Language Transfer in Chinese EFL Learners' Receptive Vocabulary Knowledge of Delexical and Lexical Verb+Noun Collocations

Gu Min[1,*], Hajar Abdul Rahim[1] & Ang Leng Hong[1]

[1]School of Humanities, Universiti Sains Malaysia, 11800, Pulau Pinang, Malaysia

*Correspondence: School of Humanities, Universiti Sains Malaysia, 11800, Pulau Pinang, Malaysia. Tel: 60-17-795-1169. E-mail: gumin@student.usm.my

Abstract

Restricted verb+noun collocations in English comprise delexical verb+noun collocations and lexical verb+noun collocations. The former are combinations containing verbs with 'light' meaning, such as *make a mistake, take pictures,* and *have dinner*, while lexical verb+noun collocations refer to combinations with technical meaning or figurative sense, such *as draw a conclusion* and *hold discussions*. Many studies have shown that these collocations are challenging to non-native English speakers, but to what extent and why one type is more challenging than the other has not received much research attention. The current study focuses on Chinese EFL learners' receptive knowledge of delexical and lexical verb+noun collocation, particularly in relation to the influence of their first language (L1). To address this, the study measured Chinese EFL learners' receptive knowledge of delexical and lexical verb+noun collocations using COLLEX5 collocation test and the extent to which their responses in the test were congruent or incongruent with their L1, i.e., Mandarin. The results show that Chinese EFL learners' receptive delexical verb+noun collocation knowledge is higher than their lexical ones. The results also show that 92.3% of delexical verb+noun collocation errors are congruent with Mandarin. L1 influence is also evident in lexical verb+noun collocation errors but to a lesser extent, i.e., 72.6%. These findings indicate that L1-influenced errors account for a significant portion of the errors, suggesting that EFL learners' L1 influences how L2 collocations are processed in the mental lexicon.

Keywords: delexical verb+noun collocation, lexical verb+noun collocation, restricted collocation, receptive collocation knowledge, L1 transfer

1. Introduction

Cowie (1991a, p. 102) defines restricted collocation as "word combinations in which one element (usually the verb) has a technical sense or a long established figurative sense which has since lost most of its analogical force". Howarth later describes these collocations as "combinations in which one component is used in its literal meaning, while the other is used in a specialized sense. The specialized meaning of one element can be figurative, delexical or in some way technical and is an important determinant of limited collocability at the other". More recently, Kuiper (2004) suggests that restricted collocations can be found in any type of speech. They can be described as follows: "pairs of words which occur together in ways that are more restrictive than the grammar of the language requires" (Kuiper, 2004, p. 51).

Restricted collocations are not interchangeable. For instance, Kuiper uses *give offence* and *take offence* as examples. Among native speakers of English, only *give or take offence* is considered acceptable. *Donate offence* and *accept offence* cannot be accepted collocationally. For non-native speakers, restricted verb-phrase collocation is a challenging combination, even at the advanced level (Altenberg & Granger, 2002; Howarth, 1998; Laufer & Waldman, 2011; Mutahar, 2021). In restricted collocations such as *draw a conclusion* and *make progress*, nouns can be used without restrictions in the sense they are used. However, verbs are arbitrarily restricted to certain nouns in a given sense to some extent (Howarth, 1998). Nesselhauf (2005) argues that the "verb is the main locus of collocational deviation…practicing collocations must primarily involve practicing the verb". In relation to this, Yang et al. (2020) found that ESL/EFL learners' errors in verb+noun collocations are verb-based. Therefore, verbs are

more challenging for learners to understand than nouns in collocation acquisition (Gentner, 2006; Nesselhauf, 2005; Sanguannam, 2016).

Verb+noun collocations are composed of three kinds of semantic manifestations of verbs, namely 'delexical', 'figurative', and 'technical' and they can be categorized into two types, delexical verb+noun collocations and lexical verb+noun collocations (Howarth, 1996, p. 47, 91). The figurative and technical verb+noun collocations belong to the lexical verb+noun collocations. Delexical verb+noun collocations have verbs with little meaning and are combined with additional noun expressions to form predicates. In *Lucy got a reply* for instance, the noun *reply* and the delexical verb *got* constitute the delexical construction, but the determiner is usually not part of the delexical verb construction because it is changeable. Delexical verbs are semantically weak, which is a key characteristic. In other words, the semantic content of delexical verbs "is 'light' (or has little lexical meaning), as opposed to 'heavy' (or lexically more specified), and much of the semantic content is obtained from its arguments" (Miyamoto, 2000, p. 12). Sinclair and Fox (1990, p. 147) claim that "when delexical verbs contain nouns as their object, it just indicates someone acts, not that someone causes or produces something".

Lexical verb+noun collocations, on the other hand, contain restricted meanings that contain a technical or figurative sense (Cowie, 1978), such *as cast a vote* and *catch a cold*. This type of collocation is characterized as a "term in which one component (usually the verb) has a technical meaning or a long-established figurative connotation that has lost most of its semantic meaning" (Cowie, 1991a, p. 102). Technical meaning refers to associative collocations, such as the use *cast* in *cast a vote*, meaning largely 'to vote'. Figurative meaning refers to words and phrases that combine literal meaning with an implied meaning to produce a certain effect, such as *catch a cold,* where *catch* does not carry one of its more literal meanings of 'seizing an object with one's hands'. In such lexical verb+noun collocations, the verbs lose their literal meaning and combine with the noun to form a collocation.

Studies on delexical and lexical verb+noun collocations show non-native English learners find both types challenging. Delexical verbs such as *have, make, take*, and *do* are semantically weak, making it difficult to choose the right verb to use in verb+noun collocations. Turkish English learners, for instance, frequently mix up these verbs, resulting in errors such as *do mistake* (instead of *make*), and *make research* (instead of *do*) (Kahraman & Subasi, 2022). Studies also suggest that the technical and figurative use of verbs, such as in the lexical verb+noun collocation *draw a conclusion,* can confuse learners (Hawarth, 1998; Ozen, 2019; Men, 2015).

In relation to the above, some researchers (Wu et al., 2010; El-Dakhs, 2015; Lee, 2016) found that when speakers are unsure about the collocations they want to use in a second language, they resort to using their L1 to understand and guess at the collocation in the L2, often ending up in awkward combinations. Researchers have found that L1 influences the mental lexicon of incorrect collocations (e.g., Biskup, 1992; Martelli, 2006; Liao, 2011), suggesting that learners' L1 influences how L2 collocations are processed.

Cowie (1998) analyzes deviant combinations from semantic parameters and verb restrictions, such *as make damage* for *do damage*, found in Chinese learners' verb+noun collocation use. Learners with limited English collocation knowledge may choose *make damage* instead of *do damage* since the former is consistent with Mandarin, indicating a negative transfer. The current study set out to unravel this issue further, by investigating Chinese EFL learners' receptive verb+noun collocation knowledge first, then analyzing whether the selected deviant items are congruent with Mandarin.

