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Lexical Inferencing Strategy Instruction and the Development of Reading Comprehension: The Case of Iranian EFL Learners

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Abstract

Lexical inferencing has been recognized as an effective learning strategy in SLA. The present study investigated Iranian EFL learners' development of reading comprehension as a result of exposure to lexical inferencing strategy instruction. To do so, 45 female participants studying in Simin Language Institute in Rasht, Iran were selected from among 60 students based on the results of a sample of Oxford quick Placement (OQP) test, who scored from 40 to 47. They were in two intact classes, assigned to one experimental (n=24) and one control group (n=21). The experimental group underwent the teaching of reading comprehension through lexical inferencing strategy to help learners infer the meaning of unknown words and promote their understanding of the text. However, the control group received the traditional instruction of reading comprehension concentrating on the translation of new words. The results of the pre- and post-tests of reading comprehension revealed the significant outperformance of the treatment group over the control group's reading comprehension ability. It was concluded that lexical inferencing strategy teaching could develop the learners' potential to improve their cognitive capacities in inferring the meaning of unknown words, which might be facilitative in their reading comprehension.

Keywords: lexical inferencing strategy, reading comprehension

Introduction

English Language Teaching (ELT) scholars have always been trying to promote quality teaching and learning of language skills one the most important of which is reading comprehension. Reading comprehension means constructing the text meaning which is a strategic and active process during which the readers' knowledge and skill interact with the text characteristics such as the structure, the wording, and genre of the text (Schellings, Aarnoutse, & Leeuwe, 2006). Sweet and Snow (2003) maintain that comprehension, as the nature of reading comprehension, includes the simultaneous processes of extraction and construction of the text meaning. According to Rashidi and Khosravi's (2010) research in the foreign language context, reading comprehension is an essential ability to be learned which is considered not only as a source of pleasure but also as a means of extending and consolidating knowledge and information about the language.

Reading comprehension is considered as both the process and the product of interaction between the reader and the writer. To become successful in reading comprehension, in May's (2001) view, the reader requires various flexible processes called comprehension strategies. Vocabulary development is one of the essential elements affecting reading comprehension (Nation & Coady, 1988). Generally, researchers and teachers agree that reading comprehension and vocabulary knowledge are closely related (Stoller & Grabe, 1993).

Readers who have good vocabulary knowledge are able to have a better comprehension of texts (Mehrpour, Razmjoo, & Kian, 2011; Qian, 1998). Limited lexical knowledge might not result in successful reading comprehension and, at the same time, a lack of reading comprehension constrains vocabulary development (Coady, 1997; Laufer, 1989). To become an advanced and successful reader, the learner will require to employ various strategies including inferring or guessing the meaning of unfamiliar words in a text to account for unknown words encountered in reading comprehension (Guthrie, McGough, Bennett, & Rice, 1996; Jafari & Ketabi, 2012).

One of the most effective strategies to help learners develop their reading comprehension is lexical inferencing (Nassaji, 2006; Paribakht & Wesche, 1999). As more and more researchers and instructors have come to realize

the role of lexical inferencing in the reading comprehension classroom and acknowledge its positive effect on reading comprehension and solving the difficulties in guessing the meanings of vocabularies from context (Haastrup, 2010; Maghsoudi, 2012; Nassaji, 2003; Riazi & Babaei, 2008), it has been strongly recommended in L2 and foreign language contexts, demanding more research studies to be carried out.

Inferencing takes place at different levels of the reading comprehension process, from integrating the text with prior knowledge, to linking various parts of the passage together, to connecting unknown to known text elements in order to achieve a coherent structure of the text information (Haastrup, 1991; Paribakht & Wesche, 1999). Reading comprehension, as maintained by Spearitt (1972), includes several sub-skills including decoding the text, comprehending the surface meaning, as well as making inferences or deductions from the available information in the text. Due to the high significance of lexical in the inferencing process of language learning (Bensoussan & Laufer, 1984), numerous investigations have studied factors which can affect inference behavior. The factors are divided into contextual and learner-related factors. Contextual factors involve the significance of the unknown words to text comprehension (Brown, 1993), the feature of the word as well as the text containing the word (Fraser, 1999), the length of the passage (Haynes & Baker, 1993), the semantic richness of the text (Bae, 2011), and the accessibility of contextual cues (Dubin & Olshtain, 1993).

