening comprehension. The findings indicated no difference in the scores of FD and FI learners on general listening comprehension. In addition, no difference was seen in the other performance of the two groups.

In line with the previous studies and in an attempt to fill the gap in the literature, the purpose of the present study was to highlight the role of lexical inferencing strategy in learning vocabulary among Iranian EFL learners. One of the main challenges for foreign language learners is the lack of rich vocabulary repertoire which may persist all through their encounters with a foreign language in any of the language skills namely, reading, writing, listening and writing. One of the viable strategies to solve this problem is the use of lexical inferencing strategy when facing new words. The question that occupies the mind of researchers is whether teaching lexical inferencing strategy can explicitly contribute to vocabulary repertoire of foreign language learners or not. Moreover, the role of cognitive style in this process of explicitly teaching lexical inferencing strategy is another concern of the researchers. To explore the issue, the following research questions were the main objectives of the present study:

- Does explicit teaching of lexical inferencing strategies significantly affect the vocabulary learning among Iranian field dependent learners?
- Does explicit teaching of lexical inferencing strategies significantly affect the vocabulary learning among Iranian field independent learners?
- Is there any significant difference between the effect of explicit teaching of lexical inferencing strategies on the vocabulary learning of Iranian field-dependent and field-independent learners?

2. METHOD

2.1 Design of the Study

To carry out the study, a quasi-experimental design using intact groups was used. Although the design is not as perfect as true experimental design, the results of the study can be quite acceptable. Maximum care was taken to select participants that are homogenized in terms of language proficiency and are truly representative of field-dependent and field-independent language learners.

2.2 Participants

The participants of the study were 122 English language learners studying at one of the foreign language institutes in Yazd, a city in Iran. They were roughly at intermediate level of language proficiency as indicated by the language institutes. Moreover, they were male and in terms of age group they were considered adult and young adult.

2.3 Research Instruments

2.3.1 Preliminary Test of English (PET)

PET is an English presidency test developed by Cambridge University. This test measures overall language proficiency of test takers up to B1 level of Common European Framework of Reference for Languages (CEFR). Overall, the test takes about 2 hours and 20 minutes and measures all four language skills namely, reading, writing, listening, and speaking. Since the participants of the study had just started studying English at intermediate level, this test could well serve the purpose of the study.

2.3.2 Vocabulary Test

To measure students' knowledge of vocabulary, a vocabulary knowledge test was developed. To develop this test, a group of 5 experienced teachers who were teaching English for more than 10 years were asked to identify the most difficult words in the first 8 units of book #3 from ACTIVE series by Neil J. Anderson. Totally, 40 words were agreed upon and a multiple-choice vocabulary test was developed using the selected words. The test was given to the participants of the study prior to commencing the experimentation. Based on students' responses, those words which were familiar by the participants of the study were removed from the test and the number of items of the test was reduced to 30. This test served as the post-test to compare vocabulary gain of students after the treatment.

2.3.3 Group Embedded Figures Test (GEFT)

The Group Embedded Figures Test (GEFT) has been devised to explore the cognitive functions of learners and has been used to investigate the analytical ability, social behavior, body concept, preferred defense mechanism and problem solving style as well as other areas (Witkin & Goodenough, 1981). Usually, it takes about 20 minutes to complete the GEFT using paper and pencil. Test takers are exposed to 18 items showing complex geometric figures and they should look at the simple pictures at the back of the booklet and locate them within the complex figure (Witkin & Goodenough, 1977). Thus, a test taker gets a score ranging from 0 to 18 depending on the number of correct answers. A score higher than nine indicates that the test taker is field-independent and a score lower than 9 shows that the person is field-dependent.

2.4 Materials

Two sets of materials were used in the present study. One was the reading materials and the other one was the list of lexical inferencing strategies taught to students. The reading materials used in the study included reading passages taken from the first 8 unites of book #3 from ACTIVE series by Neil J. Anderson. These passages served as reading materials upon which students learned and practiced lexical inferencing strategies. They also used as the source for choosing target words to be learned by students.

The list of lexical inferencing strategies identified by Nassaji (2006) was also used as the target lexical inferencing strategies to be taught to students. This list contained three broad categories of identifying, evaluating, and monitoring. The identifying category included repeating, word analysis and word form analogy strategies. Evaluating category contained two strategies of verifying and self-enquiry and monitoring category contained the monitoring strategy. Table 1 shows the list of strategies identified by Nassaji (2006).

