Journal of Modern Research in English Language Studies
Print ISSN: 2676-5357
Online ISSN: 2676-5985

Differential Effects of Input/Output Tasks on Learning English Collocations by Iranian EFL Learners Through the Corpus-Based Instruction

Mohammad Oveidi[1], Mehrdad Sepehri[2*], Sajad Shafiee[3]

[1]PhD candidate, Department of English, Shahrekord Branch, Islamic Azad University, Shahrekord, Iran, mohammadoveidi@gmail.com
[2]Department of English, Shahrekord Branch, Islamic Azad University, Shahrekord, Iran, m.sepehri@iaushk.ac.ir*
[3]Department of English, Shahrekord Branch, Islamic Azad University, Shahrekord, Iran, s.shafiee@iaushk.ac.ir

Article Info

Article Type:

Research Article

Received:

24/03/2022

Accepted:

25/06/2022

ABSTRACT

Learning of English collocations has been found quite demanding for many language learners in general and for the Iranian EFL learners in particular. Recent second language educators have proposed two crucial perspectives for teaching collocations: the corpus-based view and the traditional methods. This study examined the mixed effects of explicit instruction, collaborative output, pushed output, corrective feedback, and visual input enhancement through a set of corpus-based instructional materials for the learning of English collocations. Using a quasi-experimental research design, the data were obtained through a pretest, a posttest, and a delayed posttest. Participants included 125 intermediate EFL students, who were assigned to 4 experimental (E1, E2, E3, and E4) groups and 1 control group (n = 25 for each group). Fifty collocations were selected as the teaching materials in both control and experimental groups. In experimental groups, the collocations were taught through a series of corpus-based materials, and the control group through a conventional method. The collected data were analysed through One-way ANOVA and some post hoc Scheffé tests. Results indicated that all the combined procedures had positive effects on the learning of the English collocations. Also, the results showed that all the experimental groups could retain their collocational knowledge. The final conclusion led us to the idea that the input-output and corpus-based instructions were the learners' strategies in solving the problem of understanding the collocations. The results may also have some pedagogical implications for ESL/EFL practitioners. The input-based and output-based instructions can help second language instructors in using innovative techniques to improve their learners' knowledge of collocations.

Keywords: Corpus-Based Instruction, Input/Output Instruction, English Collocations

Cite this article: Oveidi, M., Sepehri, M., & Shafiee, S. (2022). Differential Effects of Input/Output Tasks on Learning English Collocations by Iranian EFL Learners Through the Corpus-Based Instruction. *Journal of Modern Research in English Language Studies, 9*(4), 143-168.

DOI: 10.30479/jmrels.2022.17054.2040

1. Introduction

In recent years, Focus on Form Instruction (FFI) has shown substantial contributions to L2 learning procedures in general and in developing L2 learners' awareness in particular (Chan & Li, 2002). FFI consists of an array of techniques, including error treatment (implicit corrective feedback [ICF]), explicit corrective feedback (ECF), visual input enhancement (VIE), enriched input (EI), and pushed output (PO). Ellis (2012) defines FFI as "instruction which describes any designed or unexpected educational task that is supposed to direct students to focus on linguistic form" (p. 271). Moreover, input-output based instructions have been arguable issues in L2 teaching in recent years (Gholami & Farvardin, 2017; Malekshahi & Amini Harsini, 2017; Namaziandost et al., 2019). Furthermore, the role of input-based instruction compared to that of the output-based instruction in learning collocations should be examined thoroughly. These instructions can provide a better image of educational approaches in language learning. In the light of the current literature (e.g., Sonbul & El-Dakhs, 2020; Toomer & Elgort, 2019), collocation forms the broadest vocabulary structure that underlies all languages, clearly demonstrating their noticeable position.

In corpus-based studies of language learning and teaching, collocations have been examined in many studies in recent years (See for example, Eguchi & Kyle, 2020; Nguyen & Webb, 2017; Saito, 2020; and Tavakoli & Uchihara, 2020). Collocations have proven to be a significant constituent of L2 learners' linguistic competence, and many researchers have emphasized the significance of collocations in SLA theories (Hamed Mahvelati & Mukundan, 2012). Collocational competence permits native speakers to intuitively know which words can be combined to produce natural-sounding speech and which words cannot, whereas learners of English often fail to combine words naturally because they have less exposure to the L2 learned and just occasionally use it.

In recent years, teaching collocations has taken a prominent place in L2 teaching (Agah & Soori, 2015; Zaabalawi & Gould, 2017). Two crucial perspectives have been advocated for teaching collocations: the corpus-based view and the traditional methods. Instructors have created different activities for learning collocations due to the importance of collocations in L2 proficiency.

Following Sinclair (2003) who suggests that the corpus-based method can be a prominent educational strategy through which a substantial amount of information can be rapidly explored, Wu et al., (2010) contended that

computer concordancers can be used as effective learning tools in teaching collocations.

As indicated by O'Dell and McCarthy (2008), in an EFL learning context, collocations should be learned because they enable the learners to use English more naturally and accurately.

In the light of past research, the current study aimed to explore the Iranian EFL learners' collocational knowledge by using corpus-based materials. The motivation behind the current study was to find any (possible) relationship between the input-output and corpus-based instructions in teaching collocations. This may allow researchers to apply appropriate procedures in teaching and using collocations in EFL classes.

The idea of finding out any possible association between these two types of instruction, that is, input/output and corpus-based instruction, emerges from the shared theoretical bases supporting them. Input/output instruction focuses on linguistic forms (Ellis, 2012) which calls our attention to teaching/learning language items at lexical, morphosyntactic and sentence levels. This is what corpus-based instruction has been founded on. Hunston (2002), a prominent figure in the field, introduces "corpus-based instruction" as a computer-based approach through which language learners are required to form generalizations. This is the case that the concept of induction and inductive learning calls our attentions, simply generalizing rules and patterns out of instances of occurrence (input).

In most of the corpus-based activities the learners are required to follow up two types of functions: 1) focusing on language items displayed in the concordance lines, 2) finding out language patterning and use by themselves. (Sepehri, 2015). The first one is rooted in Noticing Hypothesis (Schmidt, 1990) and Grammatical Consciousness Raising (Rutherford & Sharwood-Smith, 1988). The second function associates with learning processes such as Discovery Learning, and inductive learning as well as generalization. The basic underlying ideas in these theories is calling the learners' attention to language forms while being exposed to either the authentic instances of language or pedagogically-produced data.

2. Literature Review

2.1. Theoretical Considerations in Teaching Collocation

Collocation has been proven to be a significant component of language learners' linguistic knowledge. The importance of collocations in second language learning theories has been augmented by many researchers (Mahvelati & Mukundan, 2012). Collocational competence is emphasized as an important element in the communicative competence of native speakers. Therefore, collocational competence is an important factor in identifying

native speakers and foreign language learners. This is what Bazzaz and Samad (2011) and Saudin (2014) have declared regarding the importance of collocational competence. They assert that knowledge of collocations indicates the development of second / foreign language learning since it makes learners use collocations more at higher levels.

