

The Effect of Textual and Audio Glossing and Skewing Techniques on EFL Learners' Knowledge of Lexical Collocations

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Abstract

Effective communication in a foreign language requires, among other aspects, not only a vast repertoire of single words but also to the company these words keep as collocations. This study investigated the effects of two glossing techniques (audio and textual) versus skewed input on EFL learners' lexical collocation learning. To this end, 100 Iranian advanced EFL learners were assigned to four equal groups (n=25) based on their performance on Oxford Placement Test: Textual Glossing Group (TGG) was treated by textual glossing, Audio Glossing Group (AGG), through audio glossing, Skewed Input Group (SIG), by skewing technique. They were assigned as the experimental groups, and the Control Group (CONG) was instructed by L1 equivalents for L2 collocations as a placebo. A piloted collocation test was administered as a pretest and posttest. All groups went through their required instruction for ten sessions. The findings showed that the different techniques employed in the study were effective on the participants' achievement in collocation. It was also shown that the TGG and AGG outperformed the other groups. The findings of this study have some pedagogical implications in EFL contexts for teachers, EFL learners, and syllabus designers.

Keywords: Audio Gloss, EFL Learners, L2 Lexical Collocation, Skewed Input, Textual Gloss

1. Introduction

Vocabulary knowledge as one of the component skills plays an important role in language learning. Alemi and Tayebi (2011) pointed out that vocabulary is a fundamental component of language proficiency which provides the basis for learners' performance in other skills. Very little can be conveyed without the benefit of grammar, but without vocabulary nothing can be conveyed. Motallebzadeh and Ganjali (2011) noted that words are the building blocks of language, and an insufficient vocabulary knowledge will surely become a pitfall to the acquisition of other skills including reading, writing, listening and speaking. According to Decaricco (2001), vocabulary learning is viewed a central component in language acquisition, whether in the first, second or foreign language. Lexical competence is the central to communicative competence, involving learners' ability to communicate successfully and appropriately.

Koya (2005) stressed the significance of learners' knowledge of collocations and recognized them as a crucial part of language use which distinguishes native and non-native speakers. Learners' ability to use collocations accurately helps them produce language with native-like accuracy or near-native competency. Learners in EFL settings, however, typically have problem with the accurate use of collocations, originating from lack of exposure to the target language and insufficient awareness of the differences in collocational use between the L1 and the L2. According to Vasiljevic (2008), the gap existing between learners' L1 and L2 knowledge and awareness of collocations interferes with the acquisition of collocations in the target language and sometimes leads to lexical fossilization.

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Learners are frequently faced with too many unfamiliar or unknown words and expressions during their foreign language learning. This issue often arises in foreign language learning contexts where reading is a main source of vocabulary growth and enhancement. Chan and Liou (2005) referred to the lack of enough attention to teaching collocations in EFL contexts and classes, and owing to EFL learners' limited exposure to collocations they are found to be weak in collocation use. Therefore, it was suggested that instead of teaching single lexical items to learners, students should be given awareness of the importance and necessity of acquiring collocations. Siyanova and Schmitt (2008) stressed the necessity for implementing new vocabulary teaching techniques in foreign language classes, proposed that instructors need to shift their trend towards vocabulary teaching pedagogies by drawing attention to phrasal elements rather than individual words.

Nation (2013) indicated that texts with glosses make the process of meaning derivation uninterrupted and help learners minimize their chance of incorrect inferencing, originating from inadequate context, and draw their attention to the unfamiliar words and promote use of more difficult authentic texts. In addition, Hulstijn (1992) introduced the idea of multiple-choice glosses together with mental effort hypothesis to indicate that inferencing involves mental effort to the point that the greater learners are involved in the mental effort, the better the recall and retention of new information occur.

Appropriate use and interpretation of collocations by L2 learners are as two features which rely upon learners' linguistic proficiency. In some EFL classes, students are exposed to frequent use of L1 equivalents or have tendency to resort to a high frequency of L1 meaning for learning L2 collocations. This tendency has been established as a habitual practice in some EFL learning contexts to deal with vocabulary and collocation learning (Motallebzadeh & Ganjali, 2011). In view of collocational knowledge of EFL learners, however, it is to say that, according to Sadeghi (2009), many collocation errors are induced by learners' L1 influence (i.e. inter-lingual) in that learners prefer or have habitual tendency to L1 equivalents for L2 collocations which hinder them to pay attention to restrictions on word combinations and overuse the same typical collocations. This idea proposes that effective replacements need to be found to encourage learners in EFL classrooms to make use of L2 equivalents or definitions in place of learners' L1 equivalents for collocations which bring about more effective result in the process of collocations achievement and enhancement (Zarei, & Koosha, 2003).