2. Delexical and Lexical Verbs in Verb+Noun Collocations

According to Zhang (1993, p. 13), collocations are commonly described as "conventionalized and prefabricated combinations of two or more words". Verb+noun is one of the lexical collocations that has received much research attention. According to Boers et al. (2014), verb+noun collocations like *make a mistake, take a break*, and *conduct a study* are the most popular collocation learning targets. Nesselhauf (2003) studied verb+noun collocations and found that advanced English learners face difficulty in generating collocations appropriately. It also found that the verb should be the most significant focus in collocation teaching. There is also evidence to suggest that learners know verbs and nouns separately (Gyllstad, 2007), but they struggle when the verb+noun collocation patterns they are learning do not exist in their L1 (Nesselhauf, 2003). This is because some verbs in collocations do not "have a lexical meaning of their own, but take their meaning from the words they collocate with" (McCarten, 2007, p. 5).

To illustrate the figurative use, in *surf the Internet* the verb *surf* is used figuratively. Unlike literal uses of language, figurative uses are not primarily intended to convey the original meaning. Figurative language is defined by Croft and Cruse (2004, p. 193) as "language use where...conventional constraints are deliberately infringed in the service

of communication", and its use is motivated by the speaker's belief that no literal use will yield similar results. It's not always easy to distinguish between literal and figurative language. Saeed (2003) points out that language change can result in meaning shifts, for instance, through metaphorical extensions. Using a mouse as the cursor control device on a computer is an example of metaphorical extension.

One example of a restricted lexical collocation with a technical meaning is *shrug one's shoulders*. The verb *shrug* has a very narrow meaning, so it cannot be combined with any other noun. Therefore, it is monosemous in this context. Collocations are considered technical rather than figurative not so much because of their semantics, but because of the way they are used in a particular register, according to Howarth (1996). Additionally, he states that "the verb should be chosen by the noun" (Howarth, 1996, p. 94). Fillmore et al. (2003), and Langer (2005) also recognize that nouns are the core elements of supporting verb constructions.

However, it is problematic that overlaps exist in some cases (Cowie, 1978). A verb may be technical and figurative, such as *raise interest rates*. It is considered "technical" and "figurative". Therefore, there are two kinds of collocations in this study: delexical verb+noun collocation and lexical verb+noun collocation.

3. L1 Transfer

Collocation acquisition studies show that a learner's L1 has a substantial influence on the acquisition of their second language collocations (e.g., Nesselhauf, 2003, 2005; Laufer & Waldmen, 2011; Ying, 2009; Men, 2018). Fan's (2009) study on Chinese secondary school leavers in Hong Kong found that they misuse collocations due to L1 transfer impacts. Based on a comparison between the Chinese learners' writing and that of British participants whose L1 is English, the study found that the former have difficulty in choosing '*face*' modifiers, including *left/right face, left half-face*, or *left side face*. They translated the word pairs from the L1 into their writing. They also underused collocating prepositions, such as '*around*' in wear around the neck. Instead, they preferred to use '*on*' similar to wear on the neck in Chinese.

According to Yamashita and Jiang (2010), congruency is "the degree to which the L2 word-for-word sequence is plausible in L1". In relation to this, EFL learners process collocations more efficiently in an L2 when there is a level of agreement between the collocations. The collocation *make trouble* for instance has translation equivalents in the Chinese language transferred word, which will facilitate similar collocation use in English.

Since L1-L2 congruency influences L2 learning, researchers (e.g., Zhang et. al., 2011; Wu et al., 2013) argue that the L1 lexical network is automatically and spontaneously activated during the L2 juxtaposition processing by analogy to the bilingual single-word meaning. The L1 patterns that were already stored in the L2 learner's memory may help them understand and accept congruent collocations of the L2 input. Incongruent combinations, on the other hand, are disadvantageous. Obukadeta (2019, p. 56) claims that "incongruency is the greatest cause of difficulty in L2 collocations… and that L1 negative transfer is the biggest source of L2 collocational errors." Chinese EFL learners for instance may choose to *talk a story* instead of *tell a story* because in the Chinese language, 'shuo' is the equivalent of the English words *say, talk,* and *tell*. Low proficiency level EFL learners, when faced with these choices, would have difficulty deciding on the correct collocate.

Research into the influence of the native language on the target language suggests that a person learns an L2 partly in terms of the kinds of meanings learned in their L1 (Eibensteiner, 2023; Jin, Zhang & Tao, 2023; Tipprachaban, 2023). Beebe (1988) suggests that, when learning a second language, L1 responses are grafted onto L2 responses, and combined to produce a common set of meaning responses. Fitzpatrick and Izura (2011, p. 373) found that there is a "significant priming effect from L1 translation equivalents of cues used in the L2 association task" indicating a semantic mediation effect on L1 word forms in bilingual speakers' L2s. A model of language transfer that demonstrates this is the Revised Hierarchical Model (RHM). As proposed by Kroll and Stewart in 1994, the uniqueness "of RHM is in capturing the developmental change in linking between L2 and L1 word forms and lexical concepts" (Pavlenko, 2009, p. 143). In other words, the model assumes that the L1 and the L2 have direct lexical links. Meaning can be accessed directly from the forms in the L1 and the L2. In Figure 1, it is shown that both concept association and word association models are incorporated into the RHM.
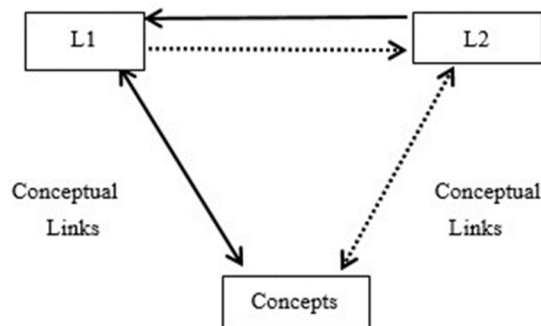
Figure 1. Revised Hierarchical Model (Kroll & Stewart, 1994)

A key assumption in RHM is that the links between the three stores, namely L1, L2, and concept, are interconnected with varying degrees of strength depending on translation direction. A learner's L1 lexicon is larger and more closely linked to concepts than their L2 lexicon, so translating L1 to L2 requires more conceptual processing than translating L2 to L1. RHM asserts that L1 words and meanings are closely connected. In this regard, "the RHM is a model of transfer" (Kroll et al., 1994). Additionally, the RHM acknowledges that word meanings can change as people acquire proficiency in their second language. In contrast, less proficient individuals prefer to acquire L2 words by translating L1 words. This model suggests that negative L1 transfer is the main cause of collocational errors in L2 (Laufer & Eliasson, 1993; Pavlenko, 2009; Pavlenko, 2010). Learners appear to translate "from L2 to L1 (backward translation) as an underlying asymmetry in the strength of the links between words and concepts in each of the bilingual's languages" (Kroll et al., 2010, p. 373). As a result, the activation of lexical links would fail in one language, causing unacceptable collocations to occur.