Because of the significance of learning collocations, as noted above, instructors and syllabus designers need to incorporate collocation into the English language teaching syllabus. This necessity has been recommended by many language educationalists (Altun, 2021; Gablasova et al., 2017; Hamed Mahvelati & Mukundan, 2012; Zaabalawi & Gould, 2017). Cao and Badger (2021) have called the second language learners' attention to the importance of developing collocational knowledge roughly similar to that of the native speakers. The need for integrating collocation into the language syllabus is similarly heightened by the common errors made by ESL/EFL learners when using collocation (Saudin, 2014).

Taking a precise look at the studies conducted on developing lexical knowledge of language learners, one can come to the fact that some researchers have examined the lexical characteristics of second language speech. Tavakoli and Uchihara (2020), for example, have examined fluency, Saito (2020) comprehensibility and Kyle and Crossley (2015) high proficiency. This reviewed literature indicates that in language learning assessment procedures, learning and using collocations are the two determining factors for evaluating vocabulary.

2.2. Previous Studies on Teaching Collocations in the EFL Contexts

In recent years, corpus-based instructional materials are being used more popularly in teaching collocations (See for example, Basal, 2019; Boulton & Cobb, 2017; Fakher Ajabshir, 2020; Gablasova et al., 2017; and Malmir & Yousof, 2019). Among vocabulary teaching techniques, Sinclair believed that corpus-based techniques of teaching collocations would be an enlightening contribution to vocabulary acquisition (as cited in Binkai, 2012). Binkai (2012) conducted an investigation to see if using a corpus-based model for vocabulary learning affects learners' autonomy of Chinese EFL students. The empirical study revealed that concordancing lines were very effective in understanding collocations.

Collocations have been getting close considerations in the last two decades. Much research has managed various issues identified with collocations in the EFL context. Although a bit of research has focused on the acquisition, learning, and production of collocations, others have highlighted collocations from the perspective of translation. There are many studies conducted on the issues around collocations and various methods of teaching

collocations in the Iranian EFL context. A few examinations, however, have attempted to apply different explicit activities for teaching second language general collocations (e.g., Fakher Ajabshir, 2020) and lexical collocations specifically (e.g., Naseri & Khodabandeh, 2019). Naserpour, et al.'s (2020) investigation revealed that tasks and activities that have higher involvement loads help the language learners improve their knowledge of collocations. Especially, a better result was obtained when the instructional tasks were output-oriented like sentence writing and short response instead of input-oriented such as multiple-choice activities.

In a more recent study, Shah, Singh, and Amreet (2020) believed that teaching and learning collocations is a widespread problem, and the lack of this knowledge has made it difficult for EFL learners to learn collocations. Moreover, the significance of collocations is beyond dispute but still, few numbers of similar research in the Iranian context justifies the study and reassures the language pedagogues. Overall, the role of corpus in teaching collocations is one of the main objectives of the recent study.

2.3. The Role of Input Enhancement

Input contributes greatly to second language acquisition. The point to be considered is that there is not a one-to-one correspondence between "input" (what is presented to the learners) and "intake" (what the learners comprehend and pick through active noticing). Another determining factor for learning is "*Attention*" which can mediate input and learning. "Manipulating texts in a manner to create salient syntactic chunks can be a way to positively influence the learning process of L2 students, and, subsequently, increase their syntactic awareness" (Park & Warschauer, 2016, p. 183). Various studies have found positive results in input enhancement in language learning.

The two techniques of typographic enhancement and glossing have been extensively investigated in learning colocations for the past 20 years (see for example, Choi, 2017; Winke, 2013). Toomer and Elgort (2019) reviewing several studies in this area, concluded that participants memorized collocations in a written input that has been enhanced typographically.

The current study, more specifically, tries to scrutinize the role of the corpus-based approach on learning collocations by examining the impacts of the mixed procedures of explicit instruction (EI), explicit corrective feedback (ECF), collaborated output (CO), implicit corrective feedback (ICF), visual input enhancement (VIE), and pushed output (PO).

In line with above reviewed literature, this study was carried out to answer the following questions:

1. Is there a significant difference between the effect of VIE plus EI and VIE plus PO plus CO on the learning of English collocations?
2. Is there a significant difference between the effect of VIE plus PO plus ICF and EI plus PO plus ECF on the learning of English collocations?
3. Are the (possible) effects of EI + PO + ECF, VIE + PO + ICF, VIE + PO + CO, and VIE + EI procedures on retaining the collocations through the corpus-based instruction?

3. Method

3.1. Design and Participants

The current study was a quasi-experimental study, with a pretest-treatment-posttest-delayed posttest design conducted on Iranian EFL intermediate learners. Through a simple random sampling, a total number of 200 male and female students, with an age range of 20-40, took part in an *Oxford Placement Test (OPT)* for the purpose of examining their homogeneity in terms of vocabulary and L2 proficiency. Those students whose scores range fell 1 SD above and below the mean i.e., 125, were selected. All of them studied in a medical college and were taking English courses as assigned to them by their curriculum requirements. There were one control group (n = 25) and four experimental ones. All experimental groups had similar patterns, but totally different teaching conditions. E1: EI + PO + ECF group (n = 25), E2: VIE + PO + CO group (n = 25), E3: VIE + PO + ICF group (n = 25), and E4: VIE + EI group (n = 25).

Table 1

Demographic Background of the Participants

No. of Students	125
Gender	63 Females & 62 Males
Native Language	Persian
Proficiency level	Intermediate
College	Medical College

3.2. Materials and Instruments

A variety of instructional and testing materials (the OPT, a pretest, a posttest, and a delayed posttest) were utilized in the current study. A description of each of these materials is provided in order.

3.2.1. The Oxford Placement Test (OPT)

The Oxford Placement Test (OPT) is a standardized test from Oxford University Press. This test is designed to offer a brief, precise estimation of test-takers' English language ability on the CEFR scale. The OPT included 60 items (10 multiple-choice and true-false reading, 10 writing, and 40 multiple-choice language use questions). After administrating the test, the scores were obtained based on the rating scale introduced for the OPT. The participants who scored 70 or more were considered as intermediate learners.

3.2.2. Treatment Materials

The second type of materials developed particularly for this study was a collection of collocational combinations. The target collocations were selected based on the decision made by a panel of experts. They had to create a list of the most common collocational errors made by the Iranian intermediate learners. The data regarding these collocational errors was collected from the first researcher's own classes. Therefore, a total number of 50 of the most common collocational errors were selected as the target items. Twenty-five were adjective-noun collocations (e.g., deep aversion). The other twenty-five target items were verb-noun collocations consisting of frequent verbs such as *have, give, make, take,* and *hold,* as well as infrequent nouns like *banquet*.

3.2.3. Testing Materials

Three parallel tests containing fill-in-the-blanks and jumbled sentences were developed before and after the investigation (i.e., the pretest, the posttest, and the delayed posttest). The source of the test items was *English Collocations in Use* (O'Dell & McCarthy, 2005). Each test comprises 20 items, incorporating 10 fill-in-the-blanks and 10 jumbled sentences. One point was given to every correct response. The participants had to reply to the test in a time limit of 20 minutes.