2. Review of Literature

2.1. Glossing

Glosses are many kinds of attempts to supply what is perceived to be deficient in a reader's procedural or declarative knowledge. Yee (2010) values glosses as vocabulary guides during reading serving additional information beyond text and thereby assist the learner as a mediator between learner and text. Segler (2001) defines glosses as brief definitions or explanations which are most often supplied for unfamiliar words in a text. And considers them as instruments for learning which were once of three types: synonyms, encyclopedic comments, and grammatical notes. Yanguas (2009) describes glosses as definitions of words that are written in the margins or sides of a page. He, likewise, views glosses as substitution for dictionary and maintains that reading strategy suggestions and interspersed questions are referred to as glosses, too. Stewart and Cross (1991) strongly maintain that marginal glosses, notes written in a blank space round the printed matter on a page, represent a markedly different treatment of texts. Glosses are called by other terms including adjunct aids, metatext, and paratext (McDonell, 2006). Makoto (2006) views glossing as the most straightforward way to clarify and understand the meanings of words as they appear in a context because it does not even require the effort of searching and then choosing the appropriate meaning out of a dictionary look-up. The most common types of glosses are textual, audio, pictorial, and a combination of them. Textual glossing, according to Makoto (2006), refers to the marginal explanatory comment, to say brief definitions or translations, added to a text to clarify its meaning to the reader and limit learners' continual dictionary consultation. Audio annotation/gloss uses spoken text, preferably the voice of a native speaker of the L2. It includes the

pronunciation of an unknown word, a short definition, or a sentence that contains the word (Chen, 2006). Salem and Aust's (2007) notion of audio glosses is short definitions or explanations with nonlinearly linked-data represented through audios.

2.2. Empirical Studies on Glossing and Vocabulary Learning

Some studies have been done to examine the effects of glossing on L2 vocabulary learning. These studies have supported more or less the effectiveness of glosses in facilitating L2 vocabulary learning. Hong (2010) refers to glosses as techniques for promoting incidental vocabulary learning. They are typically represented in the side or bottom margins, which are most often supplied for unfamiliar or unknown words. They are helpful to limit learners' chance of continual dictionary consultation that may hinder and interrupt the L2 reading comprehension process. Ko (2005) views glossing as one of the techniques used for input modification characterized by some advantages: 1) it helps learners to know and understand the meaning of a new word instead of wrong guesses they make. It often seems that once learners make erroneous guesses, they seem reluctant to change them. Erroneous guesses are prevented with the help of glosses; 2) glosses help learners read and enjoy their reading without any interruption and thus they do not need to look the new words up constantly; 3) glosses aid learners to activate their prior knowledge on the topic with the new knowledge in the input, assisting them in understanding and remembering the content of the text they are exposed to; 4) the last advantage of glosses is that they supply learners with potential for greater autonomy and learners can look up the unknown words. Furthermore, Faramarzi, Elekaie, and Koosha (2014) point to four functions of gloss on vocabulary learning: first, marginal glosses are easier to use in contrast to dictionaries; second, glosses include the characteristics of and potential for consciousness-raising and input enhancement; third, they support the meaning-form connection approach by relating words to meaning; fourth, learners are encouraged to do lexical processing.

Yanguas (2005) claims that glosses seem to be more preferable to dictionaries in that readers' chance for consultation with the definitions in the text causes them not to be interrupted during the reading process. Yoshii (2006) based the effectiveness of glosses on Noticing Theory, assuming that glossing is considered a technique enhancing EFL learners' chance for noticing and improving vocabulary acquisition. Glosses raise the learners' autonomy during the flow of reading (Nation, 2013), and significantly increase comprehensible input (Yoshii, 2006) which is appreciated as a determining condition of successful L2 acquisition. Nation (2007) underscores the importance of glossing as a facilitating factor, and Alessi and Dwyer (2008) acknowledge glossing as an easy and fast access to vocabulary believed to provide word meanings more suitable to and compatible with the context of what the learner is currently reading. Lin and Huang (2008) delved into the comparative effectiveness of two modes of meaning-inferred and meaning-given glosses on learners' vocabulary learning, the results of which confirmed that meaning-inferred gloss was considered to be more effective in vocabulary gain and retention. Cheng and Good (2009) explored the effect of glosses on EFL vocabulary acquisition and concluded positive results, reporting that the targeted glossed words were more successfully learned and processed than the no-gloss provision.

