

Scaffolding EFL learners' use of high CV and low CV collocations: Concordancing revisited

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Abstract

Collocations have the potential to differentiate native speakers from non-native ones clearly (Nation, 2001). Many studies have explored the effect of different teaching techniques on collocations in the context of concordancing. The present study investigated the influence of concordancing and scaffolding on Iranian intermediate English learners' use of high CV and low CV collocations. Three experimental groups received a 10-session treatment during which the participants had access to concordancing under symmetrical, asymmetrical, and no-scaffolding conditions. The control group, however, received neither concordancing nor scaffolding. Two parallel sets of story writing and paraphrasing tasks were given in the immediate and delayed posttests to measure the influence of the treatments. Results indicated that the experimental groups outperformed the control group significantly in producing high CV and low CV collocations. However, no statistically significant

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difference was observed between high CV and low CV collocations as a result of concordancing and scaffolding.

Keywords: collocations, concordancing, HCV collocations, LCV collocations, scaffolding

1. Introduction

Collocations are "the readily observable phenomenon whereby certain words co-occur in natural text with greater than random frequency" (Lewis, 1997, p. 8). Two synonymous words like *chance* and *probability* co-occur with different collocates. While the word *chance* is preceded by the adjective *good*, the word *probability* is preceded by *high*. The head part of the collocations is referred to as a *node* (e.g., *chance* or *probability*), and the word which occurs frequently with the node is called a *collocate* (e.g., *good* or *high*) (Sinclair, 1991).

Research studies have indicated that learners commit both lexical (e.g., Bahns & Eldaw, 1993; Nesselhauf, 2003; Siyanova & Schmitt, 2008) and grammatical (e.g., Cheng, 1993; Hassan Abadi, 2003; Hill, 1999) collocational errors. Implicit in these studies is the importance associated with teaching both lexical and grammatical collocations in one way or another in classroom settings. Benson, Benson, and Ilson (1997), for instance, hold that learning grammatical collocations is more demanding than that of lexical collocations; consequently, instructional methods have to be concerned with the former group of collocations more than the latter group. There are, however, researchers (e.g., Ceh, 2005; Le, 2010) who deemphasize the importance of teaching grammatical collocations arguing that there is no need for any intervention since they have a chance of being acquired as a result of mere exposure.

Seen from VanPatten's (1985) communicative value (CV) perspective, grammatical collocations need deeper attention to be noticed. VanPatten states that the elements of language which carry the features of +semantics and -redundancy enjoy high CV rendering these elements to be salient enough to be picked up and also retrieved easily. On the contrary, those elements that carry -

semantics and +redundancy features have low CV calling for more attention for being learned and retrieved. The underlying theory of CV is VanPatten's (1990) input processing model where he claims that attention is drawn to meaning, i.e., +semantics more easily than to form, i.e., semantics. Inspired by VanPatten's CV proposal, we suggest the terms high CV (HCV) collocations and low CV (LCV) collocations to refer to lexical and grammatical collocations, respectively. Placed in the context of the VanPatten's CV proposal, LCV collocations are predicted to call for more attention and intervention compared to HCV collocations. The present study intends to examine this prediction in the context of concordancing with and without scaffolding. More recently, a number of studies have shown the positive influence of concordancing on learning L2 collocations (e.g., Chambers & O'Sullivan, 2004; Chan & Liou, 2005; Fuentes, 2003; Sun & Wang, 2003).

Concordancing is data-driven electronic software which provides a vast number of authentic sentences in which collocations are embedded (Chan & Liou, 2005). In spite of the prominent role which concordancing plays in learning L2 collocations, some researchers (e.g., Sharma & Hannafin, 2007) complain about some shortcomings such as confusion and isolation on the part of L2 learners. Scheiter and Gerjets (2007) argue that learners should possess some skills like prior knowledge, intrinsic motivation, cognitive skills, and metacognitive skills to be able to take advantage of computer assisted language learning (CALL).

As Dignst, Buettner, & Langfeldt (2008) rightly point out, just a limited number of learners possess such skills to benefit from CALL efficiently. Such a concern can be traced in a number of studies (e.g., Jakobson, 2006) which acknowledge that learners do not always serve as active agents in CALL. To enhance learners' capacity in benefiting from a large pool of information which can be potentially provided in CALL and to avoid confusion and distraction, teachers should scaffold learners.

The term scaffolding, originally used by Vygotsky (1987), is defined as "a process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his or her unassisted efforts" (Wood, Bruner, & Ross, 1976, p. 90).

Scaffolding is divided into two main types: hard scaffolding and soft scaffolding (Simons & Klein, 2007). Hard scaffolding refers to any static support which is prepared a priori on the basis of predicting difficulties learners may encounter while performing the task. Soft scaffolding, however, relates to the dynamic support given to learners whenever they need it to accomplish the task. Several studies (e.g., Chang & Sun, 2009; Le, 2010) have applied hard scaffolding to moderate teaching L2 collocations in concordancing. Although soft scaffolding—symmetrical scaffolding (SS), i.e., peer-peer support, and asymmetrical scaffolding (AS), i.e., teacher-student support—appears to provide more dynamic and tailored feedback, it has not been exhaustively investigated in studies conducted to date. We intend to examine the effect of this type of scaffolding on learning HCV and LCV collocations in concordancing.