In this regard, RHM's view of language transfer can help explain the process of lexical meaning acquisition. Based on the model, L2 words have direct connections with their L1 counterparts. While concepts can be expressed in both L1 and L2 words, conceptual connections between concepts and L1 words are stronger (Kroll et al., 2002). Since L2 learners always use their L1 as a mediator when faced with the need to use L2 words, they try to find equivalent L2 words for the L1 words they already know. A dotted line represents the relationship between L2 words and concepts in Figure 1, while a solid line represents the relationship between concepts and L1 words. Linguistic links between concepts and L1 or L2 are bidirectional, meaning that the learner uses them both ways, but conceptual links only function in one direction. In Kroll's (2002) explanation, learners do not use their L2 this way, so there is no strong connection between them. Alternatively, the connection between the L2 and the L1 is crucial, especially if learners are just beginning to learn a second language. After all, conceptual links between L2 and concepts are weak. Therefore, negative L1 language transfer is mainly responsible for the incorrect collocation combination.

Given the above, RHM can be used to explain learners' errors in the current study. For example, the correct verb+noun collocation is *give a speech*, but Chinese EFL learners may choose *do a speech.* This response is the result of backward translation from the L2 to the L1. In Mandarin, the lexical equivalent of the English verb *give* in this combination is *do*, which makes it difficult for less proficient learners with poor knowledge of L2 word forms and lexical concepts to select the correct collocation.

4. Methodology

To investigate Chinese EFL learners' receptive delexical and lexical verb+noun collocation knowledge, two tests, namely the Updated Vocabulary Levels Test (UVLT) (Webb et al., 2017) and a collocation test known as the COLLEX5 test (Gyllstad, 2007), were employed in the study. The following sections describe the study materials and methods.

4.1 Instruments

The UVLT is an improved version of the Vocabulary Levels Test (VLT) developed by Nation in 1983 and Schmitt et al.'s (2001) VLT. It inherits a matching format from VLT and includes five frequency word levels (1,000, 2,000, 3,000, 4,000, and 5,000). It consists of 10 3-item clusters per vocabulary level, with 15 nouns, 9 verbs, and 6 adjectives per word level (Webb et al., 2017). In the current study, the results of learners' word level are essential, since learners' word level correlates with vocabulary receptive knowledge (e.g., Ma & Lin, 2015; Qian, 2002;

Schmitt, 1996).

The second instrument used in the study is COLLEX 5, developed by Gyllstad (2007). According to Gyllstad, "there is a relationship between vocabulary size, as measured in the UVLT, and receptive collocation, as measured in COLLEX" (2007, p. 239). The extent of this relationship can be demonstrated by the correlation between the UVLT and COLLEX 5, which is 0.90 in Gyllstad's (2007) findings.

COLLEX 5 test comprises 50 restricted verb+noun collocation items and each has three answer options. Of the 50 collocations, 18 are delexical and 32 are lexical, as shown in Table 1.

Table 1. Delexical and Lexical Verb+noun Collocation Items on COLLEX5

Delexical verb+noun collocation	Lexical verb+noun collocation	
1. pay a visit	1. size an opportunity	19. lose count
2. do a damage	2. draw a conclusion	20. speak one's mind
3. do harm	3. shed tears	21. spoil the fun
4. say a prayer	4. catch a cold	22. polish shoes
5. make apologies	5. strike a pose	23. serve a purpose
6. make friends	6. put out a fire	24. clench one's fist
7. make progress	7. exercise one's rights	25. blow a fuse
8. make sacrifices	8. hold discussion	26. talk shop
9. give birth	9. press charges	27. defeat a purpose
10. take measures	10. lodge a complaint	28. answer the door
11. pay heed	11. commit a crime	29. lose faith
12. give a speech	12. strike a deal	30. break a habit
13. go on a journey	13. conduct an orchestra	31. push a bike
14. take root	14. conduct a survey	32. walk the street
15. take one's revenge	15. gain access	
16. keep a diary	16. pass judgment	
17. keep a secret	17. drop bombs	
18. make an escape	18. hold one's breadth	

In the test, knowledge of each collocation is tested based on three options, one correct and two incorrect, as in the item *make friends* given below:

<div align="center">a. make friends   b. gain friends   c. create friends</div>

For each question, the noun remains the same, but the verbs are different, as shown in example 1. The verb "is used in a figurative, delexical, or technical sense" (Gyllstad, 2007, p. 287). Verbs and nouns are chosen within the same frequency band or higher frequency bands. When paired with a verb from category 2000 or 1000, a noun from category 2000 (the second 1,000 common terms) is less likely to be understood by the student without understanding the verb. This example illustrates the difference between terms that increase in frequency and those that decrease. And a large percentage of verbs and nouns are in the 1000-3000 range. Therefore, it is assumed that advanced learners know these words and their literal meanings well.

4.2 Participants

The participants of the current study are Chinese EFL students from Leshan Normal University in China. Their L1 is Mandarin and English is learned as a foreign language. Aged between 18 to 22 years old, the participants had formal English language learning for approximately 9-12 years. The majority of them passed the College English Test (CET) with a band 4 or 6. This means that they have reached the required English levels specified in the National College English Teaching Syllabus (NCETS) in China, and possess knowledge of at least 4,500 words.

According to some empirical studies on English vocabulary (Anna, 2015; Gall et al., 1996; Khan & Liu, 2020), the number of participants should be between 20 to 50. "Having a large number of participants reduces the risk of accidentally having extreme or biased" (Martínez-Mesa et al., 2014, p. 612). Based on Gyllstad's (2007) study, students are qualified to take COLLEX 5 test if their 1K to 3K vocabulary knowledge is above the average score of

26. In the current study, 32 participants who scored 26 from the 1000 to 3000 level sat for the COLLEX 5 test.

4.3 Data Coding

The UVLT consists of multiple-choice questions with correct or incorrect answers (Laufer, 2010). For example, a learner who scores 30.0 on 1K, 29.5 on 2K, 29.2 on 3K, 10.0 on 4K, and 4.0 on 5K, would be eligible for COLLEX 5 test as the mean score for 1K-3K is higher than the benchmark score of 26.

COLLEX 5 measures learners' receptive knowledge of the verb+noun collocation. In coding the responses, correct responses were scored 1, and incorrect ones were scored 0. The total receptive knowledge measurement for each participant was based on the percentage of correct answers. For example, a learner who answers 12 delexical and 18 lexical verb+noun collocations correctly would score 66.66% and 56.25%, respectively.

4.4 Data Analysis

A paired sample T-test was used to analyze the UVLT results quantitatively. The results of COLLEX 5, as explained earlier, were first analyzed using descriptive statistics to find out the percentage of correct and incorrect responses for each item. The second level of analysis involves a qualitative analysis of the incorrect responses made by Chinese EFL learners based on RHM. This is to find out whether they are congruent or incongruent with Mandarin. If a word-to-word translation between the incorrect response and Mandarin exists, it was classified as "Congruent with Mandarin", and where there is no word-to-word translation, the incorrect response was classified as "Incongruent with Mandarin", as exemplified in Table 2.