Table 1
List of Strategies Identified by Nassaji (2006)

1) Identifying
(a) Repeating: The learner repeats any portion of the text, including the word, the phrase, or the sentence in which the word has occurred. Example: "'our beliefs *waver* . . . waver . . . waver . . .' May be . . . waver is something 'beliefs waver . . .'"
(b) Word Analysis: The learner attempts to figure out the meaning of the word by analyzing it into various components, such as roots, affixes and suffixes. Example: "'and smell of *sewage* in their noses . . .' sew . . . age . . . should be a kind of smell. But sew is something . . . maybe it is a kind of plant, wood."
(c) Word–Form Analogy: The learner attempts to figure out the meaning of the word based on its sound or form similarity with other words. Example: "'*squalor* . . .' may be it is like square . . . square . . . It should be something like that."
2) Evaluating
(a) Verifying: The learner examines the appropriateness of the inferred meaning by checking it against the wider context. Example: "'but when we ourselves become ill, our beliefs *waver* . . .' our beliefs change . . . change . . . when we become ill our beliefs change . . . yeah."
(b) Self-Inquiry: The learner asks himself or herself questions about the word or the meaning he or she has already inferred. Example: "'*hazards* . . .' Should it be pollution according to the sentence? Pollutions? No, no . . . it should not be that . . . it may be something different."
3) Monitoring
(a) Monitoring: The learner shows a conscious awareness of the problem by judging its ease or difficulty. Example: "'*contract* some of the serious and infectious diseases . . .' contract . . . I think contract is make from boss and the staff . . . contract . . . yes . . . this is easy . . . this easy . . . maybe it's difficult, I am not sure."

Note. This classification of the strategies have been taken directly from Nassaji (2006, p,392).

2.5 Procedure

In order to select the foreign language learners with the same level of foreign language proficiency, students who were studying English at the intermediate level were chosen as would-be participants of the study. However to make sure they were truly at the same level of proficiency, they were asked to sit for a language proficiency exam. To choose the appropriate language test, a group of 20 language learners out of 140 were asked to take Preliminary English Test (PET) which has been developed by Cambridge University. They had score range of 50 to 85 out of 100 which meant that the test had the capacity to be used as a tool to homogenize language learners in terms of language proficiency. Moreover, the reliability of the test was also measured through internal consistency measure of Cronbach's Alpha. The reliability index was found to be 0.86 which is an acceptable index of reliability.

After establishing the viability of PET as an appropriate language test for the purpose of the study, all language learners took the test and, based on the scored results, those whose scores were considered as extreme scores were removed from the study. Finally, 123 language learners were selected and were further asked to take the Group Embedded Figures Test (GEFT) to identify their cognitive orientation. After, taking GEFT, learners were divided into two groups of field-dependent learners which comprised 53 students and a group of field-independent learners who were 69 students. Next one fourth of each group was randomly chosen to be put into a third group serving as control group. Therefore, totally, there were three groups in the study including field-dependent group (N=40), field-independent group (N=52) and control group (30). Once more to reassure that the three groups are homogenized in terms of language proficiency, the statistical technique of one way ANOVA was run on their PET scores to detect any statistical difference between them. After establishing the homogeneity of the participants in terms of language proficiency, Stern's (1992) depiction of explicit instruction was followed to teach lexical inferencing strategies explicitly to field-dependent and field-independent groups. The participants in the control group did not receive any lexical inferencing strategy instruction and just received the traditional method of teaching unknown words such as explanations or providing synonyms about meaning of unknown words. The lexical inferencing strategies to be taught to the participants of the study were taken for the list of lexical strategies identified and classified by Nassaji (2006).

According to Stern (1992), explicit teaching involves explanation, observation, relational thinking, trial-and-error, and monitoring. Based on Sterns' (1992) definition

of explicit teaching, efforts were made to explain the lexical inferencing strategies to learners and how and when to use them. Students' behaviors were also observed and monitored by the researchers and at times students were asked to act out the lexical inferencing procedure when encountering an unknown words. Any misunderstandings and misuse of strategies were noted and the proper way of using them was demonstrated to students. Students were also encouraged to think of similar situations they could use the strategies and their ideas were discussed in class and examples were drawn. While reading the texts, students were supposed to try various strategies and identify the ones they could use more effectively. Finally, the teacher modeled his own way of using the strategies based on his previous experience. The treatment period lasted for 12 sessions and each session was about 90 minutes. During the treatment, reading passages in book #3 from ACTIVE series by Neil J Anderson were used as the reading materials. At the end of instruction period, all the three groups of the study took the vocabulary test and their achievement in learning the target words was measured. It needs to be noted that students were not informed about the vocabulary test and, in this way, the effect of practice and review for exam was eliminated.