Textual glosses, as Al-Jabri (2009) reported, are characterized by possessing some capacities such as enhancing learners' ability for general comprehension, vocabulary retention, and saving their time and effort during the flow of reading L2 passages. More importantly, Moazzeni, Bagheri, Sadighi, and Zamanian (2014) valued textual glosses as helpful tools to language instructors to encourage students to be exposed to authentic learning materials that may be linguistically beyond the learners' level. It is a good practice in instructional contexts to involve learners in reading and dealing with authentic materials. Counting on Segler's (2001) expression on textual glosses, they are some representation of brief definitions or translations which are most often given for unknown or unfamiliar words and expressions in a text, one of the advantages of which is to help learners limit their continual dependence upon dictionary consultation that might interrupt the L2 reading comprehension process.

2.3. *Skewed Input*

Skewing is a characteristic of input language to which learners are exposed. Skewed input refers to particular language features occurring regularly or unusually often in the input rather than the input being varied in the language features it contains. Goldberg and Casenhiser (2008), Boyd and Goldberg (2009) describe skewed input as a sensibly higher token frequency for one specific type of the target construction than for the others. Ellis and Collins (2009) distinguish two models of input representation including type versus token frequencies. Token frequency refers to how often a particular form or item may be represented in the input. Type frequency, in contrast, accounts for the number of distinct lexical items that can be substituted in a certain slot in a construction, ranging from word-level construction to syntactic construction. According to Bybee and Hopper (2001), the productivity of phonological, morphological, and syntactic patterns is accounted for by the function of type frequency. The promotion or conservation of irregular forms and idioms are the results of high token frequency. Bybee (2006), Diessel (2007), and Ellis (2002) predict significant effects for input features like frequency distributions on all aspects of processing, storage, and acquisition. The development of productivity in first language acquisition and artificial language learning seems to be specifically dependent on input features such as type variability and skewed input (Boyd & Goldberg, 2009; Goldberg & Casenhiser, 2008; Suttle & Goldberg, 2011). In addition, DeKeyser (2005) valued frequency as an important factor that determines the easiness or difficulty with which a specific linguistic feature or structure may be learned. DeKeyser's experiment on frequency in EFL learners' acquisition of English dative structure (construction) indicated that, due to sufficient input, high frequency (HF) English dative verbs do not seem as problematic for L2 learners with high English proficiency.

2.4. *Empirical Studies on Skewing and Vocabulary Learning*

Some studies examined the acquisition of novel constructions with verbs, the most paramount of which were represented by Casenhiser and Goldberg (2005) and Goldberg, Casenhiser, and Sethuraman (2004). Their experimental work was a comparative study on the effectiveness of balanced versus skewed input on enhancing the comprehension and production of subject– object–verb constructions. They reported that both balanced and skewed types of input representation were effective, but the effectiveness of skewed input on category formation was more significant than balanced input in that the former led to further enhancement in item acquisition.

Goldberg, Casenhiser, and White (2007) investigated comparatively the effectiveness of two models of skewed representation of input involving skewed first input versus skewed random input to see which one was more productive. Drawing on the findings of the study, it was revealed that the former brought about more salient and determining impact than the latter on facilitating category formation. The findings were more compatible with first language speakers. Likewise, Maguire, Hirsh-Pasek, Golinkoff, and Brandone (2008) provided empirical support for the impressiveness of skewed representation of input in language acquisition in learners who showed more tendency to the acquisition of novel verbs, and Kidd, Lieven, and Tomasello (2006, 2010) reported evidences of reliance on single high-frequency in children. Web, Newton, and Chang (2013), in line with these studies, reported the positive effects of exposing learners to skewed model of input representation on the promotion of vocabulary acquisition.

Year (2009) and Year and Gordon (2009), however, revealed diverging results concerning the effect of two models of input representation, i.e., skewed and balanced input, in EFL context research with regard to dative constructions. The input in the experiment represented prepositional and double-object dative constructions given through skewed and balanced procedures. The conclusive evidence indicated different results in that both skewed and balanced input led to positive effect on the promotion of dative constructions in the EFL context and in this regard, no difference was reported between them in terms of their effectiveness on the variable under investigation. The divergent aspects of the findings on impact of skewed and balanced norms of input representation are accounted for in light of EFL and L1 contexts. In line with these studies, Year and Gordon (2009) reported the equal effects of the two procedures of input representation

(skewed and balanced), claiming no difference in their effect on the improvement of knowledge of lexical items.