Table 2. Sample Data Analysis of the Incorrect Response

Deviant verb+noun collocation	Analysis based on RHM
do a visit	The Mandarin equivalent of 'do' is '*zuo* (to do/make),' and 'a visit' is '*fang wen.*' This collocation *zuo* (to do/make) *and fang wen* (a visit) represented by '*zuo fang wen*', is congruent with Mandarin. Therefore, this delexical verb+noun collocation's error type is congruent with Mandarin.
Drop count	The Mandarin equivalent of 'drop' is '*luo xia* (to fall),' and 'count' is '*shu shu.*' This collocation *luo xia* (to fall) *and shu shu* (count) represented by '*luo xia shu shu*', is incongruent with Mandarin. Therefore, this lexical verb+noun collocation error type is incongruent with Mandarin.

5. Result

The results of the 32 participants' performance on COLLEX 5 test are presented. These results begin with the statistical analysis of their knowledge of two types of verb+noun collocation. Firstly, Tables 3 and 4 present the mean scores and the difference between delexical and lexical verb+noun collocation on COLLEX 5. In Tables 6 and 7, the mean percentage of correct answers and error pattern(s) are shown.

Table 3. Results of the Mean Score between Delexical and Lexical Verb+Noun Collocation on COLLEX 5

	Mean	N	Std. Deviation	Std. Error Mean
Delexical verb+noun items	0.71531	32	0.105240	0.018604
Lexical verb+noun items	0.37906	32	0.066282	0.011717

As shown in Table 3, among the 32 participants, the mean values for delexical and lexical verb+noun collocations are 71.53% and 37.91%, respectively. To test the significance in the difference between these two values, a Paired Samples T-Test was carried out. The results are presented in Table 4.

The result of the Paired Samples T-Test shows a significant difference between the scores of delexical (mean=0.72, SD=0.11) and lexical (mean=0.38, SD=0.07) verb+noun collocation items (t=17.312; df=31; p-value=0.000). These results suggest that the participants of the study individually had higher level of receptive delexical verb+noun collocation knowledge compared to lexical verb+noun collocation.

Table 4. Results of Paired Samples T-Test of Delexical and Lexical Verb+Noun Collocation Mean Scores

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Delexical verb+noun items – Lexical verb+noun items	0.336250	0.109874	0.019423	0.296636	0.375864	17.312	31	0.000

The next level of analysis involves examining the participants' patterns of responses to each item in the COLLEX 5 test. Tables 5 and 6 present the results of the patterns of incorrect responses to delexical verb+noun collocations and lexical verb+noun collocations, respectively.

Table 5. Incorrect Delexical Verb+Noun Collocation Average Score and Its Error Pattern

Correct answer	Percentage of average score of incorrect answers for the participants	Incorrect answer selected	Correct verb→ Incorrect verb	Error pattern: Congurent (C) with Mandarin; Incongurent (IC) with Mandarin
1. pay a visit	50%	do a visit	pay→do	C
2. do a damage	60%	make damage	do→make	C
3. do harm	0%	/	/	/
4. say a prayer	80%	speak/tell prayer	say→speak/tell	C
5. make apologies	10%	do apologies	make→do	C
6. make friends	0%	/	/	/
7. make progress	0%	/	/	/
8. make sacrifices	40%	do/give sacrifices	make→do/give	C
9. give birth	20%	bring birth	give→bring	C
10. take measures	10%	make measures	take→make	C
11. pay heed	80%	show heed	pay→show	C
12. give a speech	10%	perform a speech	give→perform	C
13. go on a journey	10%	do a journey	go on→do	C
14. take root	30%	make root	take→make	C
15. take one's revenge	40%	obtain/make one's revenge	take→obtain/make	C
16. keep a diary	20%	run a diary	keep→run	IC
17. keep a secret	10%	hold a secret	keep→hold	C
18. make an escape	40%	take an escape	make→take	C

The data in Table 5 shows that the average incorrect percentage of the 18 delexical verb+noun collocation items varies, except for *pay a visit, do damage, say a prayer,* and *pay heed.* A minimum of 50% of students answered incorrectly on these four items. The other 14 items have an error rate of less than 50%, with 3 having an error rate of zero.

Overall, the results revealed that the percentage of average scores with incorrect answers for a large number of the 18 items was below 50%. And to a large extent, the incorrect responses seem to be congruent with the participants' L1, except for item 16 *Keep a diary. In* the case of this item, 20% of the students could not get the answer correct. The error pattern is incongruent with their L1. As for the other 14 items' error patterns, they were congruent collocations. The error pattern percentage can be easily calculated using the formula below:

Percentage = (Value/Total Value) x 100

The error patterns of 15 items are 1 incongruent and 14 congruent. The corresponding percentage can be calculated by expressing 'congruent' as a fraction of the 'total 15 items with incorrect responses' and multiplying the result by 100. Therefore, 92.3% of error patterns are Mandarin-congruent.

Table 6. Incorrect Lexical Verb+Noun Collocation Average Score and Its Error Pattern

Correct answer	Percentage of average score of incorrect answers for the participants	Incorrect answer selected	Correct verb→ Incorrect verb	Error pattern: Congurent (C) with Mandarin; Incongurent (IC) with Mandarin
1. size an opportunity	90%	catch an opportunity	seize→catch	C
2. draw a conclusion	80%	make a conclusion	draw→make	C
3. shed tears	50%	fell tears	shed→fell	C
4. catch a cold	0%	/	/	/
5. strike a pose	90%	hit/beat a pose	strike→hit/ beat	IC
6. put out a fire	5%	turn out a fire	put out→turn out	C
7. exercise one's rights	90%	conduct one's rights	exercise→conduct	C
8. hold discussion	50%	do discussion	hold→do	C
9. press charges	60%	push/run charges	press→run/push	C
10. lodge a complaint	40%	perform a complaint	lodge→perform	C
11. commit a crime	20%	conduct a crime	commit→conduct	C
12. strike a deal	90%	set /step a deal	strike→set/step	set a deal : C step a deal: IC
13. conduct an orchestra	40%	control/direct an orchestra	conduct→control/ direct	C
14. conduct a survey	50%	perform a survey	conduct→perform	C
15. gain access	80%	earn/take access	gain→earn/rake	C
16. pass judgment	90%	set judgment	pass→set	C
17. drop bombs	80%	fell bombs	drop→fell	C
18. hold one's breadth	40%	keep one's breath	hold→keep	C
19. lose count	50%	drop count	lose→drop	IC
20. speak one's mind	80%	talk/say one's mind	speak→talk/say	C
21. spoil the fun	20%	break/destroy the fun	spoil→break/destroy	C
22. polish shoes	10%	sweep/brush shoes	polish→sweep/brush	C
23. serve a purpose	60%	earn/win a purpose	serve→earn/win	C
24. clench one's fist	50%	tie one's fist	clench→tie	IC
25. blow a fuse	20%	strike/knock a fuse	blow→strike/knock	IC
26. talk shop	80%	speak shop	talk→speak	IC
27. defeat a purpose	20%	break/refuse a purpose	defeat→break/refuse	C
28. answer the door	15%	reply/respond to the door	answer→reply/respond	C
29. lose faith	50%	drop/cut faith	lose→cut/drop	IC
30. break a habit	20%	close a habit	break→close	IC
31. push a bike	45%	lead a bike	push→lead	IC
32. walk the street	80%	stroll/run the street	walk→stroll/run	C

The results in Table 6 are quite different from those in Table 5. There are more items, and the results are more varied, with a larger percentage of participants giving incorrect responses. Of the 32 items tested, 23 items have an average percentage of wrong answers of 50% or above. The data also shows that 9 of the 31 incorrect responses are

incongruent with the learners' L1. These responses are, i.e. *strike a pose, strike a deal, lose count, clench one's fist, blow a fuse, talk shop, lose faith, break a habit*, and *push a bike*. Therefore, 72.58% of the errors are congruent with the learners' L1, and 27.42% of the errors (22 items) are incongruent with Mandarin.