3.2.4. Pretest and Posttest

A 100-item collocation test, prepared from the contents and materials in *English Collocations in Use* (O'Dell & McCarthy, 2005), functioning as the pretest was administered to test the participants' knowledge of collocations. All the test items were in the multiple-choice format.

The purpose of the posttest was to measure the participants' achievement after the treatment. About 3 weeks after the posttest, the participants took the delayed posttest, whose purpose was to examine which technique best promoted retaining of the focused forms to the results. The format and content of the three tests were the same, but the questions were different. The reliability of the three tests (measured through *KR*-21) were

0.83, 0.81, and 0.78, respectively. The content and face validity of the tests was confirmed by two English language teaching experts.

3.2.5 Pilot Study

To evaluate the collocation tests, 25 learners were considered for the pilot study. The knowledge of collocations was measured by pre-test and post-test before the real administration. Based on the results, three items in the pre-test and five items in the post-test were modified after item analysis.

3.3. Procedure

3.3.1. Experimental Groups

The participants in E1 (i.e., the IE + PO + ICF group) and E3 (i.e., the VIE +PO+ CO group) were recommended to focus on the structures in boldface in the reading passages they received during their class activities. The second phase of the treatment for E1 was devoted to PO practice in that the participants were solicited to compose sentences from their own knowledge. Next, the instructor provided ICF on any erroneous use of the target features. ICF was operationalized as recast and reformulation. For instance, if the learner said, "*Ali go to the park last week*," the teacher replied, "*Ali went to the park last week? So did I*." Examples are given below each section.

IE + PO + ICF group:

First step (IE):

Mrs. Linde's behaviour in making decisions for her future is less shocking than Nora's sudden change of character primarily because of her appearance. She is a widow and makes clear her decision to find something to do in her opening discussion with Nora. They should have acted sooner, but made the wrong decision in choosing trade over annihilation

(Concordance lines for 'make a decision' (taken from the BAWE corpus)

Second step (PO): if the learner said, '*I make logical decision last night'.*

Third step (ICF): the teacher replied, '*I made logical decision last night? Are you agree?'*

E2 was given EI on the employment of the collocations. The equivalent enhanced texts to which the participants in E1 were exposed were given to the participants in E2. A similar PO procedure was additionally applied for this group. Contrary to the first experimental group, E2 received ECF on their misuse of collocations.

VIE + PO + ECF group:

First step (VIE):

*Mrs. Linde's behaviour in **making decisions** for her future is less shocking than Nora's sudden change of character primarily because of her appearance. She is a widow and **makes** clear her **decision** to find something to do in her opening discussion with Nora. They should have acted sooner, but **made** the wrong **decision** in choosing trade over annihilation*

(Concordance lines for 'make a decision' (taken from the BAWE corpus)

Second step (PO): if the learner said, "*I make logical decision last night".*

Third step (ECF): the teacher replied, "*You should change 'make' to 'made' because you have used the past tense".*

For E3, FFI was performed as follows: The participants in E3 like those in E1 were recommended to contemplate on the forms given in boldface in the reading passages. Next, according to the VIE + PO + CO procedure, the participants were to collaboratively complete the task.

VIE + PO + CO group:

First step (VIE):

*Mrs. Linde's behaviour in **making decisions** for her future is less shocking than Nora's sudden change of character primarily because of her appearance. She is a widow and **makes** clear her **decision** to find something her opening discussion with Nora. They should have acted sooner, but **made** the wrong **decision** in choosing trade over annihilation*

Second and third step (PO+CO):

Mrs. Linde's behaviour in ---------- for her future is less shocking

than Nora's sudden change of character primarily because of her appearance. She is a widow and -------- clear her ---------- to find something to do in her opening discussion with Nora. They should have acted sooner, but -------- the wrong --------- in

choosing trade over annihilation

Concordance lines for 'make a decision' (taken from the BAWE corpus)

The students should complete the sentences.

In E4 (i.e., VIE + EI) condition, FFI was performed as follows: In the first phase of the instruction, identical typographically enhanced texts (i.e., VIE section) to which the participants in E2 were exposed and in which the target features were in a bold print were exploited throughout the instruction. Within the second section of the treatment, the participants were exposed to texts enriched with the targeted forms.

VIE + EI group:

(VIE+EI): 1. making decisions, 2. make decision, and 3. made decision

(VIE+EI): 1. making decisions, 2. make decision, and 3. made decision

1. *When **making** pricing **decision**, marketer should consider different steps from company strategy to price level.*
2. *At bottom, I think Lord Denning has **made** the right **decision** to act independently ignoring the duty test by considering the relationship in hand*
3. *Then he **made** the **decision** align with the company's capacity.*

(Concordance lines for 'make a decision' (taken from the BAWE corpus)

Corpus-Based Method of Instruction

Aston (2002) introduces three main areas in English language teaching for which authentic data can be used. The following three phases were the basic steps taken in designing of the workshop sessions, namely:

1. Introduction: Teaching corpora.
2. Exploitation: finding ways to learn collocations with concordancing software.
3. Transformation: learning collocations with corpus concordances.

Table 2
The Corpus-Based Collocation Instruction Scheme Based on A Weekly Basis

Systematization	Duration	Procedures
Introduction	Week 1	Introduction corpus, concordance, word sketch, BAWE
Exploitation	Week 2	BAWE search words
Exploitation	Week 3	BAWE- target head words and their collocates
Exploitation	Week 4	Concordance (examples of use in context)
Exploitation	Week 5	pattern-noticing activities with the most probable collocation hits from BAWE
Exploitation	Week 6	identification activities with the most probable collocation hits from BAWE
Exploitation	Week 7	fill-in-the-blanks activities with the most probable collocation hits from BAWE

Transformation	Week 8	Discussing the benefits of using corpus concordances for collocation search

Within the experimental groups, the first session was spent familiarizing the participants with the concept of collocations. In the next session, the participants were given a collection of sample sentences taken from the British Academic Written English (BAWE) corpus. They had to extract the meanings of the words within the following KWIC format (finding the meanings of the keywords, gap-filling activities, and syntactic features). The following subsections exemplify some types of activities used for finding out the meanings of the words and sentences through concordancing lines such as pattern-noticing activities, identification activities, and fill-in-the-blanks.