McDonough's (2014) experiment involved investigating the comparative effectiveness of two models of skewed and balanced input on facilitating and promoting the comprehension of the double-object dative construction in L2 context. In light of the results of the study, it was indicated that balanced input through which, the EFL learners were treated, was more beneficial than the skewed input as to enhancing the L2 learners' comprehension of double-object datives. In addition, McDonough and Trofimovic (2013) examined the comparative effect of balanced versus skewed models of input on the acquisition of novel patterns involving transitive construction in Esperanto, the result of which showed the superiority of representing input via balanced procedure in deductive form over the skewed norm. Worded differently, the subjects who were exposed to balanced representation of input in deductive approach outperformed the subjects who experienced skewed input.

According to Koosha & Jafarpour (2006), the majority of Iranian EFL learners have a good knowledge of English grammar and vocabulary; however, they seem to have serious problems with the production of collocational patterns, in particular, lexical and prepositional collocations. This inefficiency, as Zarei and Baniesmaili (2010) point out, seems to be, to some extent, due to the lack of collocational knowledge among Iranian EFL students, and to a large extent, the inadequate emphasis given to collocational patterns in their textbooks, and the type of instructions they receive. Moreover, such multi-word lexemes, i.e., prepositions and their collocational patterns have not usually been a major focus of teaching and research in our country.

The significance of this study is to its theoretical and practical contributions to vocabulary learning in EFL contexts. Theoretically, this study draws attention to developing techniques for dealing with unknown or unfamiliar words during reading activities which has been one of the principal challenges of English reading and vocabulary classes. Two of the techniques which are applied to vocabulary learning task and save students' time and effort in L2 texts are glossing and skewing. Therefore, the results of the findings may increase understanding on the nature of learners' collocations and vocabulary learning in a non-native English-speaking country, particularly Iran. From a practical point of view, since for many students reading well and acquiring a sizable vocabulary are recognized as their fundamental goal in the development of L2 proficiency (Tran, 2006), the purpose of this study is to shed light on collocation learning problems that the learners may experience in instructional environments, especially for the EFL courses whereby English is formally instructed. As Sarraf Tehrani and Aliasin (2013) point out, L2 texts aided with vocabulary glosses may enhance students' vocabulary knowledge and improve reading comprehension at the same time. The current study tried to find out if Iranian university students can acquire vocabulary effectively with the assistance of glossing or skewed input.

Empirical researches on the comparative effects of two modes of textual and audio glossing versus skewed input technique and their interaction on Iranian EFL learners' L2 lexical collocation have not adequately been addressed in the literature yet. In the context of EFL vocabulary acquisition, this study was an attempt to investigate the efficacy of two different glossing modes (the textual glossing and audio glossing) comparatively versus skewing technique in an EFL environment like Iran. The study focal issue was to determine which mode or technique - glossed conditions or skewed input - would be more effective on aiding lexical collocation enhancement. Given the variables under investigation in this research work, the current study addressed the following research question:

Research Question One: Are there any significant differences in the L2 lexical collocations of Iranian advanced EFL learners who were treated by audio glossing, textual glossing or skewing techniques?

3. Methodology

All requirements of a true experimental study, involving pretest, posttest, randomization, treatment for the experimental groups and placebo for the control group were taken into consideration in this study. The independent variables of the study were textual glossing, audio glossing, and skewed input techniques, and the dependent variable, as investigated in this study, was EFL learners' L2 lexical collocation. There were three experimental and one control groups in the current study. TGG, AGG, and SIG were determined as the experimental groups, and one control group titled as CONG.

3.1. Participants

The participants in the study included 100 Iranian advanced EFL learners selected from two English language institutes in Gilan. There was an equal number of male and female, i. e., 50 male and 50 female. To achieve the target sample of the study, 100 Iranian advanced learners were selected out of 137 students via administering OPT with six spectra of beginner (0-17), elementary (18-29), lower intermediate (30-39), upper intermediate (40-47), advanced (48-54), and very advanced (54-60); the intended sample fell under the fifth range, i.e., the students whose score range was between 48 to 54 were determined as the target participants (Appendix I, p. 11). The method of the selection of the participants was stratified random sampling, through which equal number of female and male students were assigned to four groups, each of whom comprised 25 students, including TGG, AGG, and SIG, all as the experimental groups and CONG as the control group. The participants' age ranged from 17 to 26 and their first language was Persian. They shared the same demographic information.