6. Discussion

Language transfer from one language to another causes lexical collocation errors among EFL learners, according to Boonraksa and Naisena (2022). This seems to be the case with the current study as well as more than half of the responses to the lexical verb+noun collocation items were incorrect. Their error patterns were congruent with the meaning in Mandarin. Hence suggesting that L1 congruence affects English collocation knowledge acquisition. This finding supports Yamashita and Jiang's (2010) hypothesis that, at the initial stage of learning collocations, learners rely on the L1 mediation process. This results in the processing advantage of congruent collocations. The congruency of most error patterns of wrong answers with learners' L1, as suggested by Suleiman (2022), is an indication of learners' dependence on their L1 low proficiency levels.

Previous research has indicated that both delexical and lexical verb+noun collocations pose significant difficulties for EFL/ESL learners. For instance, Choi (2019) found that Korean EFL learners make quite a few collocational errors with delexical verbs, and Abdullah et al. (2021) revealed that semantic deviations are more likely to occur with lexical verbs than with nouns to Malay ESL learners when it comes to the construction of verb+noun collocations in writing. In addition, Lexical verb+noun collocation, such as figurative collocations, pose a great challenge to Chinese EFL learenrs in a self-paced reading experiment (Shi et al., 2023). In the Chinese context, investigation on EFL learner use of verbs has often fallen under the error analysis tradition (e.g., Jiang, 2023; Yang, 2022; Xu & Zhou, 2022; Ye, 2019). More recently, corpus methodology has been widely used for verb research in China linguistic area (e.g., Li, 2022; Wei, 2021; Luo & Li, 2022; Xu et al., 2019). There is, however, still a need for more empirical data before any generalizations can be made regarding verb+noun collocation among learners. There is a lack of empirical research on lexical verbs among Chinese ESL learners. To date, no study has used a standard receptive collocation test to compare and analyze Chinese EFL learners' knowledge of receptive verb+noun collocations. Addressing this gap, the current study on Chinese EFL learners' receptive delexical and lexical verb+noun collocation knowledge found that the learners fared better in the former. One reason for this could be attributed to the delexical verbs in COLLEX5, *do, make,* and *take*. These verbs frequently co-occur, causing Chinese EFL learners to not differentiate between phrases such as *make a bath* and *have a bath*, or *do good* and *make good*. Also, delexical verbs lose their literal meaning in combination with other words. However, as they are high-frequency words, it is possible that the participants understand the meaning of single delexical verbs and nouns and have guessed the answer to some extent. Another possible reason is that some lexical verbs in COLLEX5, for instance, *clench*, *lodge,* and *shed* are low-frequency words, the words, and their meanings may not be familiar to the study participants. This makes collocations even more challenging as figurative collocations are processed more slowly than literal collocations (Shi, Peng & Li, 2023).
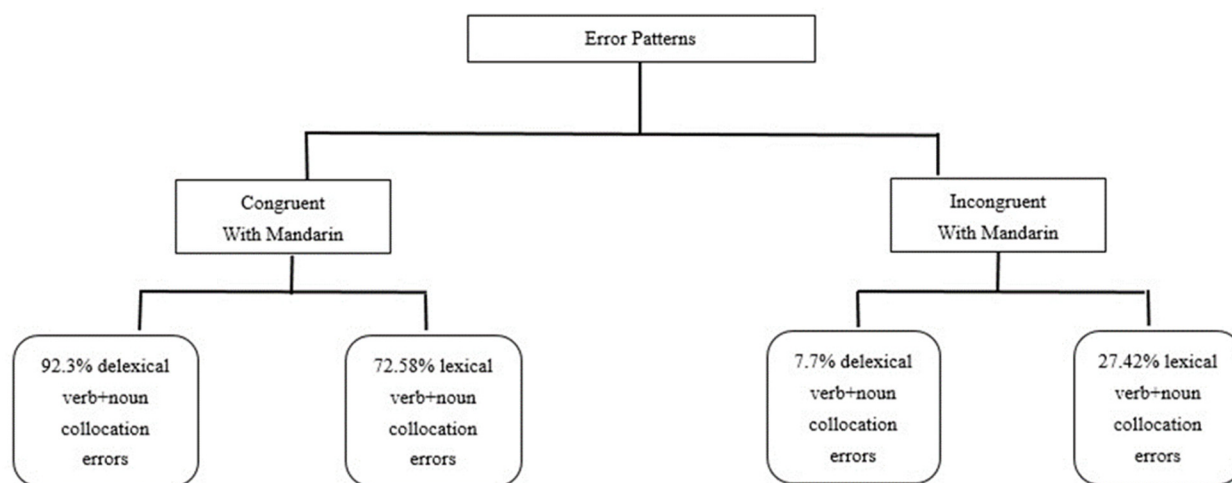
Figure 2. Percentage Distribution of Error Patterns of Delexical and Lexical Verb+Noun Collocations

The patterns of incorrect answers can be analyzed based on RHM. As shown in Figure 2, RHM's main assumption is the links between the three stores, namely the L1 lexicon, the L2 lexicon, and concept.

As shown in Figure 2, 92.3% of delexical verb+noun collocation error patterns are congruent with Mandarin. The percentage of error patterns of lexical verb+noun collocation is lower (72.58%) than delexical ones. On the other hand, 27.42% of lexical verb+noun collocation error patterns are incongruent with Mandarin, which is higher than delexical ones (7.7%). The incorrect answers are attributed to an insufficient conceptual link between L2 and the concept which is at the root of the incorrect answers. Students' L1 lexicon is larger and more closely linked to concepts, so they only have unidirectional lines between concepts and L1. It leads to backward translation from L2 to L1. In other words, they attempt to find L2 equivalents for L1 words they already know. Second, delexical verbs *do, make*, and *take* are high-frequency delexical verbs that are misused in the error patterns. This is because *do, make*, and *take* are all rendered in Mandarin by one word, i.e. *zuo*. Once delexical verbs with similar meanings appear together in a multiple-choice question, a word-for-word core meaning translation from L2 to L1 would render the same Mandarin phrase *zuo*+noun, and thus be treated as congruent. This shows that L1 transfer influences the error pattern of the delexical verb+noun collocation. Third, for the lexical verb+noun collocation, the verbs have technical meaning or/and figurative meaning. Technical uses are field-specific, while figurative uses are not primarily intended to convey the original meaning. Therefore, even though learners may know the figurative verb+noun collocation's individual word meaning, idiomatic/figurative meaning cannot be directly connected to L1 equivalents. Evidently, learners find figurative meaning derived from words and phrases that combine literal meaning with implied meaning much more challenging.