2. Literature Review

2.1 Concordancing

Concordancing is currently embraced by language teachers and researchers as one of the effective inductive ways of learning L2 collocations (e.g., Wu, Whitten, & Franken, 2010). A concordancer is defined as "a sophisticated computer retrieval program with a large amount of information in the form of computer language corpora accessible to encourage data-based inductive learning" (Chan & Liou, 2005: 233). Concordancers allow learners to search for a node and find it in an expanded context along with what precedes and follows the node. Possessing all the three components (i.e., *need*, *search*, and *evaluation*) of the involvement load hypothesis (ILH) (Laufer & Hulstijn, 2001), concordancing is argued to have the potential to accelerate learning and retrieval (Wu et al., 2010). Concordancing is likely to make learners write a collocate for a node (i.e., *need*), to urge learners to search the concordancer and find an appropriate collocate (i.e., *search*), and to make learners compare the provided collocates and choose the one which is the most appropriate (i.e., *evaluation*).

2.2 Scaffolding

The concept of scaffolding literally refers to a structure which is used for protecting and supporting a building while being constructed. As soon as the building is constructed, the temporary scaffold which is not needed anymore is removed (Gibbons, 2002). The term scaffolding is defined as "a metaphor in teaching and learning [which] describes a system of temporary guidance offered to the learner by the teacher, jointly coconstructed, and then removed when the learner no longer needs it" (Boblett, 2012, p. 1). Although the term has never been used by Vygotsky explicitly, it is rooted in Vygotsky's (1987) sociocultural theory and Zone of Proximal Development (ZPD). The ZPD refers to the distance between what a novice can do dependently with the support of an expert and what he or she can do independently without the support of the expert.

The notion of scaffolding originally included AS in L2 teaching and learning. Vygotsky (1987) acknowledges that an expert or a "more knowledgeable peer" should support a novice to perform a task which is beyond his/her current level of ability. He claims that cognitive processes are first formed at the social (intermental) level and are then internalized at the individual (intramental) level. Internalization "describes the developmental process whereby humans gain the capacity to perform complex cognitive and physical-motor functions with progressively decreasing reliance on overt external assistance, or mediation" (Thorne & Tasker, 2011, p. 490).

Unlike Vygotsky (1987) who is in favor of AS, Piaget (1926) advocates SS believing that cognitive development can be facilitated if there is "little cognition and social distance between peers" (Gauvain, 2001, p. 60). Supporting Piaget's approach, some researchers argue that SS can also foster L2 learning (e.g., Cowie & Van der Aalsvort, 2000). Ellis (1999), for instance, claims that when peers are involved in managing the discourse, they get more concerned with rich negotiation of meaning in comparison with a situation where a native language speaker or an expert is responsible for discourse control. When peers are involved in social

interaction, they scaffold each other and are pushed towards languaging (Swain, Lapkin, Knouzi, Suzuki, & Brooks, 2009). The term languaging "is the use of language to mediate cognitively demanding/complex activities (e.g., solving problems about language). Languaging includes explaining, reflecting on, describing, etc." (Swain & Suzuki, 2008, p. 565). In the present study an attempt is made to compare the differential impact of AS and SS on producing both HCV and LCV L2 collocations in the context of concordancing.

2.3 Collocations

Benson et al. (1997) divide collocations into two main types: lexical and grammatical. Lexical collocations which represent the go-togetherness of two content words include verb-noun (e.g., *put an emphasis*), adjective-noun (e.g., *heavy cold*), verb-adverb (e.g., *inspect thoroughly*), noun-noun (e.g., *a school of fish*), noun-verb (e.g., *the inclination arises*), adjective-adverb (e.g., *disappointed bitterly*), and adverb-adjective (e.g., *fairly exhausted*) collocations.

Grammatical collocations, also called colligation (Sinclair, 2004), relate to the go-togetherness of a content and a function word, in any order. They include preposition-noun (e.g., *at risk*), noun-preposition (e.g., *appetite for*), adjective-preposition (e.g., *harsh towards*), noun-to infinitive (e.g., *an evidence to show*), noun-that clause (e.g., *my opinion that*), adjective-to infinitive (e.g., *to be determined to go*), and adjective-that (e.g., *to be confident that*) collocations. Surprisingly enough, verb-preposition collocations (e.g., *protect against*) that are easily traced among collocational errors of L2 learners (e.g., Liu, 2002) have been overlooked in Benson et al.'s classification.

Miscollocations traced in L2 learners' production can be partially explained by Sinclair's (1991) *open-choice principle* or *idiom principle* dichotomy. The open-choice principle entails reliance on syntactic and semantic rules. Resorting to the idiom principle, however, "a language user has available to him or her a large number of semi-preconstructed phrases that constitute single choices, even though they might appear to be analyzable into segments" (p. 110). The building blocks of the open-choice

principle are words "combinable within grammatical constraints", and the building blocks of the idiom principle are prefabricated chunks and collocations (Moon, 2009, p. 24). Sinclair (1991) acknowledges that the default mode of production is the idiom principle which is switched to the open-choice mode when there is a reason. Non-native speakers, relying more on the open-choice principle, may make errors in producing L2 combinations and use miscollocations that are not natural. Our expectation is that if scaffolded in concordancing, learners may commit less HCV collocational errors than LCV ones.

2.4 Empirical Research on Collocations

To date different techniques such as explicit instruction (e.g., Fahim & Vaezi, 2011; Webb & Kagimoto, 2009) and implicit instruction (e.g., Durrant & Schmitt, 2010; Webb, Newton, & Chang, 2012) have been adopted for teaching collocations to L2 learners. Although they have demonstrated the positive role of both explicit and implicit instructions in learning L2 collocations, the design of their studies suffers from some shortcomings which threaten the external validity of their findings. They, for instance, failed to administer a delayed posttest to verify the positive influence of their findings. It seems unlikely to teach a limited number of collocations, either explicitly or implicitly, and expect their transfer to other collocations or real-life situations. Any transfer entails enough initial exposure without which effective learning would not be achieved (Bransford, Brown, & Cocking, 1999). Schmitt (2008) acknowledges that new words should be encountered at least 8-10 times so that they can be learned effectively. When it comes to collocations learning might be more challenging and learners may need more exposure since learners may give less attention to collocations because of their comprehensibility (Howarth, 1996).