Reader-based or learner-related factors involve the reader's prior language learning experience (Paribakht & Wesche, 1996), their level of attention to the details in the passage (Hinkel, 2002; Nassaji, 2003), their preconceptions about the potential meaning of the vocabularies (Frantzen, 2003), the amount of their receptive knowledge of words (Laufer, 1997), vocabulary knowledge depth (Nassaji, 2004; Qian, 2005), sight vocabulary and prior knowledge of the text or familiarity with the topic (Pulido, 2007), the reader's capability to take advantage of extra-textual cues (Haastrup, 1991), and the impact of the reader's native language on the process (Paribakht, 2005). Furthermore, readers' second language proficiency has been indicated to play important role in lexical inferencing Bengeleil &

Paribakht, 2004). However, there appears to be almost necessary to conduct more recent studies on lexical inferencing strategy in developing the learners' reading comprehension on an EFL context since the learners encounter with a lot of challenges in appropriately using the strategies rather than immaturely translating the words to understand the text (Mehrpour, 2004).

Regarding the theoretical issues involved in lexical inferencing, Rumelhart (1977), in reaction to the criticism against the top-down and bottom-top models, suggested an interactive reading comprehension model that combined both the top-down and bottom-top models of reading comprehension. The model attempts to integrate simultaneously the process of getting knowledge from various sources while reading comprehension takes place. It also enables the interaction between the two processing directions, that is lower level and higher level processing. Rumelhart, in 1985, extended his model of reading comprehension to the schema theory. This theory considers the role of top-down processing without neglecting lower level processing in reading comprehension. The key point behind schema theory is that learners can make meaning of visual information and comprehend written text by associating them to their prior experience and background knowledge. Schema theory, as stated by Alderson (2000), aims to clarify how readers integrate the new knowledge with what they already have. This theory has had an important effect on reading skill, which is regarded as an interactive process that needs the concurrent functioning of different mental operations. The activation of schema or previous knowledge is one of the target activities that can have great impact on reading comprehension (Anderson, 1994; Murray, 1980). These studies explain that identifying the role of schema during the reading process can reveal why readers might succeed or fail in understanding the written material. Therefore, Iranian EFL learners can benefit from lexical inferencing to boost their schema and background knowledge, which can in turn improve their reading comprehension.

Lexical inferencing, in schema theory (Rumelhart, 1981), is seen as a process of using the relevant schema in identifying the meaning of an unfamiliar word. In schema-based inference through reading comprehension, the activation and use of the relevant schema allow for the

organization of the information, anchoring and relating new lexical items to existing concepts (Rumelhart, 1981). This reliability in a person's cognitive structure, according to Ausubel (1968), is the core of the sub-assumption process that leads to meaningful learning and subsequently an efficient learning outcome. Hyland (2003) maintains that many comprehension problems of the readers can be ascribed to attention failure and word recognition during perceptual processing of texts.

Lexical inferencing is an effective strategy which can be employed to handle unfamiliar words in reading materials and according to the studies, it is actually one of the most common strategies among EFL students (Riazi & Babaei, 2008). Inferring and guessing are two common strategies for students for second language comprehension. Indeed, lexical inferencing has been the most frequently used by second language learners (Nassaji, 2003). It is evident that when facing an unfamiliar word in a reading text, guessing or inferencing is regarded as the most helpful and frequent strategy. Indeed, inference from context can be viewed definitely the most significant vocabulary learning strategy (Nation, 1990). Other studies (e.g. Oxford & Scarcella, 1994) also confirm this by acknowledging that guessing from context can be regarded as the most beneficial strategy.

It appears that all above-mentioned researchers use common terms including 'guessing from context', 'guessing intelligently', 'inference', and 'inference from context' to talk about lexical inferencing. Lexical inferencing has been recognized as an effective learning strategy. The concept of 'learning strategy' refers to the learners' language learning behaviors which are actually used for learning and regulating the acquisition of the target language skills (Wenden, 1987).