3.3.1.1. Finding the Meanings of the Words

In this exercise, L2 learners try to extract the meanings of the collocations with the help of other words and clues (see Figure 1):

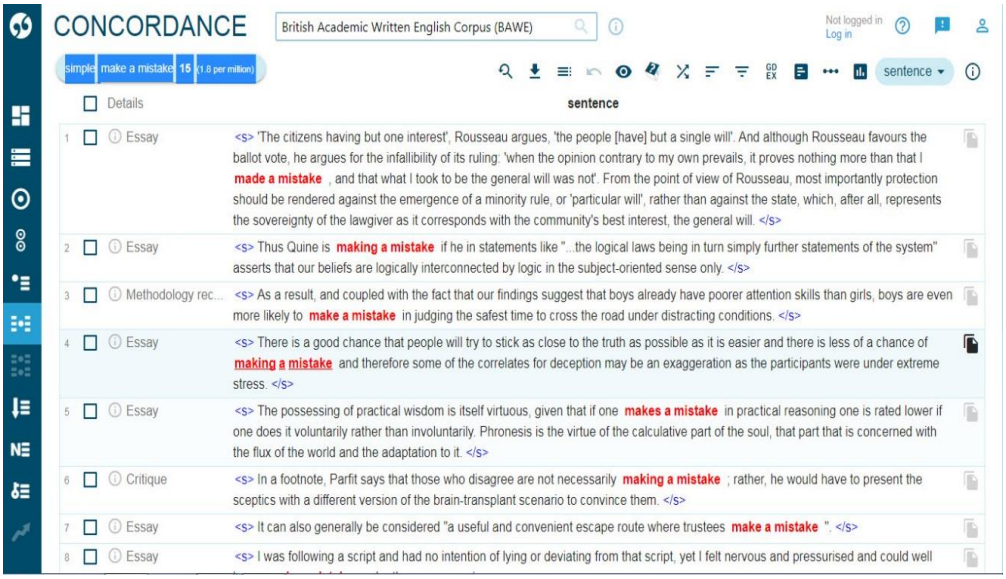
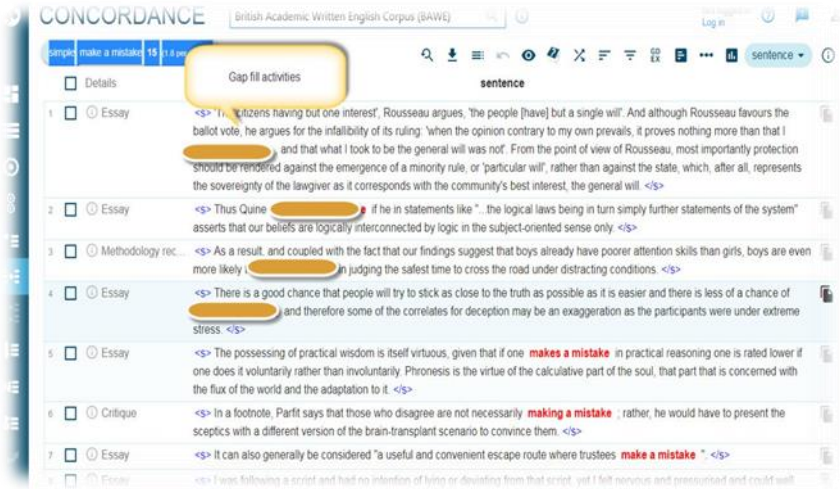


Figure 1
Concordance lines for 'make a mistake' (taken from the BAWE corpus)

3.3.1.2. Gap-Filling Activities

In this exercise, the focus is on finding the keywords. Therefore, a concordance output provides this exercise by deleting several keywords (see Figure 2):

Figure 2
Concordance lines for 'make a mistake'' (taken from the BAWE corpus)



3.3.1.3. Syntactic Features. In this exercise, the focus is on grammar rules and finding new patterns. Checking concordance lines helps L2 learners to find new grammar rules (see Figure 3):

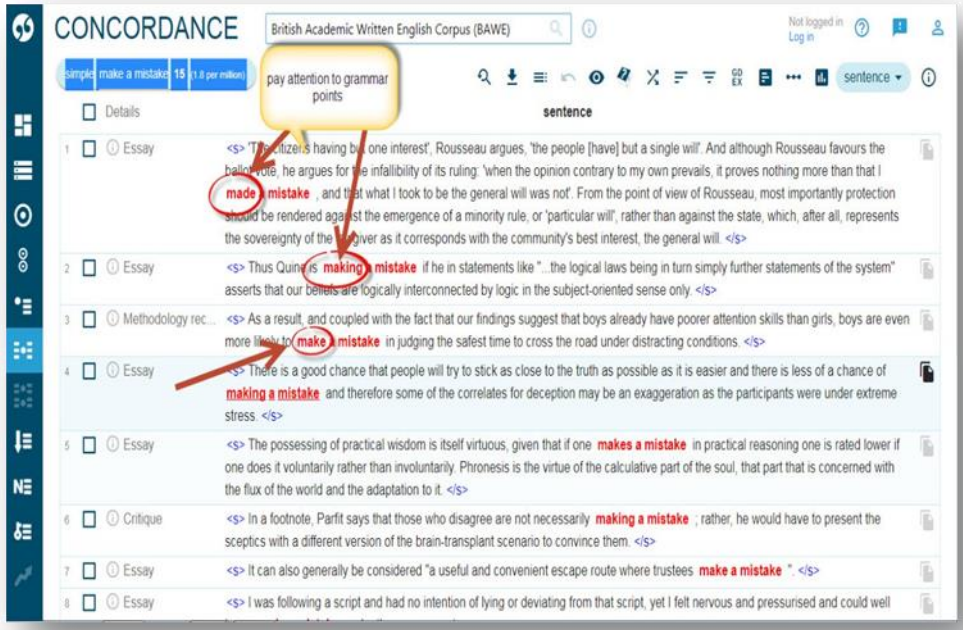


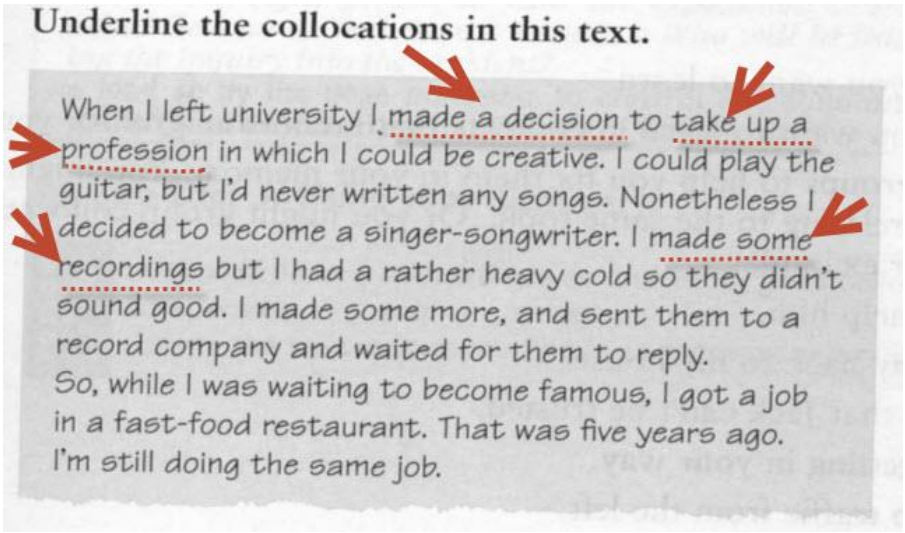
Figure 3
Concordance lines for 'make a mistake' (taken from the BAWE corpus)

3.3.2. Control Group

The traditional method was used for the control group. In this group, the same collocations were introduced through traditional treatment procedures. In this case, the researchers chose the technique of presentation through context. In this technique, the students working a mental process of guessing from examples can retain the word better and have information about the word's form and grammar (Thornbury, 2004). The meanings of the collocations were given using several activities such as multiple-choice, matching words, and correction activities. Similar to the experimental groups, this control group received nine 30-min sessions of instruction on the collocations. However, in this group, only the textbook was used and all the practicing examples and collocations were based on the textbook. The following stages were taken for teaching the collocations in this group: 1) the participants were asked to guess the meaning of the collocations through texts (see Figure 4). 2) The context was used to guide the participants. After five sessions, the researchers conducted the posttest to test the participants' collocational knowledge.