As reported earlier, past studies informed by RHM found that the primary source of errors in collocational knowledge is negative L1 transfer into L2 (Laufer & Eliasson, 1993; Pavlenko, 2008a; Pavlenko, 2009) as learners tend to translate backward (Kroll et al., 2010) due to failures in activating lexical links. The error patterns that emerged in the current study indicate the same trend in learners' dependence on their L1. Therefore, there must be a concerted effort to give emphasis, not only on the teaching and learning of verbs but also on verb+noun collocations, and phraseology in general (Abdullah et al., 2021).

7. Pedagogical implications and Conclusion

In this study, a diagnostic test called COLLEX 5 was used to evaluate receptive verb+noun collocations, rather than just focusing on erroneous collocations or just one type of target collocations; therefore, a more comprehensive picture of learners' knowledge of receptive verb+noun collocations is presented. Furthermore, the study also examines the error pattern of incorrect answers by examining the influence of L1-L2 congruence and incongruence on learners' collocation selection. To date, few studies have investigated EFL learners' acquisition of verb+noun collocation on a standardized collocation test known to be reliable and valid. Therefore, the results of the study add to the prior research base and throw some new light on EFL learners' collocation acquisition.

The findings of the current study on Chinese EFL learners' receptive collocation knowledge show that Chinese EFL learners have better knowledge of delexical verb+noun collocation than lexical ones. The study also demonstrates that most incorrect responses selected by EFL learners are due to transfer from the mother tongue (Fan, 2009). While they may have comprehended the meanings of individual words, EFL learners failed to discern which words they should match in the verb+noun collocation. Pedagogically, there is a need to raise EFL learners' knowledge of collocations. This could begin by raising learners' awareness of the incongruency between their L1 and L2, and by contrasting English verb+noun collocations with equivalent Chinese patterns (Nesselhauf, 2005). Learners' congruent and incongruent collocations could be stabilized, and those they do not recognize as collocations could be highlighted for them. Such an instructional strategy is likely to benefit learners' understanding and production of collocations.

Teachers can present items with meaningful collocations using language corpora and attested data rather than made-up introspective examples. The use of corpus data can help expose learners to more varied real-language texts and draw their attention to repeated lexical and even grammatical patterns (Byrd & Coxhead, 2010; Folse, Youngblood & González, 2014; Salah, 2023). And importantly "using the computational approach as a starting point makes it possible to distinguish between collocations of varying frequency of use" (Henriksen 2013: 32), which could potentially help address the problem of choosing collocations for teaching (Nizonkiza & Van de Poel, 2019).

In a nutshell, the findings of the current study are promising, but more research is needed. This affirms that lexical verbs are more problematic for Chinese learners of English as a foreign language when it comes to verb+noun collocations. To understand the meaning of lexical verb and noun combinations, as well as the use of delexical

structure, learners should understand the semantic meaning and restrictions of lexical verbs. They must also understand the meaning of delexical structure and the semantic meaning of lexical verbs. These are factors that help form the sound of verb+noun collocations. All these necessitate an understanding of verb phraseological patterns, implying that lexical verbs lesson plans should focus not just on grammar but also prioritize lexis.

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References

Abdullah, S., Aziz, R. A., & Kamaruddin, R. (2021). Lexical Verbs in Verb-Noun Collocations: Empirical Evidence from a Malay ESL Learner Corpus. *3L: Southeast Asian Journal of English Language Studies*, *27*(4). https://doi.org/10.17576/3L-2021-2704-11

Alsharif, A. A., & Alyousef, H. S. (2017). Investigating ESL/EFL students' approaches in response to feedback: A case study. *Journal of Language and Linguistic Studies*, *13*(2), 153-181.

Altenberg, B., & Granger, S. (2002). The grammatical and lexical patterning of Make in native and non-native student writing. *Applied Linguistics, 22*(2), 173-194. https://doi.org/10.1093/applin/22.2.173

Anna Siyanova-Chanturia. (2015) Collocation in beginner learner writing: A longitudinal study. *System, 53,* 148-160. https://doi.org/10.1016/j.system.2015.07.003

Ayto, J. (2006). Idioms. In Brown, K. (Ed.), *Encyclopedia of Language and Linguistics*, *5*, 518-521. Oxford: Elsevier. https://doi.org/10.1016/B0-08-044854-2/01002-6

Barfield & Andrew William (2006). *An exploration of second language collocation knowledge and development.* thesis, Swansea University. Retrieved from http://cronfa.swan.ac.uk/Record/cronfa42561

Biskup, D. (1992). L1 influence on learners' rendering of English collocations: A Polish/German empirical study. In P. J. L. Arnoud & H. Bejoint (Eds.), *Vocabulary and applied linguistics* (pp. 85-93). London, UK: Macmillan Academic and Professional Ltd. https://doi.org/10.1007/978-1-349-12396-4_8

Boers, F., Eyckmans, J., Kappel, J., Stengers, H., & Demecheleer, M. (2006). Formulaic sequencesand perceived oral proficiency: Putting a lexical approach to the test. *Language Teaching Research*, *10*, 245-261. https://doi.org/10.1191/1362168806lr195oa

Boonraksa, T., & Naisena, S. (2022). A Study on English Collocation Errors of Thai EFL Students. *English language teaching*, *15*(1), 164-177. https://doi.org/10.5539/elt.v15n1p164

Byrd, P., & Coxhead, A. (2010). On the other hand: Lexical bundles in academic writing and in the teaching of EAP. *University of Sydney Papers in TESOL*, *3*, 31-64

Carneiro, R. M. O. (2014). Teaching vocabulary: Lessons from the corpus, lessons for the classroom. *Domínios de Lingu@ gem, 8*(1), 696-700. https://doi.org/10.14393/DL15-v8n1a2014-39

Chen, H. H.-J., Yang, C. T.-Y., Wei, I. F.-F., & Jiang, A. (2015). A corpus study on phrasal verb use in the academic writing of published authors, native english-speaking students, and Taiwanese EFL learners. *English Teaching & Learning*, *39*(4), 63-91. (Special Issue: Corpus Research in Second Language Learning and Teaching)

Choi, W. (2019). A Corpus-Based Study on "Delexical Verb+ Noun" Collocations Made by Korean Learners of English. *Journal of Asia TEFL*, *16*(1), 279. https://doi.org/10.18823/asiatefl.2019.16.1.18.279

Cowie A. P. (1998) Introduction. In Cowie A.P. (Ed.), *Phraseology: Theory, Analysis and Applications*. Oxford: OUP, 1-20.