Intelligent guesses in reading comprehension, as stated by Oxford (1990), includes the use of many different nonlinguistic or linguistic clues in order to guess the meaning of words when the learners do not know all of them. However, there appears to be several variables which can influence the inference of the meaning of unfamiliar vocabularies from the context. Lexical guessing is a challenging task either due to the text complexity or the reader's limitations (not having any background knowledge), or both (Bensoussan & Laufer, 1984).

Lexical inferencing is considered as a subdivision of text inference (Haastrup, 2010). Haastrup differentiates between two processing types: analytic and holistic. Top-level cues are based on global knowledge of text, contextual clues, and world knowledge, whereas bottom-level cues are linked to sentence-word or local knowledge. Nassaji (2006) found that lexical inferencing is frequently utilized by second language learners while handling unfamiliar vocabulary, and it has a close association with incidental vocabulary acquisition. Indeed, it has been found that much lexical growth in both first and second languages seems to occur as readers try to understand new vocabularies they read or hear in context (Paribakht & Wesche, 1999).

Lexical inferencing strategy has been the focus of L2 scholars. In some studies, (e.g. Carnine, Kameenui, & Coyle, 1984; Haynes, 1993), it was revealed that the concreteness, the clearness, and the degree of closeness of relevant clues determine the success of lexical inferencing. When enough and clear clues are not supplied for unfamiliar words by a text, it becomes very difficult for learners, especially for less proficient ones, to understand the unfamiliar word meaning.

Similarly, the investigation of EFL readers indicated that they used various lexical inferencing strategies, but many of them were employed inefficiently (Haastrup, 1990). For example, some learners merely adopted low-level processes and worked only at the morphological recognition, while some learners exclusively relied on top-level clues and disregarded the potential lexical or semantic sources. It was stated that EFL learners' knowledge of how to understand new vocabularies is fundamentally established on their conceptual and linguistic knowledge. According to Haastrup (1990), the examination of the differences between readers with low and high proficiency further ascertained that learners' second language proficiency was an influential factor in the procedure of lexical inferencing. Haastrup (1990) acknowledged that the success in lexical inferencing is based on the learners' general world knowledge, accessible contextual clues, their second language proficiency, as well as the parallel processing of meaning, that is, the interactive model of top- and bottom-levels.

An exploratory study was conducted (Huckin & Bloch, 1993) employing think-aloud protocols in order to examine the guessing strategies by

intermediate EFL learners when they met unknown words in the reading comprehension course. It was found that contextual clues, particularly local clues were the major inferring strategies used by the learners to solve unfamiliar words successfully. Another finding was that the learners made wrong guesses because they had the wrong assumption that they knew the vocabulary. It was observed that the same strategies were used by the participants to handle each vocabulary they met: first, the meaning of the vocabulary which assumed to be known was brought into the reading task without examining the contextual clues. This issue sometimes resulted in misunderstanding of the vocabularies that possessed other meanings. Then, the word meaning was often guessed through morphological analysis, combined with contextual clues in the passage if part of the word was known. Finally, contextual clues were used to guess the completely unfamiliar words.

Another introspective research was carried out to investigate how learners handled unfamiliar words they encountered during their reading task (DeBot, Paribakht, & Wesche, 1997). Ten intermediate ESL students in Canada participated in their study. It was revealed that the learners disregarded about half the assumed unfamiliar vocabularies, concentrating mostly on content words (adjectives, verbs, and nouns) and it was found that the participants used punctuation, word morphology, and grammatical knowledge at sentence level. It was revealed that discourse level clues were used by very few participants.

Another introspective study was conducted by Paribakht and Wesche in 1999 to determine the types of information, knowledge, and strategies used by the readers to deal with unknown second language words they encountered while reading and examined the processes leading to development of the knowledge of vocabulary through reading. Ten intermediate university students with different first language (Arabic, Farsi, Vietnamese, Spanish, French, and Chinese) participated in their inquiry. The findings indicated that the learners used various strategies to infer the meaning of words from different clues, such as collocation, synonym, world knowledge, and prior knowledge. It was observed that in lexical inferencing, the students mostly used grammatical knowledge at sentence-level, and

sometimes combined it with world knowledge, punctuation, and word morphology. Significant individual differences regarding the knowledge sources observed in this investigation might be because of the learners' first language, their prior second language learning experience, as well as their familiarity with the topic of the text.