To account for the problems of previous studies many researchers adopted inductive approaches to teach L2 collocations and demonstrated their positive role (e.g., Sun & Wang, 2003; Wu et al., 2010). Woolard (2000), however, stresses the marginal role of

teachers and teaching in learning L2 collocations. Needless to say, English classes should not address just a limited number of collocations rather a broad range of collocations have to be taught to L2 learners. Such a concern can be dealt with in the context of concordancing. Repeated exposure to collocations in concordancing as an effective inductive way of learning collocations can enhance the likelihood of their learning (Wu et al., 2010). Concordancing triggers iteration, "the opportunity to revisit the same territory again and again" and fosters L2 learning (Larsen-Freeman, 2013, p. 121).

2.4.1 Studies on HCV Collocations

A good number of studies have addressed the challenges learners usually face in producing HCV collocations (e.g., Bahns & Eldaw, 1993; Ebrahimi Bazzaz & Samad, 2011; Fan, 2009; Nesselhauf, 2003; Siyanova & Schmitt, 2008). Fan (2009) compared 60 Hong Kong and 60 British students' written production of HCV collocations. Both groups were asked to perform a picture description narrative task. Results indicated that British students used more types and tokens than Hong Kong learners who used fewer and restricted collocations. For example, native speakers used the adjectives *large*, *big*, and *deep* with the node *scar* while non-native speakers used only the adjective *long*. Needless to say, such adjectives are completely known to non-native speakers, though they failed to incorporate them in their own L2 production. Moreover, traces of L1 influence were found in Hong Kong speakers' production. Ebrahimi Bazzaz and Samad (2011) conducted a study on 27 Iranian PhD learners of English in Malaysia and found a positive correlation between learners' knowledge of verb-noun collocations and using those collocations in their L2 production.

Other studies, however, have attempted to explore the effect of teaching HCV collocations to L2 learners explicitly (e.g., Webb & Kagimoto, 2009), implicitly (e.g., Webb et al., 2012), and in the context of concordancing (e.g., Le, 2010; Wu et al., 2010). Le (2010), informed by Chang and Sun (2009), investigated the influence of concordancing and hard scaffolding on receptive HCV collocation of 20 Vietnamese learners of English. Le found the

positive influence of both concordancing and scaffolding on improving HCV collocations. The tests used in the study mentioned were intended to assess the learners' receptive knowledge only and left the productive knowledge untouched. Furthermore, the study explored only the influence of hard scaffolding and did not incorporate soft scaffolding.

2.4.2 Studies on LCV Collocations

A number of studies (e.g., Cheng, 1993; Hill, 1999) have found that LCV miscollocations i.e., collocations of preposition, are the main instance of undeveloped collocational competence. Delshad (1980) concluded that most of the miscollocations of prepositions in L2 production of Iranian EFL learners of English constitute misusing or omitting collocations. Hassan Abadi (2003) investigated Iranian university learners' knowledge of both HCV and LCV collocations using a multiple-choice test. He found that learners commit both HCV and LCV miscollocations.

In another study, Jafarpour and Koosha (2006) investigated teaching LCV collocations to EFL Iranian learners. A pretest, including 60 completion tests of collocations of prepositions, was given to all participants. They investigated 6 types of collocations of prepositions, adjective-preposition, preposition-noun, noun-preposition, verb-preposition, preposition-preposition, and idiomatic expressions.

The experimental group was exposed to collocations of prepositions through printouts of data-driven instruction, i.e., concordancing. The control group, however, was taught the same collocations through explicit instruction. After receiving the treatment for 15 sessions, all learners took a posttest (the same test as the pretest). Results indicated that the data-driven group outperformed the explicit instruction group.

However, when data-driven instruction is turned into printouts, the degree of discovery and problem-solving may change. Learners are more likely to use concordancing as a new educational tool in comparison with the same paper-based instruction. Jafarpour

and Koosha (2006) used the same test as both the pretest and the posttest without taking into account the possibility of test-effect. No delayed posttest was administered to make sure if the positive effect observed in the immediate posttest lasted.

Chang and Sun (2009) conducted a study in which they examined LCV collocations under the influence of concordancing and hard scaffolding, i.e., computer-based procedural, elaborative, and reflective prompts. They concluded that the experimental group, receiving scaffolding, outperformed the control group even when the prompts were removed. They failed, however, to capture the role of soft scaffolding, collaboration and negotiation of meaning, on written L2 collocations. The present study investigates the role of soft scaffolding in learning both HCV and LCV collocations in the context of concordancing. The following research questions were formulated for the current study:

1. Does concordancing improve HCV and LCV collocations of Iranian intermediate learners' written performance differently over time?
2. Does scaffolding improve HCV and LCV collocations of Iranian intermediate learners' written performance differently over time?

3. Method

3.1 Participants

For the present study 120 intermediate Iranian students learning English as a foreign language from Payame Noor University of Ardabil, Mohaghegh Ardabili University, and Gheshm Institute participated voluntarily. Their ranged in age from 20 to 27 and were bilingual in Azari Turkish and Persian. All in all, they had 7 or 8 years of experience in learning English either at school or university. Some of them had already attended some English Language Teaching Institutes for several years. All participants took a proficiency test and then a pretest. Based on the results of the proficiency test and the pretest, the participants were divided randomly into four groups: the SS group, the AS group, the NS group, and the control group.