3.2. Instruments

The following instruments were used in order to conduct the study:

3.2.1. The Oxford Placement test (OPT)

In order to measure the proficiency level of the students and keep homogenized participants to serve the purpose and meet the requirements of the current study, the OPT was administered to 137 EFL learners, out of whom 100 participants whose score range was 48-54 on OPT (Appendix I, p. 11) were selected as the target participants. The OPT included 60 multiple-choice items comprising grammatical and vocabulary tests. The time allotted for the test administration was 30 minutes.

3.2.2. Pilot Study (Familiarity-rating Checklist)

The main purpose of this study was to investigate the impact of textual and audio glossing and skewing techniques on EFL learners' achievement in lexical collocations. Consequently, a checklist including 80 lexical collocations from a native source for advanced level (McCarthy & O'Dell, 2005) was given to 30 advanced EFL learners, other than the target participants in this study, who were selected based on the OPT and they were asked to rate the collocations based on their familiarity. Each of the 80 lexical collocations was listed without any contextual support, along with four rating scales: a) very high frequency, b) high frequency, c) low frequency, and d) very low frequency (Appendix 2). Mean ranks and standard deviations were computed for the (80) items and (40) lexical collocations that had the low mean rank (mean rank < 2) were selected as the least known ones (they are shown in bold font within Appendix 3). These 40 items were used as the pretest and posttest in this study for the four groups before and after introducing the specific treatment to the three experimental groups and placebo to the control group. The results of the item statistics for the 80 lexical collocations are available in Appendix 3.

3.2.3. The Piloted Pre-test of Lexical Collocation

The lexical collocation test, administered as the pre-test in this experiment, comprised 40 lexical collocations prepared through a pilot study. They were selected from a native source for advanced level (McCarthy & O'Dell, 2005) and administered to the whole participants involving three experimental groups and one control group. It is worth mentioning that the collocations were

represented with no contextual clue such as sentence representation, multiple-choice form of distribution, etc.

3.2.4. The Post-test of Lexical Collocation

After the completion of treatment sessions for the experimental groups and placebo for the control group, the same piloted lexical collocation test was given to the participants as posttest five weeks after the pre-test administration. It was equal in all respects to the pre-test except for the rearrangement of some items, which was intentionally done to control and lower the probable testing effect and the individuals' test wiseness.

3.2.5. Measures for the Lexical Collocation Pre- and Post-test

The lexical collocation test, as pretest and posttest, which was administered to the groups, comprised 40 collocation represented in isolation, and each item was assigned a statistical value of 0.5 point (0.5 point for each lexical collocation item), totally 20 points.

3.3. *The Material for Teaching*

All participants in the study were exposed to the same teaching material in terms of number of collocations and length of each text, and instructed within the same time period, but through different methodology as the requirements of the groups. The teaching material included 10 reading texts of nearly equal lengths, each of which involved 8 to 10 lexical collocations, through which the participants of different groups were required to practice through their required conditions. The texts were all selected and extracted from a native source on collocation written for advanced students (McCarthy & O'Dell, 2005). Each piece of collocational practice text, as teaching material, was scheduled to be instructed within one session.

3.4. *Procedure*

First, the English proficiency test (OPT) was administered to 137 students learning English in two English Language institutes. Through the administration of the proficiency test, 100 students whose score range was 48 to 54 on OPT (Appendix 1, p. 11), were selected as the target participants. Next, the whole participants were randomly divided into four equal groups (n= 25) by being assigned as TGG, AGG, SIG, and CONG. Then a piloted version of lexical collocation test, as a pretest, including 40 collocations, was given to the participants to write their definitions in the learners' L2. After that, the participants of different groups received their required instruction within the same time period, which lasted ten sessions, and based on the same materials including ten English texts, each of which embraced eight to ten new lexical collocations. The English texts, each including 170 to 180 word limit, from English Collocations in Use -Advanced (McCarthy & O'Dell, 2005) were given to the participants under four conditions: textual glosses, audio glosses, skewed input, and teacher conventional or routine method. The participants in the TGG were instructed through textual glossing condition. To this end, during any single session of treatment, a reading text with eight to ten collocations was given to the students, wherein the meaning of the targeted collocations were glossed through providing their definitions in the learners' L2 on the margins. The participants of this group were supposed to practice the new collocations and their meaning by textual glossing. The AGG was treated by audio glossing condition, according to which the students listened to the definitions of the intended collocations as read by teacher in their L2. The participants in the SIG were treated by skewing technique, through which the collocations were given more salience or represented by further enhancement involving frequent repetition and frequent use of them in new contexts usually through sentence examples. The CONG, however, was instructed by the teacher routine or conventional method involving individually reading or having one of the students read aloud the target collocations given in the texts and clarifying the meaning of them in the learners' L1. Since the meaning of the collocations in the texts was clarified in the learners' L1, they were allowed to make use of a bilingual dictionary to look the words up. As the final stage, the four groups under study were posttested through the same collocation test in order to measure their vocabulary achievement as a result of being instructed by different techniques examined in the study.