Figure 4

Collocations with 'make and take' chosen from English Collocations in Use (O'Dell & McCarthy, 2005)


Underline the collocations in this text.

When I left university I made a decision to take up a profession in which I could be creative. I could play the guitar, but I'd never written any songs. Nonetheless I decided to become a singer-songwriter. I made some recordings but I had a rather heavy cold so they didn't sound good. I made some more, and sent them to a record company and waited for them to reply.
So, while I was waiting to become famous, I got a job in a fast-food restaurant. That was five years ago. I'm still doing the same job.

4. Results and Discussion

For the purpose of answering the research questions a set of statistical procedures were conducted. First, a one-way ANOVA was used to determine if there were any significant differences between the means of the control and treatment groups on all the tests. In addition to the one-way ANOVA, a *Scheffé* post hoc test was used, the aim of which was to see which of the combined attention drawing procedures employed had greater positive impacts on the intake of the target items and, eventually, which technique

best promoted the retention of the focused forms to the results of the delayed posttest. Three proficient EFL instructors, using *KR*-21 formula checked the tests and piloted their reliability and validity.

4.1. Results of the Pretest, the Posttest, and the Delayed Posttest

Table 3
Results of Descriptive Statistics for Pretest Scores

					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
E1	25	9.92	4.966	.993	7.87	11.97	1	19
E2	25	7.96	4.860	.972	5.95	9.97	0	17
E3	25	9.84	4.200	.840	8.11	11.57	3	16
E4	25	10.04	3.974	.795	8.40	11.68	4	18
C	25	9.76	5.198	1.040	7.61	11.91	2	20
Total	125	9.50	4.654	.416	8.68	10.33	0	20

A pretest was run to ascertain that all the groups were homogeneous before they received any instruction. The obtained results are given in Tables 3 and 4. The mean scores for E1, E2, E3, E4, and the control group turned out to be 9.92, 7.96, 9.84, 10.04, and 9.76, respectively. With $F = .869$ and $p < 0.05$ ($p = .485$), it was concluded that the differences between the mean scores were not statistically significant (see Table 3):

Table 4
Results of ANOVA Analysis on the Pretest Scores

	Sum of Squares	*df*	Mean Square	*F*	*Sig.*
Between Groups	75.568	4	18.892	.869	.485
Within Groups	2609.680	120	21.747		
Total	2685.248	124			

A one-way ANOVA procedure was used to measure any (possible) between- and within-group variations regarding the participants' performance before they received any instruction (see Table 4). No significant difference between the groups ($p > 0.05$, $p = .485$) were observed.

According to the *Scheffé post hoc* test results in Table 5, all the groups were homogeneous regarding their knowledge of collocations before the instruction they received. That is, the observed differences among the mean scores of the groups were not statistically significant ($p > .05$).

Table 5
Results of Scheffé Post Hoc Test on the Pretest Scores

(I) Student	(J) Student	Mean Difference (I-J)	Std. Error	*Sig.*	95% Confidence Interval	
					Lower Bound	Upper Bound
E1	E2	1.960	1.319	.698	-2.17	6.09
	E3	.080	1.319	1.000	-4.05	4.21
	E4	-.120	1.319	1.000	-4.25	4.01
	C	.160	1.319	1.000	-3.97	4.29
E2	E1	-1.960	1.319	.698	-6.09	2.17
	E3	-1.880	1.319	.730	-6.01	2.25
	E4	-2.080	1.319	.648	-6.21	2.05
	C	-1.800	1.319	.761	-5.93	2.33
E3	E1	-.080	1.319	1.000	-4.21	4.05
	E2	1.880	1.319	.730	-2.25	6.01
	E4	-.200	1.319	1.000	-4.33	3.93
	C	.080	1.319	1.000	-4.05	4.21
E4	E1	.120	1.319	1.000	-4.01	4.25
	E2	2.080	1.319	.648	-2.05	6.21
	E3	.200	1.319	1.000	-3.93	4.33
	C	.280	1.319	1.000	-3.85	4.41
C	E1	-.160	1.319	1.000	-4.29	3.97
	E2	1.800	1.319	.761	-2.33	5.93
	E3	-.080	1.319	1.000	-4.21	4.05
	E4	-.280	1.319	1.000	-4.41	3.85

In order to account for any differential effect that the various types of instruction might have had on the participants' performance, an immediate posttest was run (see Table 6).

The results of the descriptive statistics on the scores of the immediate posttest are illustrated in Table 6. The observed mean scores were 18.24, 17.04, 16.60, 16.36, and 13.00 with the total mean score of 16.25. All the experimental groups indicated an increase in their mean values.

Table 6
Results of Descriptive Statistics on the Immediate Posttest Scores

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
E1	25	18.٢٤	١,٦٩٠	.3٣٨	17.54	18.94	15	20
E2	25	١٧,٠٤	١,٤٨٥	.297	16.43	17.65	15	20
E3	25	١٦,٦٠	١,٩٣٦	.387	15.80	17.40	13	20
E4	25	١٦,٣٦	٢,٣٠٧	.461	15.41	17.31	12	20
C	25	١٣,٠٠	٤,٢٠٣	.841	11.27	14.73	5	20

Total	125	١٦,٢٥	٣,٠٣٦٩	.272	15.71	16.79	5	20

The outcomes of another one-way ANOVA on the immediate posttest are displayed in Table 7. It clearly indicates that with an *F* value of 15.015 and *df* = 4 ($p < 0.05$, $p = .000$), the performances of the groups on the immediate posttest both between- and within-groups variations.