3.2 Instruments

3.2.1 Targeted Collocations

For the present study a total of 270 collocations were selected. The nodes were chosen randomly but the choice of the collocates was dependent on their mutual information (MI). MI refers to the strength of association between a *node* and a *collocate* according to which it would be possible to determine the likelihood of their co-occurrence in different contexts either by chance or statistical significance (Church & Hank, 1990). MI ranges from zero (totally random co-occurrence) to around 17 (strongly associated co-occurrence). Attempts were made to choose the collocate with the highest MI for each node. Figure 1 shows the MI of some verb collocates for the node *advantage*. The collocate *take*, having the highest MI, was chosen to be presented to learners. The reference tool for measuring MI was Brigham Young-British National Corpus (BY-BNC), available at [/corpus.byu.edu/bnc/](http://corpus.byu.edu/bnc/). BYU-BNC has originally been designed by Oxford University Press in the 1980s and 1990s.

	CONTEXT	FREQ	ALL	%	MI
1	TAKE ADVANTAGE	1092	68871	1.59	9.72
2	TAKING ADVANTAGE	280	21394	1.31	9.44
3	TOOK ADVANTAGE	239	36771	0.65	8.43
4	TAKEN ADVANTAGE	118	34146	0.35	7.52
5	TAKES ADVANTAGE	39	11488	0.34	7.50
6	GAIN ADVANTAGE	4	5104	0.08	5.38
7	SEEK ADVANTAGE	3	5300	0.06	4.91
8	SEEKING ADVANTAGE	2	4558	0.04	4.54
9	CONFERRED ADVANTAGE	1	567	0.18	6.55
10	PERCEIVE ADVANTAGE	1	889	0.11	5.90

Figure 1: The MI of collocates of *advantage* in BYU-BNC

As shown in Table 1, the targeted collocations were classified into two main types, HCV collocations and LCV collocations. HCV

collocations were further categorized into three types, including verb-noun, adjective-noun, and noun-verb collocations. LCV collocations, however, were of four types including verb-preposition, preposition-noun, adjective-preposition, and noun-preposition collocations. The node in each collocation was filled by verb or noun categories but the collocate was filled by adjective, verb, or preposition categories.

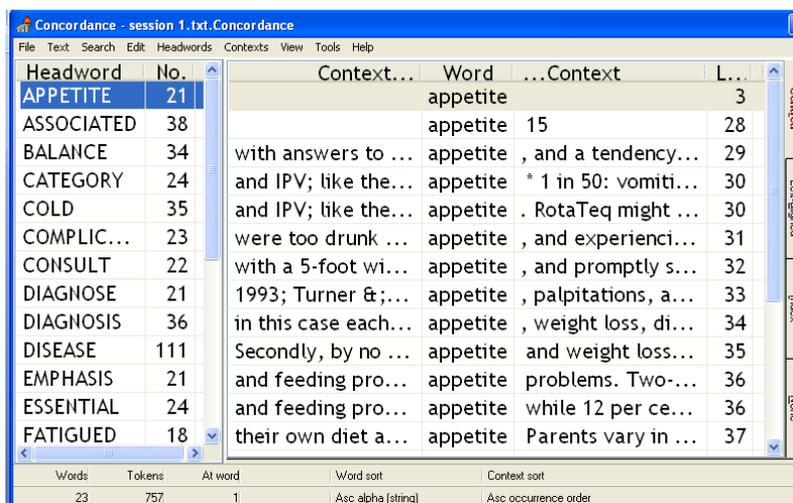
Table 1: *The list of the categories of the targeted collocations*

<i>HCV Collocations</i>	<i>Number of cases</i>	<i>LCV Collocations</i>	<i>Number of cases</i>
Verb-noun	60	Verb preposition	35
Adjective-noun	45	Preposition-noun	35
Noun-verb	30	Adjective-preposition	30
		Noun-preposition	35
Total	135	Total	135

3.2.2 *The Concordancer*

Concordance 3.3 (2009), powerful software used in 60 countries, was used in the present study as the reference tool. It is user-friendly software available at www.concordancesoftware.co.uk. The features of the software include counting words, making wordlists and word frequencies, and making fast concordance. The nodes of the collocations along with the examples within the expanded context served as the raw data.

The concordancer provided learners with 270 collocations in total. For each collocation 15 examples within the expanded context were extracted mainly from BY-BNC. In each session, learners had access to only 27 collocations (12 collocations of story writing tasks and 15 collocations of the paraphrasing task) in the concordancer. Figure 2 represents the screenshot of the concordancer which shows the list of nodes on the left hand under the *Headword*, and the concordance lines of each collocations on the right hand. The nodes were repeated under *Word*, and the phrases and sentences on the left or right of the node were given under *Context*.