2.6 Data Analysis

After the needed data on language proficiency and vocabulary knowledge was obtained, they were statistically analyzed through SPSS. The data were described using descriptive functions of the software and the statistical technique of one way ANOVA was used to identify the possible differences between the groups in language proficiency prior to commencing the experimentation and in vocabulary knowledge after the experimentation.

3. RESULTS AND FINDINGS

As the first step, it was necessary to decide between parametric and non-parametric statistics for statistical analysis. Since the data were of continuous type, the next step was to establish the normal distribution of data which was investigated through Kolmogorov Smirnov test of normality. Table 2 displays the results of Kolmogorov Smirnov test of normality.

Table 2
Results of Kolmogorov Smirnov Test of Normality

	Groups	*N*	Kolmogorov-Smirnov		
PET	Field dependent	40	.075	40	.200*
	Field independent	52	.058	52	.200*
	Control	30	.151	31	.069
Vocabulary	Field dependent	40	.067	40	.200*
	Field independent	52	.048	52	.200*
	Control	30	.118	31	.200*

Kolmogorov Smirnov test of normality indicated that all sets of scores namely PET and vocabulary scores were normality distributed across all groups in the study. As Table 2 shows, the significant level of all Kolmogorov Smirnov values was greater than confidence level of 0.05 and thus the data sets are considered to be normal. Before starting the experimentation, it was also important to make sure that no significant differences exist between the three groups of the study namely, field-dependent group, field-independent group and control group in terms of language proficiency. To this end, ANOVA was run for PET scores. The results are displayed in Table 3.

Based on the results of ANOVA, it was determined that no significant differences existed between them and the three groups of the study are homogenous in language proficiency. The F value was found 1.86 with significant level of 0.15 which was greater than the confidence interval of 0.05. Therefore, no significant differences were found between groups on PET scores indicating the homogeneity of the groups in terms of language proficiency.

Table 3
Results of ANOVA on PET Scores

	Sum of squares	*df*	Mean square	*F*	Sig.
Between groups	90.435	2	45.217	1.868	.159
Within groups	2905.484	120	24.212		
Total	2995.919	122			

After checking the preliminary assumptions of the research design, which was homogeneity of the participants of the study in terms of language proficiency and normal distribution of all sets of scores, the performance of the groups on post-test (vocabulary test) was examined. Therefore, the statistical test of ANOVA was used once more for vocabulary posttest scores to investigate the effect of explicit teaching of lexical inferencing strategies on vocabulary gain of field-dependent and field- independent groups. Table 4 displays descriptive statistics and Table 5 shows the results of ANOVA on vocabulary posttest scores.

Table 4
Descriptive Statistics of the Participants of the Study in Terms of Vocabulary Posttest Scores

	N	Mean	Std. deviation	Minimum	Maximum
Field dependent	40	17.1000	4.80278	7.00	27.00
Field independent	52	17.4615	5.33380	6.00	29.00
Control	31	10.2903	3.05716	5.00	17.00
Total	123	15.5366	5.56230	5.00	29.00

Vocabulary test results indicated that field-dependent students had a mean score of 17.10 (*SD*=7.80) whereas field-independent students had a mean score of 17.46 (*SD*=5.33) and students in control group had a mean score of 10.29 (*SD*=3.05). Through a cursory look, it is found that the control group had a lower mean score than field-dependent and field-independent students while field-dependent and field-independent students had similar mean scores on vocabulary posttest. However, to detect the statistical significant difference between the three groups, consulting ANOVA results were needed.

Table 5
Results of ANOVA on Vocabulary Posttest Scores

	Sum of squares	*df*	Mean square	*F*	Sig.
Between groups	1143.675	2	571.838	26.082	.000
Within groups	2630.910	120	21.924		
Total	3774.585	122			

The test of ANOVA indicated that significant differences existed between field-dependent, field-independent, and control groups. F value was found to be 26.08 with significant level of 0.00 which was less than confidence level of 0.05. This finding showed that vocabulary learning was not the same across the groups. Consequently, post hoc test of Tukey was employed to find the exact location of difference between the groups. Table 6 shows the results of post hoc test of Tukey.