Table 7
Results of ANOVA Analysis on the Immediate Posttest Scores

	Sum of Squares	*df*	Mean Square	*F*	*Sig.*
Between Groups	382.032	4	95.508	15.015	.000
Within Groups	763.280	120	6.361		
Total	1145.312	124			

The *Scheffé post hoc* results showed that the experimental groups differ significantly in terms of mean scores. The experimental group assigned to the EI + PO + ECF procedure (E1) was better than the other two experimental groups (i.e., E2 and E3). Table 6 shows that the second more efficient mixed procedure proved to be VIE + PO + CO. Although the performance of E3 was much better than that of the control group, it turned out that, compared with the other two procedures, the effect of VIE + EI to which E3 was assigned was less beneficial on promoting the participants' interlanguage knowledge (see Table 8):

Table 8
Results of Scheffé Post Hoc on the Immediate Posttest Scores

		Mean Difference	Std.		95% Confidence Interval	
(I) Student	(J) Student	(I-J)	Error	*Sig.*	Lower Bound	Upper Bound
E1	E2	1.200	.713	.588	-1.03	3.43
	E3	1.640	.713	.266	-.59	3.87
	E4	1.880	.713	.146	-.35	4.11
	C	5.240*	.713	.000	3.01	7.47
E2	E1	-1.200	.713	.588	-3.43	1.03
	E3	.440	.713	.984	-1.79	2.67
	E4	.680	.713	.923	-1.55	2.91
	C	4.040*	.713	.000	1.81	6.27
E3	E1	-1.640	.713	.266	-3.87	.59
	E2	-.440	.713	.984	-2.67	1.79
	E4	.240	.713	.998	-1.99	2.47
	C	3.600*	.713	.000	1.37	5.83
E4	E1	-1.880	.713	.146	-4.11	.35
	E2	-.680	.713	.923	-2.91	1.55
	E3	-.240	.713	.998	-2.47	1.99
	C	3.360*	.713	.000	1.13	5.59
	E1	-5.240*	.713	.000	-7.47	-3.01

C	E2	-4.040*	.713	.000	-6.27	-1.81
	E3	-3.600*	.713	.000	-5.83	-1.37
	E4	-3.360*	.713	.000	-5.59	-1.13

*The mean difference is significant at the 0.05 level.

The purpose of the last question was to examine if the (possible) effects of the three mixed input-output mapping procedures on retaining of the target forms would be durable over time. To answer this question, a delayed posttest was performed 1 month after the participants had taken the immediate posttest (see Table 9):

Table 9
Results of Descriptive Statistics on the Delayed Posttest Scores

					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
E1	25	18.08	1.706	.341	17.38	18.78	15	20
E2	25	16.88	1.364	.273	16.32	17.44	15	19
E3	25	16.52	1.873	.375	15.75	17.29	13	20
E4	25	16.32	2.376	.475	15.34	17.30	11	20
C	25	12.80	3.969	.794	11.16	14.44	5	20
Total	125	16.12	2.983	.267	15.59	16.65	5	20

The results of the descriptive statistics performed on the scores gained from the delayed posttest are presented in Table 7. The scores of the control and treatment groups turned out to be 18.08, 16.88, 16.52, 16.32, and 12.80, with a total mean score of 16.12. The highest value of the mean score was for the experimental group assigned to the EI + PO + ECF condition, and the lowest value of the mean score was for the control group.

Table 10
Results of ANOVA Analysis on the Delayed Posttest Scores

	Sum of Squares	*df*	Mean Square	*F*	*Sig.*
Between Groups	391.040	4	97.760	16.473	.000
Within Groups	712.160	120	5.935		
Total	1103.200	124			

The ANOVA analyses displayed that the mean score of 12.80 for the control group was not significant. However, the results in Table 10 manifest a minor decline of the mean scores, which was the case for all the experimental groups. However, the loss was not statistically significant ($df = 4$, $p < 0.05$, $p = .000$). This leads us to accept the hypothesis that all the mixed attention drawing procedures exploited to attract the participants' attention to the collocations had lasting effects on the retention of the targeted elements,

although the rate of the durable effect was not the same for all the groups (EI + PO + ECF > VIE + PO + CO > > VIE + PO + ICF > VIE + EI).

Based on the *Scheffé post hoc* results given in Table 11, the four treatment groups outperformed the control group, and there were no significant differences between the mean scores of the first (i.e., E1) and second (i.e., E2) experimental groups ($p > 0.05$, $p = .554$). Also, it appeared that the difference between the mean scores of the third (i.e., E3) and fourth (i.e., E4) experimental groups was not significant. That is, with $p > 0.05$ ($p = .999$), the observed mean scores of the fourth experimental (i.e., E4) group did not appear to be significantly different from E1, E2, and E3 on the delayed posttest.

Table 11

Results of Scheffé Post Hoc Test for the Delayed Posttest Scores

(I) Student	(J) Student	Mean Difference (I-J)	Std. Error	*Sig.*	95% Confidence Interval Lower Bound	Upper Bound
E1	E2	1.200	.689	.554	-.96	3.36
	E3	1.560	.689	.281	-.60	3.72
	E4	1.760	.689	.171	-.40	3.92
	C	5.280*	.689	.000	3.12	7.44
E2	E1	-1.200	.689	.554	-3.36	.96
	E3	.360	.689	.991	-1.80	2.52
	E4	.560	.689	.956	-1.60	2.72
	C	4.080*	.689	.000	1.92	6.24
E3	E1	-1.560	.689	.281	-3.72	.60
	E2	-.360	.689	.991	-2.52	1.80
	E4	.200	.689	.999	-1.96	2.36
	C	3.720*	.689	.000	1.56	5.88
E4	E1	-1.760	.689	.171	-3.92	.40
	E2	-.560	.689	.956	-2.72	1.60
	E3	-.200	.689	.999	-2.36	1.96
	C	3.520*	.689	.000	1.36	5.68
C	E1	-5.280*	.689	.000	-7.44	-3.12
	E2	-4.080*	.689	.000	-6.24	-1.92
	E3	-3.720*	.689	.000	-5.88	-1.56
	E4	-3.520*	.689	.000	-5.68	-1.36

*The mean difference is significant at the 0.05 level.

4.2. Discussion

The role of input tasks (i.e., EI, VIE) and output tasks (i.e., PO, CO) on the learning of collocations through the corpus-based instruction were examined in the present study. In this case, the following questions were asked to examine the results.

4.2.1. The First Two Research Questions

Questions 1 and 2 addressed the (possible) differential impact of the four mixed procedures of (i.e., EI + PO + ECF), (i.e., VIE + PO + ICF), (i.e., VIE + EI), and (i.e., VIE + PO + CO). Regarding the effect of using several pedagogical techniques in FFI, Corbeil (2005) shows that a variety of FFI strategies can have a facilitative impact on L2 learning. Therefore, to be more precise, in terms of the differential effects of three mixed procedures, the group assigned to the EI + PO + ECF condition outscored all the other groups on the immediate posttest. The second effective procedure was VIE + PO + CO and the third was VIE + PO + ICF combination and, finally, the last one was IE + EI. Therefore, the outcome of all the experimental groups on the posttest improved. However, this improvement did not occur in the control group. To show the results, the four conditions are considered in this section.

In the first condition (i.e., EI + PO + ECF condition), there were several important factors for producing the output: The first factor was the use of EI because the participants had received more explanations. The second factor was ECF because this factor made the participants sensitive to output- generation and produced more accurate sentences. The outcomes obtained from this study are justifiable and similar to the ones from Hunt and Beglar (2005) who believed that implicit learning has a shorter effect than explicit instruction.