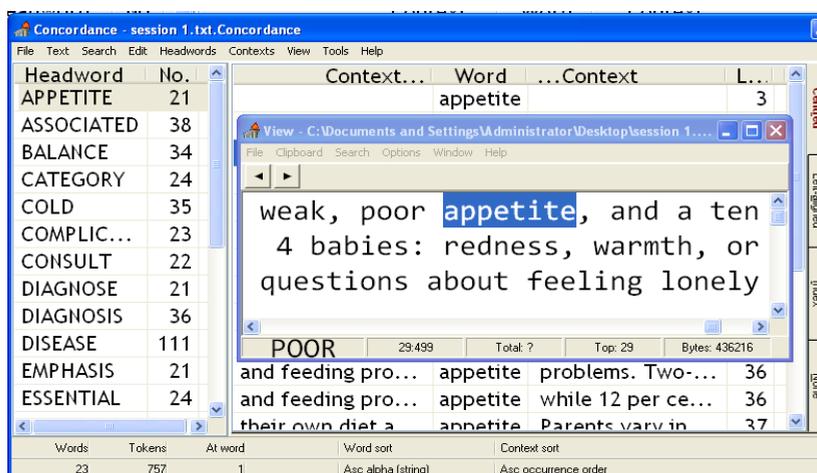


Headword	No.	Context...	Word	...Context	L...
APPETITE	21		appetite		3
ASSOCIATED	38		appetite	15	28
BALANCE	34	with answers to ...	appetite	, and a tendency...	29
CATEGORY	24	and IPV; like the...	appetite	* 1 in 50: vomiti...	30
COLD	35	and IPV; like the...	appetite	. RotaTeg might ...	30
COMPLIC...	23	were too drunk ...	appetite	, and experienci...	31
CONSULT	22	with a 5-foot wi...	appetite	, and promptly s...	32
DIAGNOSE	21	1993; Turner &;...	appetite	, palpitations, a...	33
DIAGNOSIS	36	in this case each...	appetite	, weight loss, di...	34
DISEASE	111	Secondly, by no ...	appetite	and weight loss...	35
EMPHASIS	21	and feeding pro...	appetite	problems. Two-...	36
ESSENTIAL	24	and feeding pro...	appetite	while 12 per ce...	36
FATIGUED	18	their own diet a...	appetite	Parents vary in ...	37

Words: 23 Tokens: 757 At word: 1 Word sort: Asc alpha (string) Context sort: Asc occurrence order

Figure 2: Screenshot of the list of nodes and concordance lines in the concordancer

Having access to the concordancer, learners were required to click on every node and then the concordance line. The node in question appeared within the blue shade in the expanded context to facilitate spotting the node easily in the context. Figure 3 provides the screenshot of the expanded context in the concordancer.



Headword	No.	Context...	Word	...Context	L...
APPETITE	21		appetite		3
ASSOCIATED	38				
BALANCE	34				
CATEGORY	24				
COLD	35				
COMPLIC...	23				
CONSULT	22				
DIAGNOSE	21				
DIAGNOSIS	36				
DISEASE	111				
EMPHASIS	21				
ESSENTIAL	24				

Expanded context for 'appetite':
 weak, poor appetite, and a ten
 4 babies: redness, warmth, or
 questions about feeling lonely

POOR 29.499 Total ? Top: 29 Bytes: 436216

and feeding pro... appetite problems. Two-... 36
 and feeding pro... appetite while 12 per ce... 36
 their own diet a... appetite Parents vary in 37

Words: 23 Tokens: 757 At word: 1 Word sort: Asc alpha (string) Context sort: Asc occurrence order

Figure 3: A screenshot of the expanded context in the concordance

3.2.3 Story Writing Tasks

All participants received 10 story writing tasks for 10 consecutive sessions. In each story writing task, learners were given a list of 12 related words followed by the type of collocation and Persian equivalent in parentheses to write a story about the given topic [e.g., cold (n): (adj-n سرما خوردگی شدید)]. Learners were required to embed *heavy cold*, in this case, in their stories. Attempts were made to include the node of both HCV and LCV collocations in the list of the given words.

3.2.4 Paraphrasing Tasks

Paraphrasing tasks included 10 authentic texts on the same topics of the story writing tasks. The pre-selected HCV and LCV collocations were embedded in the text. The node of each collocation was underlined and some pieces of information were given in the parentheses to direct learners to write a collocate for the given node. For example, the sentence *Today, there is a variety (تنوع زیاد) of traditional ornaments* was included in the text. Participants were required to rewrite the sentence as *Today, there is a wide variety of traditional ornaments*. Using Flesch-Kincaid English, available online at www.standards-schmandards.com, the text difficulty of the paraphrasing tasks was measured. The mean of ease score of all the texts was 48.9, a range appropriate for intermediate learners.

3.3. Procedure

In order to make sure about the homogeneity of learners, Cambridge Preliminary English Test (PET) was administered to all participants in the first session. Moreover, to ascertain that learners lacked the productive knowledge of L2 collocations in focus, they were given a productive task in the second session which served as the pretest. The productive task included a story writing and paraphrasing task. The pretest along with the treatment tasks were piloted in Tabriz prior to the study. The pilot study indicated that intermediate learners had very little knowledge of collocations, if any. All learners in the pilot study preferred to do the story writing

task before the paraphrasing one arguing that they had more freedom in story writing task.

On the basis of the results obtained from the proficiency test and the pretest, learners were then divided into four groups; the SS + the concordancer group ($n = 30$), the AS + the concordancer group ($n = 30$), the no-scaffolding (NS) + the concordancer group ($n = 30$), and the control group ($n = 30$). A one-way ANOVA run on the proficiency scores of groups involved demonstrated no statistically significant difference across them, $F(3, 116) = .32, p = .80$. One further one-way ANOVA was run to compare the results of the pretest of all groups. No statistically significant difference was observed for the productive task, $F(3, 116) = 1.10, p = .35$.