Cowie, A. P. (1978). *The place of illustrative material and collocations in the design of a learner's dictionary. In honour of A.S. Hornby*. Oxford, UK: Oxford University Press

Cowie, A. P. (1991a). Multiword units in newspaper language. In S. Granger (Ed.), *Perspectives on the English Lexicon: A tribute to Jacques van Roey*, Louvain-la-Neuve: Cahiers de L'Institut de Linguistique de Louvain, pp.101-116. https://doi.org/10.2143/CILL.17.1.2016699

Coxhead, A., & Nation, P. (2001). The Specialized Vocabulary of English for Academic Purposes. In J. Flowerdew, & M. Peacock (Eds.), *Research Perspectives on English for Academic Purposes*, 252-267.

https://doi.org/10.1017/CBO9781139524766.020

Croft, W., & Cruse. D. A. (2004). *Cognitive Linguistics.* New York: Cambridge University Press. 18-250. https://doi.org/10.1017/CBO9780511803864

de Souza, S. (2021). *Processing collocations in the L2: semantic transparency & congruency* [Doctoral dissertation, University of Oxford].

El-Dakhs, D. A. S. (2015). The lexical collocational competence of Arab undergraduate EFL learners. *International Journal of English Linguistics*, *5*(5), 60-74. https://doi.org/10.5539/ijel.v5n5p60

Fan, M. (2009). An exploratory study of collocational use by ESL students-A task based approach. *System*, *37*(1), 110-123. https://doi.org/10.1016/j.system.2008.06.004

Farghal, M., & Obiedat, H. (1995). Collocations: A neglected variable in EFL. IRAL: *International Review of Applied Linguistics in Language Teaching, 33*(4), 315-331. https://doi.org/10.1515/iral.1995.33.4.315

Febriana, I., & Maisarah, I. (2021). An Analysis of Students' Collocation Translation in EFL Classroom. *International Journal of Language Pedagogy*, *1*(1), 46-53. https://doi.org/10.24036//ijolp-1-1-6

Folse, K. S., Youngblood, A. M., & González, M. C. (2014). Five Suggestions for Creating a Richer Lexical Environment for English Language Learners. *Sunshine TESOL Journal, 14*(1), 7-13.

Gall, M. D., Borg, W. R., & Gall, J. P. (1996). *Educational research: An introduction*. Longman Publishing.

Gentner, D. (2006). Why verbs are hard to learn. *Action meets word: How children learn verbs*, 544-564. https://doi.org/10.1093/acprof:oso/9780195170009.003.0022

Gyllstad, H. (2007). *Testing English collocations: Developing receptive tests for use with advanced Swedish learners.* Published Doctoral Dissertation. Lund University, Stockholm, Switzerland.

Howarth, P. (1996). *Phraseology in English Academic Writing: Some Implications for Language Learning and Dictionary Making*. Berlin, Boston: Max Niemeyer Verlag. https://doi.org/10.1515/9783110937923

Howarth, P. (1998). Phraseology and second language proficiency. *Applied Linguistics*, *19*(1), 24-44. https://doi.org/10.1093/applin/19.1.24

Jiang, N. (2000). Lexical representation and development in a second language. *Applied Linguistics, 21*, 47-77. https://doi.org/10.1093/applin/21.1.47

Jiang, Z. (2023). Analysis of Errors in English Argumentative Essays Written by Chinese University German Majors. *Journal of Education, Humanities and Social Sciences*, *13*, 131-139. https://doi.org/10.54097/ehss.v13i.7882

Kalay, D. (2021). Receptive Vocabulary Knowledge of University Students in CLIL Instruction. *European Journal of Foreign Language Teaching, 5*(3). https://doi.org/10.46827/ejfl.v5i3.3527

Khan, J., & Liu, C. (2020). The impact of colors on human memory in learning English collocations: evidence from south Asian tertiary ESL students. *Asian. J. Second. Foreign. Lang. Educ., 5*, 17. https://doi.org/10.1186/s40862-020-00098-8

Kroll, J. F., & Stewart, E. (1994). Category interference in translation and picture naming: Evidence for asymmetric connections between bilingual memory representations. *Journal of Memory and Language*, *33*(2), 149-174. https://doi.org/10.1006/jmla.1994.1008

Kroll, J. F., Van Hell, J. G., Tokowicz, N., & Green, D. W. (2010). The Revised Hierarchical Model: A critical review and assessment. *Bilingualism: Language and Cognition, 13*(3), 373-381.

Laufer, B. (1998). The development of passive and active vocabulary in a second language: same or different? *Applied Linguistics, 19*(2), 255-271. https://doi.org/10.1093/applin/19.2.255

Laufer, B., & Waldman, T. (2011). Verb-noun collocations in second language writing: A corpus analysis of learners' English. *Language Learning*, *61*(2), 647-672. https://doi.org/10.1111/j.1467-9922.2010.00621.x

Lee, S. (2016). L1 influence on the process of L2 collocation: An experimental study of Korean EFL learners. *Linguistic Research*, *33*, 137-163. https://doi.org/10.17250/khisli.33..201609.006

Li, Y. (2022). Corpus-Based Error Analysis of Chinese Learners' Use of High-Frequency Verb Take. *English Language Teaching*, *15*(2), 21-30. https://doi.org/10.5539/elt.v15n2p21

Liao Posen. (2011). A Study of College Students' Collocational Proficiency and Errors in Their Chinese-English

Translations. *English Teaching & Learning*, *35*(1), 85-122.

Luo, J., & Li, D. (2022). Universals in machine translation? A corpus-based study of Chinese-English translations by WeChat Translate. *International Journal of Corpus Linguistics*, *27*(1), 31-58. https://doi.org/10.1075/ijcl.19127.luo

Macis, M., & Schmitt, N. (2016). The figurative and polysemous nature of collocations and their place in ELT. *ELT Journal, 71*(1), 50-59. https://doi.org/10.1093/elt/ccw044

Martelli, A. A. (2006). Corpus based description of English lexical collocations used by Italian advanced learners. In E. Corino, C. Marello, & C. Onesti (Eds.), *Proceedings XII EURALEX International Congress* (pp. 1005-1011). Alessandria: Edizioni dell'Orso.

Martínez-Mesa, J., González-Chica, D. A., Bastos, J. L., Bonamigo, R. R., & Duquia, R. P. (2014). Sample size: how many participants do I need in my research? *Anais brasileiros de dermatologia*, *89*(4), 609-615. https://doi.org/10.1590/abd1806-4841.20143705

McCarten, J. (2007). *Teaching vocabulary. Lessons from the corpus, lessons for the classroom*. Cambridge, Cambridge University Press.

Melka, F. (1997). Receptive versus productive aspects of vocabulary. In N. Schmitt & M. McCarthy, (Eds.), *Vocabulary: Description, acquisition, and pedagogy*. New York: Cambridge University Press, pp. 84-102.

Men H. (2018). Verb Increase and the Production of Verb + Noun Collocations. In: *Vocabulary Increase and Collocation Learning.* Springer, Singapore. https://doi.org/10.1007/978-981-10-5822-6_6

Men, H. (2015). *Vocabulary increase and collocation learning: a corpus-based cross-sectional study of Chinese EFL learners*. Unpublished PHD thesis, Birmingham City University, UK.