4. Results

This study was carried out to examine the comparative impact of three conditions of practice (textual glossing, audio glossing, and skewed input) on L2 collocation achievement among advanced EFL learners. In order to reach a conclusion, the pretest-posttest instrument, which was a piloted test on lexical collocation, was employed, the results of which were presented through the following tables. Before running ANOVA, the assumption (normality of data) was taken into account as shown in Table 1.

Table 1: Descriptive Statistics of the Participants' Scores on the OPT

N	Mean	Minimum	Maximum	Range	Variance	Std. Error of Mean
80	96.68	22.00	164.00	141.00	2775.12	5.35

The proficiency test (OPT) was administered as a homogeneity test to 137 participants at advanced proficiency level, out of whom 100 were selected according to the results of the test. The mean score of the participants was 96.68 and those students whose score on the OPT fell within 48-54 were selected as the target participants.

Table 2: Result of the Normality Test

	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2- tailed)	Mean Difference
Vocab. Equal Variances Assumed	0.08	0.77	2.92	96	0.00	1.72
Equal Variances not assumed			2.92	95.22	0.00	1.72

Given the Levene's Test for Equality of Variances, as shown in Table 2, it is inferred that the variance of participants is normal ($F = 0.08$, $p = .77$).

4.1. Investigating the Null Hypothesis

To show whether there were any differences in the participants' achievement in L2 lexical collocation, a one-way ANOVA was conducted by incorporating the pretest scores of the four groups under study (TGG, AGG, SIG, and CONG), the statistical results of which are shown in Table 3.

Table 3: Descriptive Statistics on Pretest for the TGG, AGG, SIG, and CONG

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
TGG	25	13.04	0.78	0.15	12.71	13.36	12.00	15.00
AGG	25	12.72	0.97	0.19	12.31	13.12	11.00	14.00
SIG	25	12.76	0.87	0.17	12.39	13.12	11.00	14.00
CONG	25	13.02	1.15	0.23	12.54	13.49	11.00	15.50
Total	100	12.88	0.95	0.09	12.69	13.07	11.00	15.50

In order to show whether the differences in the groups' achievement in L2 lexical collocation are significant, the ANOVA inferential results are represented in Table 4.

Table 4: ANOVA Test of L2 Lexical Collocation in Pretest

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.12	3	0.70	0.77	0.51
Within Groups	88.30	96	0.92		
Total	90.42	99			

According to Table 4, it is inferred that there exist no significant differences in the four groups' achievement in L2 lexical collocation, considering $F=0.77$ and $p = 0.51$. In order to examine whether the groups were different in their enhancement of lexical collocation from pretest to posttest after the treatment fulfillment, another one-way ANOVA was administered among the posttest scores of the TGG, AGG, SIG, and CONG. The results are demonstrated in Tables 5 and 6.

Table 5: Descriptive Statistics on Posttest for the TGG, AGG, SIG, and CONG

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
TGG	25	16.28	1.42	0.28	15.69	16.86	13.50	19.00
AGG	25	14.92	1.07	0.21	14.47	15.36	12.00	17.00
SIG	25	13.72	1.06	0.21	13.28	14.15	12.00	15.00
CONG	25	13.60	1.10	0.22	13.14	14.05	12.00	15.50
Total	100	14.63	1.59	0.15	14.31	14.94	12.00	19.00

As given in Table 5, the mean values for different groups are shown as being different, indicating that there are differences in the groups' enhancement in L2 lexical collocation on the posttest treated by various techniques. To show whether the groups are significantly different after the treatment, the inferential data are represented in Table 6.