In the third session, all the experimental groups were briefed about collocations, their types, and why they are so important in L2 proficiency. They were told that even advanced learners might have some problems in their collocational competence; therefore, to achieve native-like proficiency, they had to develop collocational competence. They further were briefed about the concordancer of the study and the way they should benefit from it. The control group, however, did not receive these explanations. All groups were then required to complete a 'story writing activity' and a 'paraphrasing task' for 10 consecutive sessions under four different conditions.

The SS group was further divided into 10 sub-groups of three to work collaboratively. They completed the tasks individually first, and then searched the concordancer to find the correct collocations collaboratively. In the first two sessions of the treatment they were required to write one example for each collocation from the concordancer after clicking on at least 10 concordance lines. From session three on, however, they were required to write their own examples collaboratively after clicking on the concordance lines. By so doing, learners were pushed from imitation towards borrowing to accelerate learning (Prabhu, 1987). Learners were then supposed to review their common answer sheet collaboratively before leaving. Each session their answer sheets were collected to develop a portfolio.

The AS group, which was not divided into subgroups, followed the same procedure except for peer-interaction which was replaced by AS. A descending amount of scaffolding was provided for learners throughout the sessions. Upon accomplishing the tasks individually, learners were provided with AS to search the concordancer, write the examples for each collocation, and review them. The NS group followed the same procedure but did not have access to either SS or AS. They completed the tasks individually, and then searched the concordancer, wrote the examples, and reviewed them on their own. The control group, however, completed the tasks having access to neither the concordancer nor scaffolding. Since it was not ethical to waste their time for the sake of the present study, they were asked to participate in a speaking class where they discussed the main topic of each session in 1 hour and then the learners completed the tasks in half an hour. Learners were told that they would receive all the answers at the end of the study. In fact their motivation in participating in the extracurricular class was free discussion in English. The second researcher taught them some vocabulary items and idioms but no collocations.

In session 13, all the experimental groups were asked to review their portfolio (the SS group reviewed their common portfolio collaboratively). The next session, all the participating groups took the immediate posttest which contained a story writing task and a paraphrasing task parallel to those in the pretest. One month later the delayed posttest which included tasks parallel to the immediate one, was administered to all groups. The outline of the study is summarized in Figure 4.

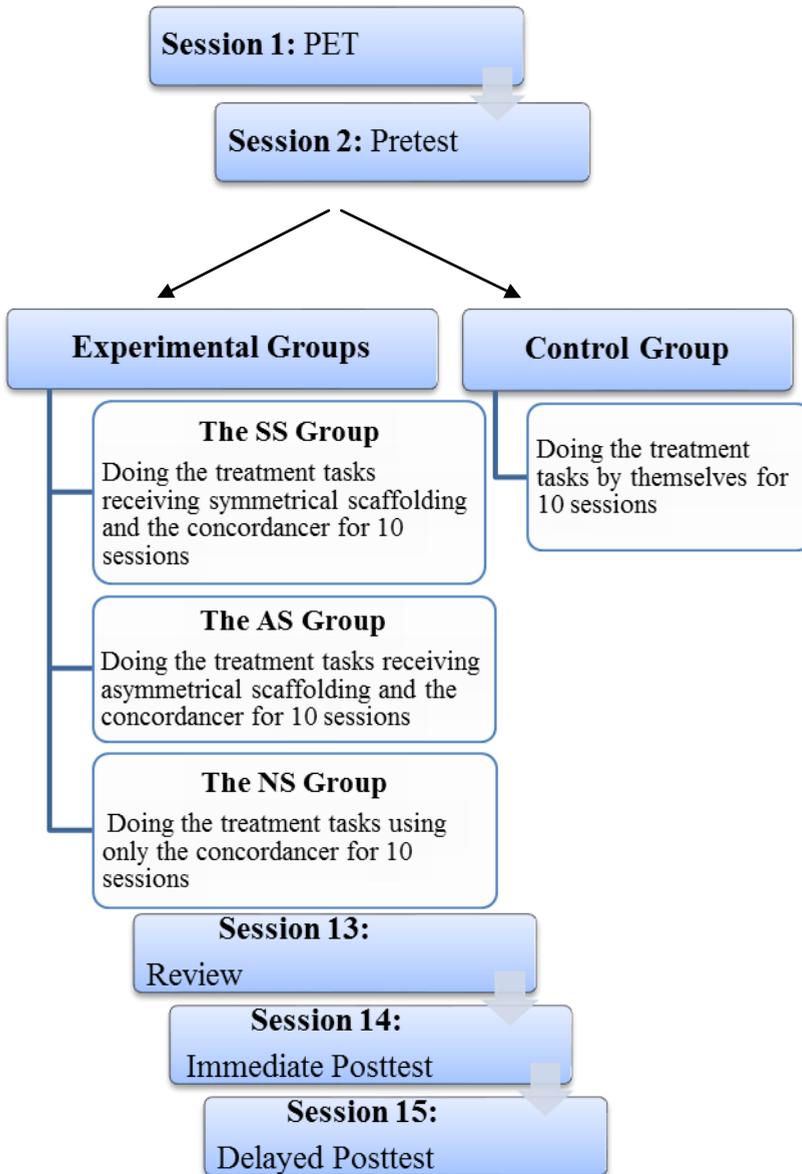


Figure 4: The outline of the study

4. Results

The results obtained showed that the mean of the AS group was higher than the mean of the other groups in producing HCV and LCV collocations both in the immediate and delayed posttests; the mean of the SS group appeared to be higher than the means of the NS group and the control group both in HCV and LCV collocations over time; the mean of the NS group in turn stood higher than the mean of the control group which came the last among all the groups involved (Table 2). The standing of the four groups vis-à-vis one another with respect to their means of performance on HCV and LCV collocations can be presented as follows: the AS group > the SS group > the NS group > the control group. A brief look at the means presented in Table 2 shows that none of the groups performed differently in terms of HCV and LCV collocations in the immediate and delayed posttests.