In the foreign language setting, as Rashidi and Khosravi (2010) pointed out, reading comprehension has to be attentively taken into account as it provide both educational and non-educational pleasure for the learners. It is also believed that reading comprehension demands to be revisited in EFL contexts, such as Iran, due to insufficient consideration of teaching reading comprehension regardless of aimlessly getting the learners' attention toward translation purposes rather than comprehension fulfillment (Mehrpour, 2004). Such a statement delineates the importance of teaching reading comprehension in EFL context by applying lexical inferencing strategy to facilitate the comprehension process. For example, Riazi and Babaei (2008) reported an experiment through which Iranian EFL learners' ability to make lexical inferencing while reading was investigated. Their findings indicated that elementary learners used all clues such as interlingual, intralingual, and contextual to infer the meaning of unfamiliar vocabularies, whereas intermediate learners merely utilized contextual sources. Moreover, advanced students used intralingual and contextual clues and they could also make accurate lexical inferences more successfully. Additionally, the researchers concluded that the ability of lexical inferencing could not indicate any noteworthy relationship with the learners' reading comprehension skill.

In a different yet relevant study, the schema activation through the application of some pre-reading tasks was advocated by Maghsoudi (2012) through lexical inferencing strategy instruction. The researcher focused on the use of pre-reading task particularly for culturally loaded passages to assist the integration of what the students already know and the new information. The sample included 76 Iranian EFL learners who were assigned into treatment and control groups. The former group was instructed through pre-teaching of vocabulary, pictorial text, and previewing, while the control group did not receive any specific intervention. The findings demonstrated that the treatment group learners performed more acceptable

than the comparison group. Their inquiry also revealed that the learners' comprehension skill could be promoted when the schema was activated.

In a more resent study, Hu and Nassaji (2014) found that only the quantity of the strategies language learners use is not enough to judge about their success in language learning. Other characteristics such as using strategies in the right palce might be important. Anvari and Farvardin (2016) also explored the lexical inferencing strategies employed by EFL leaners, comparing successful and less successful inferences among language learners and found that the quantity of the inferences in these two groups did not differ significantly, and that how the participants inferred the target words and when they used this strategy were important. Finally, Alahmadi and Foltz (2020) studied the effects of language skills and strategy use on vocabulary learning through lexical translation and inferencing, and found that vocabulary learning was more successful inferencing given that the students were familiar with how to employ this strategy.

In sum, literature has recognized the undeniable role of lexical inferencing strategy to develop the learners' reading comprehension ability.

Generally speaking, vocabulary receives little attention in the educational curriculum (Fan, 2003). In many classrooms, the focus is generally on the four language skills and vocabulary teaching is largely incidental (Catalan, 2003) whereas students need to receive explicit instruction to become more aware of various strategies which can be used during the learning process. One of the strategies which can be used by students when they attempt to recognize the meanings of unfamiliar words is lexical inferencing strategy. However, in the foreign language context, there seems to be the shortage of studies regarding the effectiveness of lexical inferencing strategy on the EFL students' reading comprehension. Hence, the present study replicates similar previous studies by answering the following research question:

RQ: Does lexical inferencing strategy instruction have statistically significant effect on Iranian upper-intermediate EFL learners' reading comprehension ability?

Method

Participants

Forty-five EFL learners, from among 60 students, studying in Simin Language Institute in Rasht, Iran participated in the investigation. They were female language learners with the age range of 18 to 40 years old. Their proficiency level was upper-intermediate (scoring within the range of 40- 47), estimated through the administration of Oxford Quick Placement Test (OQPT). It is noteworthy that convenience sampling was used for the participants' selection at the time of the research. In other words, the participants were the only available ones in two intact classes. The students were assigned to one experimental (n=24) and one control (n=21) groups. Although all of the students in these two groups attended the classes, the outliers were excluded from further analyses.