In the second condition (i.e., VIE+PO+CO), first factor that slowed down the learning process was the use of input enhancement because the participants had received fewer explanations about collocations. Therefore, in addition to the lower impact of input enhancement than EI, the results showed a positive and constructive role for this factor. The second factor that significantly increased the speed of the learning process was the use of collaborative output because, the participants helped each other to produce the output. Furthermore, the outcomes confirmed that teaching of collocations through corpus-based instruction via enhanced input was noticeably beneficial. The outcome of the current study is in contrast with Erturk (2013) who concluded that input enhancement did not result in the expected noticing of the target aspect in that research.

In the third condition (i.e., VIE + PO + ICF), improvement was observed in the experimental group. Compared to the previous conditions, the factors became more implicit, and this made the role of this condition more abstract. Therefore, the position of this combined procedure was after the first and second conditions. Such outcome is in harmony with the findings of other studies by Gholami and Farvardin (2017) and Naseri and Khodabandeh (2019) who confirmed that typographical/VIE supports L2 learners' collocational knowledge.

In the fourth condition (i.e., IE + EI), compared to the previous conditions, this combined procedure played a more implicit role. Also, the PO was removed, which made the participants less likely to benefit from this combined procedure and had less opportunity to provide conditions for the meaningful use of collocations. In more implicit forms of instruction, like VIE and EI, L2 learners themselves should discover the rules. The same idea is echoed by Ellis (1997), who argues that when compared to EI, in order to be effective, implicit learning is difficult and needs a longer time.

Based on the results obtained, the tasks that were used were able to improve the grammatical accuracy of the learners. These results support Long's (1991) claim that FFI is an effective approach to improving grammatical proficiency in the second language. There are also acceptable reasons explaining why these tasks have improved second language learners' grammatical accuracy in forms-based instruction. Therefore, performing a variety of input and collaborative output tasks contributed to development of the grammatical knowledge. Moreover, frequent uses of them in classroom sessions in both groups increased exposure to form-focused instruction and Input processing activities.

Nassaji and Tian (2010) conducted a study on learning phrasal verbs in English which was roughly similar to us and concluded that repeated task performance resulted in greater accuracy gains.

4.2.2. The Third Research Question

The results in response to the second question revealed that all the experimental groups managed to maintain their collocational knowledge, but this would not be the same in the different subgroups: (EI + PO + ECF > VIE+PO+CO > VIE+ PO + ICF > VIE + EI). This means that all types of mixed instructional procedures exploited had lasting effects on the intake of the collocations by the participants. Of course, the effects of instructional packages on learning forms reduced slightly from the first to the second posttest, but the loss was not statistically significant. The results of this study also revealed some kind of contrast with what Ellis (2003) found out. He maintained that the output-based instruction could better help learners in developing their productive knowledge of collocations in the long run.

Another issue was the superiority of concordancing to dictionaries and textbooks. The outcomes of the present study are consistent with Hulstijn and Laufer's (2001) *Involvement Load Hypothesis* in which they claim that the maintenance of unknown words relates to the involvement load of a task, that is, the amount of need, search, and evaluation it imposes.

5. Conclusion and Implications

5.1. Generalizations of the Study

The purpose of the current study was to explore the effect of performing FFI through the use of concordancing techniques on the development of collocational knowledge among Iranian EFL learners and to explore any significant effect on the achievement of the participants' collocational knowledge among various treatment conditions.

The consequences of this research are basically useful for EFL students who wish to increase their knowledge of collocations. The results might have some pedagogical implications for ESL/EFL practitioners, too: The input-output based instructions can assist L2 instructors to employ successful techniques to raise their learners' knowledge of collocations. One of the studies in line with the present one was conducted by Gholami and Farvardin (2017). They investigated the effects of the input-output based instructions on the Iranian EFL learners' productive knowledge of collocations. Based on the results, these instructions have significant effects on improving the recall of the second language collocations. Additionally, EFL/ESL teachers can make use of collocations more fruitfully through the use of FFI techniques.

Moreover, another effective tool that helped the input-output process in the current study was the use of the BAWE corpus. This corpus made it possible to use many different forms of collocations. This technique increased the depth of the participants' collocational knowledge. Furthermore, the present study can assist syllabus designers and instructors to consider seriously the importance of corpus-based materials in learning collocations. An important point to note, however, is considering the limitations of the study. The first one was the language proficiency of the participants and the second one was the sample size. The participants were the intermediate EFL learners studying in the medical college.

5.2. Suggestions for Further Research

L2 learners need to work together to find the correct forms of collocational combinations. This is done with the help of their teachers' experience. L2 teachers can provide conditions to make it easier to use collocations. So, they need to be aware of the methods that increase their students' knowledge of collocations. All scholars agree that L2 learners can acquire output by pushing their production during a language learning. PO could assist L2 learners in acquiring the linguistic items in question (Lee, 2002).

As far as sampling is concerned, it is suggested that other studies could be conducted on a wider range of participants regarding their language proficiency and academic background.

References

Agah, M., & Soori, A. (2015). Comparative study of collocation among the languages. *Language in India, 15*(1), 527-537.

Altun, H. (2021). The learning effect of corpora on strong and weak collocations: implications for corpus-based assessment of collocation competence. *International Journal of Assessment Tools in Education, 8*(3), 509-526. https://doi.org/10.21449/ijate.845051

Aston, G. (2000). Corpora and language teaching. In L. Burnard and T. McEnery (Eds), *Rethinking language pedagogy from a corpus perspective: Papers from the Third International Conference on Teaching and Language Corpora (*pp. 7-17). Peter Lang.

Basal, A. (2019). Learning collocations: Effects of online tools on teaching English adjective-noun collocations. *British Journal of Educational Technology*, *50*(1), 342-356. https://doi.org/10.1111/bjet.12562

Binkai, J. (2012). An empirical study on corpus-driven English vocabulary learning China. *English Language Teaching, 5*(4), 131-137. https://doi.org/10.5539/elt.v5n4p131

Bazzaz, F. E., & Samad, A. A. (2011). The Use of Verb Noun Collocations in Writing Stories among Iranian EFL Learners. *English Language Teaching*, *4*(3), 158-163.

Boulton, A., & Cobb, T. (2017). Corpus Use in Language Learning: A Meta-Analysis. *Language Learning*, *67*(2), 348-393. https://doi.org/10.1111/lang.12224

Corbeil, G. (2005). Effectiveness of focus-on-form instruction. *The Canadian Journal of Applied Linguistics, 8*(1), 27-46.

Cao, D., & Badger, R. (2021). Cross-linguistic influence on the use of L2 collocations: the case of Vietnamese learners. *Applied Linguistics Review*. https://doi.org/10.1515/applirev-2020-0035

Chan, A. Y. W., & Li, D. C. S. (2002). Form-focused remedial instruction: an empirical study. *International Journal of Applied Linguistics*, *12*(1), 24-53. https://doi.org/10.1111/1473-4192.00023

Choi, S. (2017). Processing and learning of enhanced English collocations: An eye movement study. *Language Teaching Research, 21*(3), 403–426. https://doi.org/10.1177/1362168816653271

Eguchi, M. & Kyle, K. (2020). Continuing to explore the multidimensional nature of lexical sophistication: The case of oral proficiency interviews. *The Modern Language Journal, 104*(2), 381–400.