Table 2: Descriptive statistics of the four groups' performance

Group		Immediate Posttest			Delayed Posttest	
		N	Mean	SD	Mean	SD
HCV	Symmetrical	30	4.4	2.84	4.2	2.99
	Asymmetrical	30	5.4	2.87	5.3	2.72
	No-scaffolding	30	4.0	2.89	3.7	2.58
	Control	30	1.5	1.04	1.3	1.08
LCV	Symmetrical	30	4.8	2.99	3.8	3.38
	Asymmetrical	30	5.5	3.24	5.2	3.51
	No-scaffolding	30	4.6	3.55	4.2	3.31
	Control	30	.83	1.14	1.0	1.32

The data were placed into SPSS and a $4 \times 2 \times 2$ complex mixed design (one between-subjects variable, i.e., group and two within-subjects variables, i.e., time and CV) was run to compare the means of groups statistically. As indicated in Table 3, the interaction effect for time and group, $F(3, 116) = .98, p = .40$, CV and group, $F(3, 116) = 1.57, p = .199$, as well as time and CV, $F(1, 116) = 1.17, p = .28$, was not significant. The main effect for time was statistically significant, $F(1, 116) = 6.01, p < .05$; learners' performance regressed in the delayed posttest. The main effect for

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CV, however, was not statistically significant, $F(1, 116) = .00$, $p = .96$; learners improved HCV and LCV collocations similarly.

Table 3: *Multivariate tests of the productive task*

Effect		Value	F	H.df	Error df	Sig
Time	Wilks' Lambda	.95	6.01	1.00	116.0	.016
Time *Group	Wilks' Lambda	.97	.98	3.00	116.0	.404
CV	Wilks' Lambda	1.0	.00	1.00	116.0	.962
CV *Group	Wilks' Lambda	.96	1.57	3.00	116.0	.199
Time *CV	Wilks' Lambda	.99	1.17	1.00	116.0	.281
Time*CV*group	Wilks' Lambda	.93	2.50	3.00	116.0	.63

H. df = Hypothesis df

The main effect for between-subjects variable (Table 4) was statistically significant, $F(3, 116) = 16.2$, $p < .001$.

Table 4: *Tests of between-subjects effects of the productive task*

Source	Type III Sum of Squares	df	Mean Square	F	Sig
Intercept	6780	1	6680	284	.000
Group	1163	3	387.9	16.2	.000
Error	2764	116	23.8		

To locate the area of differences, a post hoc analysis (Bonferroni correction) was run. The difference between the experimental groups and the control group in producing HCV and LCV collocations was statistically significant both in the immediate and delayed posttests. No significant difference, however, was observed among the experimental groups between producing HCV and LCV collocations over time. The difference among the four groups' performance both in the immediate and delayed posttests are shown in Figure 5 and 6.

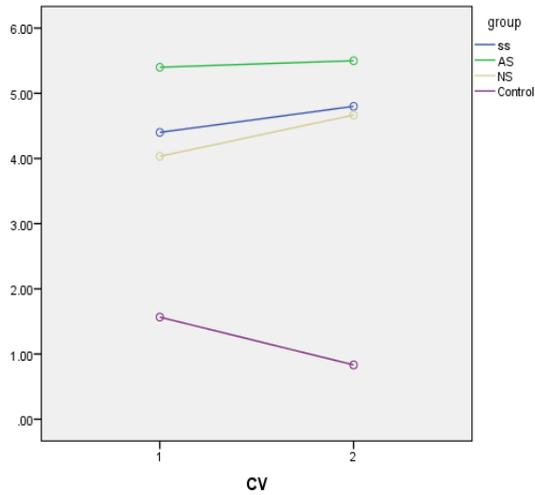


Figure 5: Mean differences of the four groups' performance in the immediate posttest

1 = HCV 2 = LCV

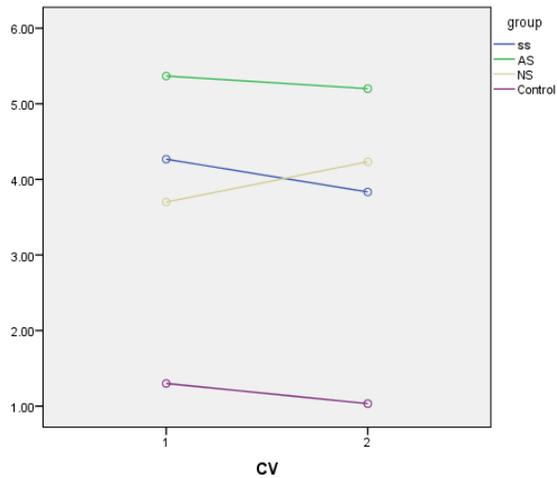


Figure 6: Mean differences of the four groups' performance in the delayed posttest

1 = HCV 2 = LCV

5. Discussion

Results obtained from the present study indicated that the experimental groups improved their written performance of both

HCV and LCV collocations significantly thanks to having access to concordancing and soft scaffolding; however, there was no statistically significant difference between HCV and LCV collocations. Results of the present study are in line with the study of Hassan Abadi (2003) which found a positive correlation between Iranian learners' production of lexical and grammatical collocations. Results, however, are contrary to the findings of some studies (e.g., Ceh, 2005) which demonstrated that LCV collocations can be acquired through exposure easily and there is no need for any intervention. Failure of learners in producing both HCV and LCV collocations in the pretest shows that LCV collocations cannot be acquired without some intervention.