Table 6: ANOVA Test of Posttest Lexical Collocation

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	117.39	3	39.13	28.26	0.00
Within Groups	132.92	96	1.38		
Total	250.31	99			

Based on the posttest ANOVA analyses, as represented in Table 6, it is inferentially revealed that the groups are significantly different after the treatment ($F = 28.26 > 1.00$; $P = 0.00 < 0.05$). Accordingly, it is shown that the techniques used in this study (textual and audio glossing, skewed input) are effective on the achievement of L2 lexical collocation in the participants of different groups examined in this study. As a result, the null hypothesis that suggests there are no significant differences in the L2 lexical collocation scores of EFL learners treated by glossing and skewed techniques is rejected. In addition, to indicate the place of differences among the groups statistically, a post hoc test was conducted. Its results are illustrated in Table 7.

Table 7: Post Hoc Test for the TGG, AGG, SIG, and CONG

(I) Various techniques	(J) Various techniques	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
TGG	AGG	1.36*	0.33	0.00	0.41	2.30
	SIG	2.56*	0.33	0.00	1.61	3.50
	CONG	2.68*	0.33	0.00	1.73	3.62
AGG	TGG	-1.36*	0.33	0.00	-2.30	-0.41
	SIG	1.20*	0.33	0.00	0.25	2.14
	CONG	1.32*	0.33	0.00	0.37	2.26
SIG	TGG	-2.56*	0.33	0.00	-3.50	-1.61
	AGG	-1.20*	0.33	0.00	-2.14	-0.25
	CONG	0.12	0.33	0.98	-0.82	1.06
CONG	TGG	-2.68*	0.33	0.00	-3.62	-1.73
	AGG	-1.32*	0.33	0.00	-2.26	-0.37
	SIG	-0.12	0.33	0.98	-1.06	0.82

As represented in Table 7, the level of significance between the TGG and AGG, TGG and SIG, TGG and CONG is lower than 0.05, implying that groups are significantly different after the treatment. Likewise, the level of significance between AGG and SIG, AGG and CONG indicates significant differences after the treatment completion. However, the level of significance between SIG and CONG shows no significant difference after the treatment.

5. Discussion

This study aimed at investigating the effects textual and audio glossing and skewed techniques on L2 lexical collocation achievement among Iranian advanced EFL learners. The results of the study, considering the treatment effects of the four collocation teaching techniques involving textual glossing, audio glossing, skewing, and teacher conventional method, as were inferred from ANOVA analyses, yielded to the conclusion that the various techniques had positive effects on the learners' L2 lexical collocation achievement. The inferential results of the post hoc analysis, elicited from the four groups' posttest scores on lexical collocation, implied that the TGG instructed by textual glossing and the AGG participants treated by audio glossing as two independent variables far outperformed the other groups, i.e., the SIG, treated through skewed technique, and the CONG, to whom L2 lexical collocations were instructed through L1 gloss.

Most EFL learners find it very hard to have both fluent and accurate use of collocations in English. Therefore, aiming to enhance EFL learners' competence in L2 collocations, three effective models of teaching collocations were treated in the current research work: textual glossing practice, audio model of glossing, and skewed condition of input, the pedagogical method of which can be discussed by referring to Chen (2006), Chen and Yen (2013), and Nation (2001), by claiming that L2 learners' demand for glossed techniques facilitates vocabulary learning and helps them avoid incorrect guessing from the context and engage them in the rehearsal of the targeted vocabulary by reinforcing the first exposure of the word in the text, making it possible for the targeted word to integrate into the learner's reading vocabulary. According to Watanabe (1997), this advantage of gloss and its potential for L2 learners' engagement into the rehearsal of the targeted words can be explained and accounted for by input frequency, through which L2 learners gain opportunity to experience multiple inputs of the targeted words by undergoing three phases of input: through the first input, L2 learners go through the text and encounter the unknown word, as for the second input, they check the intended gloss for the meaning of the targeted word, followed by returning to the reading text making effort to fit the meaning into the context which is the third input.

The findings of the study, considering the positive effects of glossed techniques as examined in this experimental research, can be, in a way, explained by referring to Schmitt's (2000) noticing hypothesis, discussing that targeted glossed words are given more salience, making them more noticeable and eye-catching to learners while dealing with texts, contributing to the learners' psychological readiness to acquire the targeted forms. According to Schmitt, noticing, in this sense, that entails the intake of both the meaning and form of the targeted glossed words, assists the learners in promoting from initial recognition to internalization of the target forms. In light of checking the glossed words provided in L2 reading texts, learners are able to deliberately attend to particular lexical forms and they notice the gap existing between their own performance in the target language and the performance of proficient users of the language.