Miyamoto, T. (2000). *The Light Verb Construction in Japanese: The Role of the Verbal Noun* (Vol. 29). Amsterdam: John Benjamins Publishing. https://doi.org/10.1075/la.29

Mutahar, Qassem. (2021). Style and meaning in translations of the Qur'anic verb-noun collocations into English. *PSU Research Review, 5*(3), 201-214. https://doi.org/10.1108/PRR-12-2020-0041

Nation, P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9781139524759

Neshkovska S. (2018). *What do advanced ESL\EFL students' need to know to overcome 'collocational' hurdles? Thesis*. Pristina: AAB College. *7*(2), 53-74.

Nesselhauf, N. (2003). The use of collocations by advanced learners of English and some implications for teaching. *Applied Linguistics*, *24*, 223-242. https://doi.org/10.1093/applin/24.2.223

Nesselhauf, N. (2005). *Collocations in a learner corpus.* Amsterdam: John Benjamins. https://doi.org/10.1075/scl.14

Nizonkiza, D., & Van de Poel, K. (2019). Mind the gap: Towards determining which collocations to teach. *Stellenbosch Papers in Linguistics Plus*, *56*(1), 13-31. https://doi.org/10.5842/56-0-775

O'Keefe, A., McCarthy, M., & Carter, R. (2007). *From corpus to classroom. Language use and language teaching*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511497650

Obukadeta, P. (2019). *Collocations in a Learner English Corpus: Analysis of Yoruba-speaking Nigerian English Learners' use of Collocations.* Unpublished PHD thesis, Kingston University London, England.

Ozen, C (2019). Collocations in English. Retrieved from https://www.verbling.com/articles/post/vocabulary-and-collocations

Poulsen, S. (2005). *Collocations as a language resource: A functional and cognitive study in English phraseology*. Ph.d. dissertation Institute of Language and Communication. University of Southern Denmark.

Pulido M. F., & Dussias P. E. (2020). Desirable difficulties while learning collocations in a second language: conditions that induce L1 interference improve learning. *Biling. Lang. Cogn., 23*, 652-667. https://doi.org/10.1017/S1366728919000622

Read, J. (2004). Plumbing the depth: How should the construct of vocabulary knowledge be defined? In P. Bogaards and B. Laufer (Eds.), *Vocabulary in a Second Language*. John Benjamins Publishing Company, pp. 209-27. https://doi.org/10.1075/lllt.10.15rea

Saeed, John L. (2003). *Semantics*. Oxford: Blackwell.

Sana'ati, M. K., Khonamri, F., Azizi, M., & Molana, K. (2019). Dynamic assessment in developing EFL learners' depth of vocabulary knowledge through criticalreading. *Jurnal Pendidikan Malaysia, 44*(2), 20-29. http://10.0.68.168/JPEN-2019-44.02

Sanguannam, S. (2016). *A study on "delexical verb+noun" collocation errors of Thai EFL intermedieate and advanced learners*. Unpublished master thesis, Thamasat University, Thailand.

Shi, J., Peng, G., & Li, D. (2023). Figurativeness Matters in the Second Language Processing of Collocations: Evidence From a Self-Paced Reading Experiment. *Language Learning*, *73*(1), 47-83. https://doi.org/10.1111/lang.12516

Sinclair J., & Fox, G. (1990). *Collins COBUILD English Grammar*. London: Collins.

Subaşı, G., & Kahraman, M. (2021). An analysis of verb-noun combinations in high frequency verbs in argumentative essays of Turkish ELT students: the case of make and do. *International Online Journal of Education and Teaching (IOJET), 9*(1), 584-603.

Suleiman, A. A. (2022). F1 Impact on Reception and Production of Delexical Verbs Collocations by Arabic EFL Learners. *International Journal of Science and Research (IJSR), 11*(5), 637-643.

Tognini Bonelli, E. (2010). Theoretical overview of the evolution of corpus linguistics. In: A. O'Keeffe & M. McCarthy (Eds.), *Routledge handbook of corpus linguistics* (pp. 14-27). London: Routledge. https://doi.org/10.4324/9780203856949-2

Webb, S., & Nation, P. (2017). *How vocabulary is learned*. Oxford University Press. https://doi.org/10.25170/ijelt.v12i1.1458

Wei, Y. (2021). Use of English Phrasal Verbs of Chinese Students Across Proficiency Levels: A Corpus-Based Analysis. *International Journal of TESOL Studies*, *3*(4), 25-42.

Wu, S., Witten, I. H., & Franken, M. (2010). Utilizing lexical data from a Web-derived corpus to expand productive collocation knowledge. *ReCall*, *22*(1), 83-102. https://doi.org/10.1017/S0958344009990218

Wu, Y. J., Cristino, F., Leek, C., & Thierry, G. (2013). Non-selective lexical access in bilinguals is spontaneous and independent of input monitoring: Evidence from eye tracking. *Cognition*, *129*, 418-425. CrossRefGoogle ScholarPubMed.

Xu, H., Lu, X., & Brezina, V. (2019). Acquisition of the Chinese particle le by L2 learners: A corpus-based approach. *Computational and corpus approaches to Chinese language learning*, 197-216. https://doi.org/10.1007/978-981-13-3570-9_10

Xu, Y., & Zhou, L. (2022). Study on Grammatical Errors in English Writing of Chinese University Non-English Majors. *International Journal of Social Science and Education Research*, *5*(9), 431-440.

Yamashita, J., & Jiang, N. (2010). L1 influence on the acquisition of L2 collocations: Japanese ESL users and EFL learners acquiring English collocations. *TESOL Quarterly, 44*(4), 647-668. https://doi.org/10.5054/tq.2010.235998

Yang, T. Y. C., Chen, H. J. H., Liu, C. Y., & Liu. Y. C. (2020). A Semi-automatic Error Retrieval Method for Uncovering Collocation Errors from a Large Learner Corpus. *English Teaching & Learning*, *44*(1), 1-19. https://doi.org/10.1007/s42321-019-00037-y

Yang, Y. (2022, February). The investigation on redundancy errors in writing of Chinese English learners with different proficiency. In *2021 International Conference on Education, Language and Art (ICELA 2021)* (pp. 139-146). Atlantis Press. https://doi.org/10.2991/assehr.k.220131.025

Ye, Z. (2019). Chinese to English Lexical Transfer Errors in the Writing of Rural Senior High School Students. *Theory and Practice in Language Studies*, *9*(6), 645-654. https://doi.org/10.17507/tpls.0906.06

Zhang, T., Van Heuven, W. J., & Conklin, K. (2011). Fast automatic translation and morphological decomposition in Chinese-English bilinguals. *Psychological Science*, *22*, 1237-42. https://doi.org/10.1177/0956797611421492

Zhang, X. (1993). *English collocations and their effect on the writing of native and non-native college freshmen*. Indiana University of Pennsylvania, Pennsylvania.