Ellis, R. (1997). *SLA research and language teaching*. Oxford University Press.

Ellis, R. (2003). *Task-based language learning and teaching*. Oxford University Press.

Ellis, R. (2012). *Language teaching research and language pedagogy*. John Wiley & Sons.

Erturk, E. (2013). The impact of intellectual property policies on ethical attitudes toward Internet piracy. *Knowledge Management: An International Journal*, *12*(1), 101-109. https://doi.org/ 10.18848/2327-7998/cgp/v12i01/50790

Fakher Ajabshir, Z. (2020). Teaching second language collocations via concordances: The case of deductive and inductive approaches. *Journal of Foreign Language Research*, *10*(2), 362-375. doi: 10.22059/jflr.2020.303435.731

Gablasova, D., Brezina, V., & McEnery, T. (2017). Collocations in corpus- based language learning research: Identifying, comparing, and interpreting the evidence. *Language Learning*, *67*(S1), 155–179. doi:10.1111/lang.12225

Gholami, N., & Farvardin, M. T. (2017). Effects of input-based and output-based instructions on Iranian EFL learners' productive knowledge of collocations. *International Journal of Applied Linguistics and English Literature*, *6*(3), 123-130. https://doi.org/10.7575/aiac.ijalel.v.6n.3p.123

González Fernández, B., & Schmitt, N. (2015). How much collocation knowledge do L2 learners have? *ITL - International Journal of Applied Linguistics*, *166*(1), 94-126. https://doi.org/ 10.1075/itl.166.1.03fer

Hamed Mahvelati, E., & Mukundan, J. (2012). The effects of input flood and consciousness-raising approach on collocation knowledge development of language learners. *International Journal of Applied Linguistics & English Literature*, *1*(6), 182-192. https://doi.org/10.7575/ ijalel.v.1n.6p.182

Hulstijn, J. H., & Laufer, B. (2001). Some empirical evidence for the involvement load hypothesis in vocabulary acquisition. *Language Learning*, *51*(3), 539-558. https://doi.org/10.1111/0023-8333.00164

Hunston, S. (2002). *Corpora in applied linguistics*. Cambridge University Press.

Hunt, A., & Beglar, D. (2005). A framework for developing EFL reading vocabulary. *Reading in Foreign Language, 17*(1), 23-59.

Kyle, K., & Crossley, S. A. (2015). Automatically assessing lexical sophistication: Indices, tools, findings, and application. *TESOL Quarterly*, *49*(4), 757-786.

Lee, L. (2002). Synchronous online exchanges: A study of modification devices on nonnative discourse. *System*, *30*(3), 275-288. https://doi.org/10.1016/s0346-251x (02)00015-5

Long, M. H. (1991). Focus on form: A design feature in language teaching methodology. In K. de Bot, R. Ginsberg, & C. Kramsch (Eds.), *Foreign language research in cross-cultural perspective* (pp. 39-52). John Benjamins.

Malekshahi, N., & Amini Harsini, M. (2017). The effect of input-based and output-based tasks on the intermediate Iranian EFL learners' writing achievement in terms of coherent writing. *International Journal of Applied Linguistics & English Literature, 7*(1), 184–192. http://dx.doi.org/10.7575/aiac.ijalel.v.7n.1p.184

Malmir, A., & Yousof, Q. (2019). The integration of explicit instruction and implicit meaning-focused experience for L2 vocabulary development: The comparative effect of time sequence. *Journal of Teaching Language Skills, 37*(4), 71–108. DOI: 10.22099/jtls.2019.34651.2730

McCarthy, M., & O'Dell, F. (2005). *English collocations in use: How words work together for fluent and natural English: Self-study and classroom use*. Cambridge University Press.

Namaziandost, E., Dehkordi, E. S., & Shafiee, S. (2019). Comparing the effectiveness of input-based and output-based activities on productive knowledge of vocabulary among pre-intermediate EFL learners. *Asian-Pacific Journal of Second and Foreign Language Education, 4*(1), 1-14. https://doi.org/10.1186/s40862-019-0065-7

Nassaji, H., & Tian, J. (2010). Collaborative and individual output tasks and their effects on learning English phrasal verbs. *Language Teaching Research*, *14*(4), 397-419.

Naseri, E., & Khodabandeh, F. (2019). Comparing the impact of audiovisual input enhancement on collocation learning in traditional and mobile learning contexts. *Applied Research on English Language, 8*(3), 383-422.

Naserpour, A., Zarei, A., & Esfandiari, R. (2020). The effects of task orientation and involvement load on learning collocations. *Journal of*

Teaching Language Skills, 39(1), 71-114. doi: 10.22099/jtls.2020.37032.2809

Nguyen, T. M., & Webb, S. (2017). Examining second language receptive knowledge of collocation and factors that affect learning. *Language Teaching Research, 21*(3), 298-320. https://doi.org/ 10.1177/1362168816639619

O'Dell, F., & McCarthy, M. (2008). *English collocations in use*. Cambridge University Press.

Park, Y., & Warschauer, M. (2016). Syntactic enhancement and second language literacy: An experimental study. *Language Learning & Technology, 20*(3), 180-199. http://dx.doi.org/10125/44488

Rutherford, W., & Sharwood Smith, M. (1988). *Grammar and second language teaching*: *A Book of Readings*. Newbury House.

Saito, K. (2020). Multi-or single-word units? The role of collocation use in comprehensible and contextually appropriate second language speech. *Language Learning, 70*(2), 548-588.

Saudin, H. (2014). The realization of collocation in EFL students' written texts across three proficiency levels. In *the Proceedings of the 61st TEFLIN International Conference. Book* (Vol. 1, pp. 367-370).

Sepehri, M. (2015). *The effects of data-driven learning on Iranian EFL learners' writing skills development* (Doctoral dissertation, University of Birmingham).

Schmidt, R. W. (1990). The role of consciousness in second language Learning. *Applied Linguistics, 11*(2), 129-158. https://doi.org/10.1093/applin/11.2.129

Shah, M. I., Singh, K. S., & Amreet, K. (2020). Role of collocation in lexical behavior of foreign language learners: a corpus-based study of Pakistani English learners. *International Journal of Advanced Science and Technology, 29*(2), 1955-1963.

Sinclair, J. (2003). Corpora for lexicography. In P. V. Sterkenberg (Ed.), *A practical guide to lexicography* (pp. 167-179). John Benjamins. http://dx.doi.org/10.1075/tlrp.6.21sin

Sonbul, S., & El-Dakhs, D. (2020). Timed versus untimed recognition of L2 collocations: Does estimated proficiency modulate congruency effects? *Applied Psycholinguistics, 41*(5), 1197-1222. https://doi.org/10.1017/s014271642000051x

Tavakoli, P., & Uchihara, T. (2020). To what extent are multiword sequences associated with oral fluency? *Language Learning, 70*(2), 506-547.