Instruments

The instruments below were used for collecting the data:

Oxford Quick Placement Test (OQPT): OQPT consists of 60 items. The content of the items have been confirmed in 20 countries by more than 6,000 students and the estimated reliability for its items has reached 0.90 (Geranpayeh, 2003). It took approximately 30 minutes to answer the questions, which were in multiple- choice format. The test consisted of four parts including reading, grammar, vocabulary, and writing sections, and those who scored within the range of 40 to 47 were considered upper-intermediate.

Reading Comprehension Pre-and Post-Tests: To evaluate the participants' reading comprehension ability at the beginning of the experiment and to set up a baseline measurement for interpreting the post-test scores, the computerized pre-test, and the post-test of reading comprehension were administered. The test was selected from First Certificate of English (FCE) practice test, University of Cambridge ESOL Examinations. The difficulty level of the reading comprehension test was B2, which was suitable for the upper- intermediate EFL learners. The FCE was initially introduced to the language testing field in 1939 as the lower certificate of proficiency. However, in 1996, various changes were made into the content and ways of administering the test and the modified version of the FCE was presented.

FCE test includes tests of speaking, listening, English use, writing, and reading, and different forms of tests including note taking, error correction, multiple choice cloze, and multiple matching are used to assess EFL learners' language learning. Since the focus of the current investigation was on reading comprehension, tests of reading comprehension with various formats of testing were used.

The pre- and post-tests consisted of seven parts, altogether with 52 test items, which took 75 minutes to answer. Part 1 included multiple-choice cloze (8 gaps), part 2 had open cloze (text with 8 gaps), part 3 composed of word formation (8 gaps), and part 4 was related to key word transformations (6 questions). In addition, part 5 composed of text with (six multiple-choice questions), part 6 included text with (6 sentences missing), and part 7 was multiple matching (with 10 questions). To examine if there were any changes in the participants' reading comprehension skill at the end of the experiment, another sample of reading test from FCE Practice Tests was used as the post-test. The content of the post-test was different from the pre-test but it included the same seven sections as the pre-test. The scoring procedure for the pre- and post-tests was the same. For both tests, different scoring procedures were used for the seven parts. For parts 1-3, each correct answer received 1 mark; for part 4, each correct answer received up to 2 marks, for parts 5-6, each correct answer received 2 marks; and for part 7, each correct answer received 1 mark. Therefore, the total number of scores for the pre- and post-tests of reading comprehension was 70 points.

The internal consistency within items were checked for the FCE reading comprehension tests used in this study and the established Cronbach Alpha for the reliability estimates of the test was .81. Furthermore, before conducting the main study, the researcher asked two experts in TEFL regarding the relevance of the contents of the seven sections of the FCE reading comprehension tests to the students' level of English proficiency (although the difficulty level of the tests was B2 and appropriate for upper-intermediate EFL learners). Both experts agreed that the tests were appropriate for the EFL students in the context of the current investigation.

Procedure

The present study was conducted in sixteen sessions. The research ethical procedures were followed and the participants were required to sign a consent form to participate in the study after all necessary information about the study was given to them. They were told that their performance would be kept confidential and would be employed only for the purpose of the study. Besides, they were allowed to withdraw from the study for any reason. A week before conducting the main study, OQPT was given to all participants in order to make certain of their homogeneity in terms of general foreign language proficiency. Then, the selected learners were assigned to one experimental group and one control group. The former group worked on lexical inferencing strategy, while the control group underwent traditional methods of reading comprehension. The pre-test of the reading comprehension test was administered to the students. The purpose for giving the pre-tests was to gather information on the participants' reading comprehension before the treatment and to compare it with the post-test administered at the end of the treatment.