It was also observed that HCV collocations did not improve statistically higher than LCV collocations as a result of benefiting from soft scaffolding and concordancing. This finding runs counter to VanPatten's (1985) model of CV which predicts that HCV elements can catch the attention of L2 learners better than LCV ones. In this study, LCV collocations, which possess –semantics and +redundancy features, came to improve to the same degree as HCV collocations which have +semantics and –redundancy features. Given the fact that learners improved their LCV collocations to the extent that they did their HCV collocations, it can be argued that the nature of concordancing and scaffolding moderated the results of the study in that LCV collocations improved as much as HCV collocations did. That is to say, since concordancing and soft scaffolding could engage learners in learning the targeted collocations the learners could be deeply involved in the learning process of both HCV and LCV collocations indiscriminately. This degree of involvement might have rendered LCV collocations as salient as HCV collocations.

The duration of the treatment can also partially explain the non-significant difference observed between HCV and LCV collocations scaffolded softly in the context of concordancing. To be more precise, we have to allude to the ceiling effect in language testing. Since the treatment lasted for 10 sessions, HCV collocations might have caught the learners' attention earlier than LCV collocations in early sessions of the treatment span. But after some

sessions, learners might have reached their optimum absorbing HCV collocations while they might have had enough capacity to absorb more LCV collocations in the remaining sessions of the treatment. Put differently, it is probable that HCV collocations caught learners' attention as a result of soft scaffolding provided by their peers and teacher in the context of concordancing at early sessions of the treatment, while LCV collocations lagged behind simply because they were not as salient as HCV ones and subsequently enjoyed less attraction. But as treatment sessions passed by, LCV collocations probably came to the attention of learners as a result of repeated exposures available through the teacher and peers in a learner-friendly concordancing context. This time, HCV collocations made no progress as they had already reached the saturation level but LCV collocations improved in the course of time. There might have been, of course, different patterns of findings, if the posttest had been administered in early sessions of the treatment.

Results of the current study are in line with those of Chang and Sun (2009) who reported the positive role of concordancing and scaffolding in learning LCV collocations. Concordancing seems to augment the involvement load of both HCV and LCV collocations equally urging learners to write a collocate, search for the collocate in the concordancer, and opt for an appropriate collocate for a given node from among a bundle of collocates provided. This line of argumentation is consistent with Laufer and Hulstijn's (2001) ILH which highlights the benefit of involvement with learning tasks exercise on the part of L2 learners.

Stated differently, since concordancing had the capacity to involve learners deeply in learning process during treatment sessions, learners could compensate for –semantics +redundancy features of LCV collocations and pick them up as much as they could HCV collocations which possess +semantics –redundancy features accounting for their saliency.

The equal improvement of both HCV and LCV collocations can also be related to the novelty of concordancing in the learners' perspectives. Through resorting to the novelty effect (Clark & Sugrue, 1988), it can be acknowledged that all the experimental groups found not only concordancing as a modern and interesting way of learning but also collocations as a new area of interest. As

the participants stated, it was their first experience of learning collocations, on the one hand, and using concordancing, on the other. Viewed from a different perspective, learners, in the present study, were all volunteers who showed keen interest in learning collocations. Therefore, even no-scaffolding group paid more attention to both HCV and LCV collocations and tried to keep them in their mind. Moreover, learners had enough exposure to collocations in the present study. They were asked to be exposed to at least 10 examples for each collocation, and write their own example for each on the answer sheet, which were likely to lead to more involvement and learning. They were also required to review collocations each session before leaving the class and review the whole collocations in session 13. It seems likely that the learners had enough exposure to collocation to learn them effectively.

6. Conclusion

The present study investigated the differential influence of concordancing and scaffolding on written performance of HCV and LCV collocations. To this end, 120 Iranian intermediate learners of English were randomly divided into four groups, i.e., the SS, AS, NS, and control groups. All the experimental groups had access to concordancing under three different conditions. The SS group received symmetrical scaffolding, the AS group received asymmetrical scaffolding, and the NS group received no scaffolding. The control group, however, received neither concordancing nor scaffolding. Results indicated that concordancing improved HCV and LCV collocations equally. And no significant difference was found between HCV and LCV collocations among the experimental groups while compared with the control group.

In light of the results obtained some pedagogical implications are in order. Syllabus designers and material developers are suggested to incorporate collocations into the syllabi of intermediate learners so that they can develop collocational competence along with other components of language.

Language teachers should not wait for the emergence of accurate collocations in the performance of learners. The findings

obtained from the pretest revealed that collocations cannot be acquired spontaneously as a result of exposure to the input. Therefore, an intervention is vital for facilitating noticing and acquisition of collocations (Schmidt, 1990). Although scaffolding did not improve learners' performance of L2 collocations significantly, the scaffolding groups outperformed the no-scaffolding group. Scaffolding should be applied by teachers to moderate learning collocations.

The results of the present study also lent weight to the suggestion that concordancing should offer both HCV and LCV collocations. Learners' failure in recognizing both HCV and LCV collocations in the pretest can be attributed to the lack of any previous instruction. Therefore, an intervention is essential for facilitating noticing and acquisition of both HCV and LCV collocations equally.

For further research, it is suggested to include more than one collocates for each collocation in the concordancer and ask learners to choose the one which best fits in the context of tasks along with SS and AS scaffolding. The present study exposed learners of each group to both HCV and LCV collocations at the same time. It is suggested to expose groups to either HCV or LCV collocations to compare their improvement.

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