Table 6
Multiple Comparisons Between Field Dependent, Field Independent and Control Groups Using Post Hoc Test of Tukey

(I) Groups	(J) Groups	Mean difference (I-J)	Std. error	Sig.
Field dependent	Field independent	-.36154	.98475	.928
	Control	6.80968*	1.12042	.000
Field independent	Field dependent	.36154	.98475	.928
	Control	7.17122*	1.06248	.000
Control	Field dependent	-6.80968*	1.12042	.000
	Field independent	-7.17122*	1.06248	.000

*. The mean difference is significant at the 0.05 level.

According to the results of Tukey, the difference between the groups lied between the field- dependent and control groups and between field-independent and control groups. No significant differences were found between field-dependent and field-independent groups in terms of vocabulary scores on posttest. As shown in Table 6, the

significant level was 0.92 for the comparison between field-dependent and field-independent groups which was higher than the confidence level of 0.05. However, the significant level for the comparison between control group and field-dependent group was 0.00 and between the control group and field-independent group was also 0.00. Due to the fact that significant levels below confidence level of 0.05 is considered an indication of statistical significant difference in ANOVA test and the Tukey post hoc test, the difference between field-dependent and field-independent groups were found non-significant while between the field- dependent and control groups and between field-independent and control groups were found significant. It led to the conclusion that both field-dependent and field-independent groups had outperformed the control group on vocabulary posttest and consequently, explicit teaching of lexical inferencing strategies had significant effect on vocabulary learning in both field-dependent and field- independent groups.

CONCLUSION AND DISCUSSION

The purpose of the study was to find the effect of explicit teaching of lexical inferencing strategies on vocabulary learning among field-dependent and field-independent language learners. The study followed a quasi-experimental design and three groups of field-dependent, field-independent, and control groups were formed. Field-dependent and field-independent language learners received explicit teaching of lexical inferencing strategies for unknown words while the control group just received conventional teaching of unknown words. Results of data analysis indicated that explicit teaching of lexical inferencing strategies had significant effect on vocabulary learning in both field- dependent and field-independent language learners. In other words, the participants in both field-dependent and field-independent language learners outperformed those of the control group on vocabulary posttest.

To explain the positive effect of lexical inferencing on vocabulary learning of foreign language learners theoretically, the model of deep levels of processing (Craik & Lockhart, 1972) is the best reference. The model predicts that when language learners are not successful in guessing or inferring the meaning of unknown words, they are more cognitively involved and make more active cognitive efforts to come up with meaning of words. Craik and Lockhart (1972) maintained that the possibility that information is stored in long-term memory rather than in short-term memory is not dependent on the length of time spent on learning but is more dependent on the shallowness or depth of information processing. Accordingly, it can stated that language learner who experience lexical inferencing are more involved with using various sources to guess the meaning of the unknown words and consequently are more deeply involved in learning process.

The results are an indication of the positive effect of lexical inferencing instruction regardless of cognitive orientation of language learners, which is quite in line with previous empirical studies on the relationship between language learning strategies and language proficiency (Yang, 2009; Green & Oxford, 1995; Dreyer & Oxford, 1996; Park, 1997; Griffiths, 2003; Kyungsim & Leavell, 2006). Moreover, the findings of the study support of many scholars' calls on strategy-based instruction (Chamot & O'Malley, 1986; Cohen, Weaver, & Li, 1998)

Explicit teaching of lexical inferencing strategies provides another explanation for the vocabulary gain of treatment groups regardless of their cognitive orientations (field dependency or field independency). For instance, Oxford (1990) emphasized on the direct and explicit teaching of language learning strategies. Many other researchers have also noted the importance of explicit teaching of language learning strategies (e.g. O'Malley & Chamot, 1990; Oxford & Leaver, 1996; Shen, 2003). According to Wenden (1987), in case of implicit teaching of language learning strategies, students may not be aware of the strategies they need to learn and may not be conscious of the effective employment of such strategies.

The conclusion of the study is that the explicit teaching of lexical inferencing strategy is an effective method for teaching L2 vocabulary. Both previous empirical studies and the theory of levels of processing provide the ground to conclude that teaching lexical inferencing in an explicit way can contribute to vocabulary gain of foreign language learners.

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