Lexical inferencing strategy instruction was provided for the students in the experimental group, aiming to help the participants reach an understanding of the texts based on evidence or clues presented in reading comprehension passages. The book that was selected for the purpose of this study was Top Notch Series (Ascher & Saslow, 2011). The participants received instruction on how to employ lexical inferencing strategy when they read English texts to infer the meaning of unfamiliar words and reach the proper meaning. They also practiced cognitive techniques to grasp the meanings of unfamiliar words. The researcher tried to reduce the ambiguity of the contexts in difficult reading passages through using activities such as repeating, verifying, self-inquiry, analyzing, monitoring, and analogy adapted from Nassaji (2003). The learners were encouraged to take advantage of a variety of linguistic knowledge including syntactic, morphological, and phonological knowledge as well as nonlinguistic source such as world knowledge and strategic knowledge (Schmitt & McCarthy, 1997) to make informed guess of the lexical items and derive the meanings of unknown words.

Besides, the participants were encouraged to utilize their semantic knowledge like knowledge of usage and collocations when reading texts with new words. The researcher emphasized the importance of recognizing the internal structure of the words and paying attention to sentence-level and contextual clues while reading in a foreign language. The learners received instruction about using textual and background knowledge rather than simply relying on surface meaning for comprehending the reading texts. They practiced analyzing the key words and their accompanying sentence to have a successful guess and reach the text comprehension. They learnt how to monitor their guessing of the words through collecting the required information for making their guess and combining various strategies. They also received training on how to make notes of the unknown words and ask the teacher for assistance if they did not know the meaning of the vocabularies.

In order to make the instruction more systematic, Nassaji's (2006) model was utilized for the instruction of lexical inferencing including three phases namely, identifying, evaluating, and monitoring. In the first step of lexical inferencing instruction, repetition was utilized through which the students were needed to repeat parts of the reading passages. For instance, the instructor identified significant words and asked the students to repeat the words or phrases from the reading texts. Then, the students were asked to do word analysis and try to understand the meaning of unfamiliar words by analyzing them into different constituents, such as suffixes, affixes, and roots. Afterwards, they were instructed on how to do the word–form analogy. Indeed, the learners were encouraged to comprehend the meaning of unfamiliar words based on their form or sound similarity with other words. Actually, the students practiced guessing the meaning of unfamiliar words by activating their previous knowledge or looking for existing schemas and attempted to ask for clarification by questioning if they could not notice the meanings. In the evaluating phase, the instructor helped the students to do verification through examining the appropriateness of the inferred meaning by checking it against the broader context. The students were instructed how to do self-enquiry.

Indeed, the instructor gave models of thinking aloud for the students by asking relevant questions aloud and answering them and encouraged the participants to activate their comprehension by asking themselves questions about the unfamiliar words or the meaning they have already inferred. The students attempted to identify external and internal clues to infer the meaning of words and relate significant points in the text to one another to comprehend it. At this stage, the participants practiced making inquiry, confirming, or disconfirming their guessing about the meaning of the words. They also learnt to comment on their own inferences or question them based on the information available in the texts.

The last step was monitoring, through which the students indicated a consciousness of the problem by judging its ease or difficulty. At this stage, the participants worked on activities such as making statements about the failure of inference or the difficulty of the target words. They also practiced to postpone their inference making when necessary or discarded the old inference and made a new one. Lastly, the students were asked to paraphrase the reading texts or write summaries of the texts.

The participants in the control group received Placebo, which was the traditional way of instruction, and obviously, there was no treatment; that is, no pre-reading activities were presented to the students and the instruction of any strategy that might help them to promote their lexical inferencing abilities were eliminated and they received no explicit instruction on how to guess the meaning of unfamiliar words. The students were only asked to go directly to the reading passages and read them for comprehension. Then, the teacher provided the meanings of all unfamiliar words and translated the passages.

Finally, the post-test of reading comprehension was given to the two groups to measure their reading comprehension ability and look into the impact of lexical inferencing strategy teaching.

Design

The present study was a quasi-experimental research, with a pre-test and post-test, and a control group. The independent variable of the study was lexical inferencing strategy instruction and the dependent variable was reading comprehension.

Results

Descriptive and inferential measures were applied for analyzing the research question of the study. The former includes the learners' possible development of mean scores form the pre- to the post-test of reading comprehension. The latter involves running paired and independent samples t-test to compare the two groups' reading comprehension ability. It should be mentioned that the assumptions to conduct the analyses were already checked. In this regard, the homogeneity of the variances was checked out through running the Levene's test and the p values over 0.05 supported the hypothesis that the group variances were the same for all the pretest and posttest distributions.