The findings of the current study, concerning the treatment effect of textual glossing, are found to be in line with Al-Jabri's (2009) viewpoints on textual gloss, by which he characterizes this technique as effective tools to promote vocabulary and collocation learning and retention, Moazzeni, Bagheri, Sadighi, and Zamanian's (2014) viewpoints which call textual glosses as useful instruments to engage learners into authentic texts. The findings of the study also are supported by Segler's (2001) commentary statement on the merit of textual gloss that reduces learners' continual reliance upon dictionary use which may interrupt their regular processing of texts. The results of this study are supported by Yanguas (2005), who points out that glosses restrict learners' repetitive consultation upon dictionaries and promote their self-independence by extracting the meaning of novel words through text resources, and Yoshii (2006), who values glosses as a medium for enhancing vocabulary acquisition.

As far as the skewed results are concerned in this study, the finding, in a way, seem to be in line with what Casenhiser and Goldberg (2005), Goldberg et al., (2004), Goldberg et al., (2007) showed on the effectiveness of skewed model of input representation over balanced input in learners' enhancement in the intake of new words. Likewise, the finding on skewed input in this research work seem to be consistent with the results disclosed by Maguire et al., (2008) and Kidd et al., (2006, 2010) on the efficacy of exposing learners to skewed representation of input on their new words achievement.

These findings, regarding the skewed results, are inconsistent with the results reported by McDonough and Trofimovic (2012), McDonough (2014), and McDonough and Nekrasova-Becker (2014), who indicated the outperformance of balanced input over skewed input in view of acquiring novel constructions. The outcomes of the current study are not found to be in line with Year (2009), and Year and Gordon (2009), who indicated the equal effects of the two models of input representation (skewed and balanced input).

6. Conclusion

The findings of the study in light of the four different treatment conditions revealed that the four modes of treatment involving textual and audio glossing, skewed input, and teacher conventional method had different effects on the learners' achievement in collocation, and there existed significant differences in their achievement in L2 collocation. Likewise, the results showed that overall the subjects in the TGG and AGG had significantly more improvement than those in the SIG and CONG with regard to L2 collocation achievement. This would suggest that textual and audio glosses create more effective conditions for learning collocations.

Findings of the present study are significant in that very few studies of textual and audio glossing as well skewing have dealt with lexical collocations, in particular. As it has been mentioned in the literature that learning collocations is especially difficult and problematic for L2 learners (Minaei & Rezaie, 2014), findings of the present study can be inspiring both for foreign language learners and teachers. One pedagogical implication of this study relates to the effectiveness of employing the two types of glosses which are as useful tools for improving lexical collocations both in terms of focus on form and accurate use of them, and they could be used in L2 classrooms. Collocations are regarded a part of EFL learners' knowledge of English and help students produce correct target language collocations. Exposing learners to the audio and textual

glossing and also the skewed representation of input offers them opportunities to both make a correspondence between form and meaning and enhance their understanding of the application of newly-learned collocations; in addition, these techniques shift the learners' deliberate attention to the employment of L2 equivalents and definitions for lexical collocations more deeply resulting in deeper understanding and knowledge of the target items. Moreover, teachers in EFL contexts can benefit the findings of the current study. This proposes that teachers should be aware of the capacity the targeted glossed and skewed input conditions, to which learners are exposed, creates to result in greater knowledge of L2 collocations. So teacher of English in EFL contexts should plan for situations to expose learners to tasks involving audio and textual glossing and also skewing that engage students to interact and collaborate with peers in classrooms and assist them in effective learning of L2 collocations. Syllabus designers can be the other stakeholders of the finding of the study. The provision of glosses facilitates the burden of frequent use of dictionary, which kills all interest in reading, and even interferes with the process of constructing a mental representation of text meaning. What is more, enhancing input through skewing and glossed techniques relieve EFL learners' burden of memorizing lots of unfamiliar L2 collocations meanings from abstract word lists,

The future studies of similar nature on this area are recommended to examine the comparative effect of single textual gloss or audio gloss versus multimodal (a combination of two or three) glosses on EFL learners' knowledge of lexical collocations for different proficiency levels. What is more, if practical and possible, the future researchers think of embarking on a larger population or more participants to incorporate to carry out the study.

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