To provide an answer for the research question, initially, descriptive statistics was run, the results of which are shown in Table 1.

Table 1
Descriptive Statistics for the Pre- and Post-Tests of Reading Comprehension

					95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
	Group	N	Mean	SD		
Pre-test	Ex.	24	45.40	6.69	41.69	49.10
Post-test	Ex.	24	50.53	6.55	46.90	54.16
Pre-test	Con.	21	44.40	5.19	41.52	47.27
Post-test	Con.	21	44.46	5.30	41.52	47.40

For the reading comprehension test that was administered at the beginning of the experiment, the mean scores and the standard deviations for the experimental group and the control group were 45.40 (*SD*=6.69) and 44.40 (SD=5.19), respectively. The descriptive statistics showed that there were simply minor differences among the means of the two groups at the beginning of the experiment.

Moreover, for the reading comprehension test that was given at the end of the study, the mean scores, and the standard deviations for the experimental and the control group were 50.53 (*SD*=6.55) and 44.46 (*SD*= 5.30), respectively.

The above output revealed that the groups differed with regard to their performance on the post-test of reading comprehension in the sense that the treatment group seemed to perform better than the control one. In Table 2, the experimental and control groups' performances in the pre- and post-tests are illustrated.

Table 2
Paired Samples T-Test for the Reading Comprehension Tests of the Experimental and the Control Groups

				Mean difference	SD	t	df	Sig. (2-tailed)
Ex.	Reading post-test	comprehension	pre-test	-5.13	1.30	-15.27	23	.000
Con.	Reading post-test	comprehension	pre-test	-.06	.45	-.56	20	.582

Table 2 reveals that the learners in the experimental group could significantly develop their reading comprehension in the post-test (mean difference= -5.13; p=.000<.05), acknowledging the effectiveness of lexical inferencing strategy training. However, the learners in the control group had no significant improvement in their reading comprehension (mean difference= .06; p=.582>.05). Table 3 displays the comparison of the experimental and control groups in the pre-test of reading.

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Table 3
Independent Samples T-Test for the Reading Comprehension of the Experimental and the Control Groups

		Levene's Test for Equality of Variance		t-test for Equality of Means					
								95% Confidence Interval of the Difference	
		F	Sig.	t	df	Mean difference	Sig. (2-tailed)	Lower	Upper
Pre-test	Equal variances assumed	.616	.541	.138	43	1.000	.889	-.288	.333
	Equal variances not assumed			.138	43	1.000	.890	-.303	.330
Post-test	Equal variances assumed	.404	.670	6.71	43	6.07	.032	.39	11.73
	Equal variances not assumed			6.71	43	6.07	.032	.40	11.68

Table 3 shows that although the two groups' performance in the pre-test was almost the same, the outcomes revealed that lexical inferencing strategy instruction affected the reading comprehension of the two groups differently in the post-test ($t_{pretest}$=.138,P>.05; $t_{posttest}$=6.71, P<.05). According to the results, the learners who underwent the treatment of lexical inferencing strategy instruction significantly performed better than the traditional group in the post-test of reading comprehension. Hence, the research question was answered positively.

Discussion

This section provides discussion based on the results of the current investigation. The research question addressed in this study investigated whether lexical inferencing strategy teaching has any statistically significant impact on Iranian upper–intermediate EFL students' reading comprehension ability. The findings demonstrated that the participants could promote their reading comprehension skill by benefiting from lexical inferencing strategy. Comparing and contrasting with the findings of other studies done in foreign countries and Iran, the role of lexical inferencing strategy has been well recognized (Haastrup, 1990; Paribakht & Wesche, 1999). In other words, the findings of the inquiry are in alignment with research done by Riazi and Babaei (2008) who found that using contextual, intralingual, and interlingual cues, as lexical inferencing strategies, could be beneficial for various groups of learners to develop their reading comprehension. The results of the current investigation support the study conducted by Maghsoudi (2012) that benefitted from lexical inferencing strategy to help learners improve their cognitive and meta-cognitive skills in doing the required tasks, particularly reading activities. In fact, through lexical inferencing, the learners are able to identify, evaluate, and monitor their comprehension processes, which was according to Nassaji's (2006) model of lexical inferencing. In this model, similar to what was done in the lexical inference group of this study, identification of unknown words was carried out by repeating and parsing the target extracts of the text. Students also attempted to predict the meaning of unfamiliar words by using the word schema provided by the teacher to activate the pictorial meaning of the target words, assisting for better comprehension. Evaluation stage was done to interactively check the learners' comprehension of the unfamiliar key words in reading by commenting on their own inferences or questioning them based on the information available in the texts. Finally, monitoring stage was carried out to check the learners' final understanding by having them produce the unknown words within the sentence and then discussing its correctness with the whole class discussion (Nassaji, 2006).

In fact, lexical inferencing, as a reading strategy, can be used as a device to assist learners get mastery over reading and enhance their reading comprehension performance (Haastrup, 2010; Nassaji, 2003). Effective use

of lexical inferencing strategy helps learners to be aware of the structure of the text, which leads to conscious comprehension of the text (Huckin & Bloch, 1993). In fact, it aims to provide an interactive learning atmosphere for the learners to boost their mental capacity in order to be actively involved in the reading comprehension for the purpose of better scrutinizing the text (DeBot et al., 1997; Riazi & Babaei, 2008).

Theoretically discussing the results of the research question, it can be mentioned that schema theory of reading comprehension (Rumelhart, 1981) can be applied to appropriately justify the practical application of reading strategies, since, as Rumelhart (1981) argues, reading strategies through lexical inferencing, employed for the activation and use of the relevant schemata, allow for the organization of the information, anchoring and relating new lexical items to the existing concepts.

To sum up, the present inquiry pursued the purpose of scrutinizing the impact of lexical inferencing strategy teaching on the Iranian upper-intermediate EFL learner's improvement in reading comprehension. Although there were some research focusing on the strategy of lexical inferencing (e.g., Haastrup, 1990; Paribarht, & Wesche, 1999), there seemed to be the need for more studies to be carried out to replicate previous research on lexical inferencing within an appropriate theoretical framework of schema theory, particularly in the foreign language context, such as Iran. Based on the results of the data analyses, it was found that the use of the lexical inferencing strategy was significantly effective in improving the female learners' reading comprehension ability. In fact, conscious guessing of unknown words boosted the learners' ability to scrutinize the text, leading to increased comprehension.

The findings can be both theoretically and practically significant. As to the theoretical implications of the study, schema theory was applied to justify the effectiveness of reading strategy instruction of lexical inferencing on the learners' improvement in reading comprehension skill. In fact, the participants could benefit from reading strategy instruction to activate their background knowledge and get mastery over reading comprehension. In other words, engaging learners in pre-reading activities and schema-based inference can be helpful in identifying the meaning of unfamiliar words. It

also seems beneficial for teachers to be aware of reading strategy instruction in terms of lexical inferencing, which may help them teach reading comprehension as effectively as possible. Learners can also benefit from lexical inferencing strategy to get rid of reading difficulties since they learn how to tackle with unknown words and how to benefit their background knowledge when reading a text. Finally, in order to raise teachers' awareness in terms of strategy instruction, it seems essential for teachers to participate in teacher education programs, in particular, those highlighting the role of strategy instruction. It seems these programs can be beneficial for both novice and expert teachers.

The present study was conducted with female language learners. It can be beneficial to compare male and female participants' reading comprehension ability after receiving lexical inferencing strategy instruction. Moreover, it was delimited to the participants at one proficiency level, that is, upper-intermediate learner. In order to broaden our understanding of the effectiveness of lexical inferencing strategy instruction, a larger group of learners at different levels of language proficiency can be taken into account to more reliably generalize the findings. Finally , this study was delimited to the context of private language institute to meet the purpose of the study. Future research can be conducted in the context of universities and high schools since they also focus on reading comprehension and strategy use.

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