

The Repetition of Collocations in EFL Textbooks: A Corpus Study

王瑞欣 (Jui-hsin Teresa Wang)、顧伯庸 (Robert L. Good)
National Kaohsiung First University of Science and Technology

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The importance of repetition in the acquisition of lexical items has been widely acknowledged in single-word vocabulary research but has been relatively neglected in collocation studies. Since collocations are considered one key to achieving language fluency, and because learners spend a great amount of time interacting with their textbooks, the present study investigates verb-noun collocations found in the three most popular series of English textbooks for senior high schools in southern Taiwan. Our focus is verb-noun lexical collocations because these have been shown to be difficult for EFL learners. Repetitions of these collocations were identified by searching the textbook corpus using a proprietary computer-based program. The results show that these collocations were repeated from 3 to 5 times on average. Moreover, most collocations (80%) occurred only one to five times throughout the whole series of textbooks. Because of the low number of repetitions, it is concluded that textbook writers may need to re-evaluate the importance of repetition for collocations if their acquisition is a goal. Furthermore, it is suggested that EFL teachers provide explicit instruction to make up for the limited number of exposures to collocations in textbooks.

INTRODUCTION

Firth, credited as the researcher who brought collocations into prominence in linguistics, defined collocation as “the company words keep together” (1957, p. 196). The constituent elements of these word combinations re-occur together frequently (Lewis, 1997; Nation, 2002). In addition, collocations are quite typical of language (Hill, 2000) and could comprise as much as 80% of a written text (Hill, 2003, p. 82); thus, they play an essential part of native speakers’ competence. To use the language in a more native-like way, English as a second language (ESL) or English as a foreign language (EFL) learners might need to acquire collocational knowledge. The literature also suggests that using collocations in listening, speaking, reading or writing can help learners “think more quickly and communicate more efficiently” (Hill, 2000, p. 54). Inasmuch as learners spend so much of class time interacting with textbooks (Young & Reigeluth, 1988) and EFL teachers surveyed in Taiwan closely follow the contents of their textbooks in their teaching (Chen, 2000; Hsu 2004), the crucial role that textbooks play in language classrooms is obvious. Therefore, we believe it is worthwhile to look at the treatment of collocations in language teaching textbooks.

The number of times a collocation is encountered may affect learners’ acquiring it. They may need multiple encounters to increase the probability of making a collocation become part of their actual competence (Hill, Lewis, & Lewis, 2000). Numerous exposures will be a great

help especially for the kind of collocations that learners have more difficulties with, such as verb-noun lexical collocations (Liu, 2002; Shih & Wang, 2006). Because textbooks comprise a large part of learners' language input, their encounters with collocations may depend a great deal on textbook content. Therefore, it becomes important to analyze textbook coverage of collocations to know what kind of exposure to collocations students are receiving.

Because of lack of previous studies focusing on this specific issue, the present study attempts to draw the attention of English language teachers and textbook publishers/writers to collocation repetitions, a key to collocation acquisition, in the textbooks used in Taiwan. These findings can also serve as a reference for the on-going development of new curriculum guidelines for senior high schools by the Ministry of Education (MOE).

LITERATURE REVIEW

In this section we give a working definition of *collocation* and briefly review the importance of collocational knowledge. We also look at other studies of collocations in textbooks. We conclude with the specific research questions we seek to answer in this study.

Definition of Collocations

The concept of collocations was first identified by Palmer (1933, as cited in Nation, 2002, p. 317) as a string of words that “must or should be learned, or is best or most conveniently learned as an integral whole or independent entity, rather than by the process of piecing together their component parts.” Collocations fall around the middle of a continuum whose end points are free combinations, which are phrases constructed using rules of syntax, and idioms, which allow little or no variation in form and whose meaning cannot be determined by the literal meanings of the individual words (Howarth, 1998; Nattinger & DeCarrico, 1997). Following Benson, Benson, and Ilson (1997), we consider collocations to be “fixed, identifiable, non-idiomatic phrases and constructions” (p. xv), such as *consist of* and *commit murder*: the verb *consist* takes the preposition *of* and the expected verb used with *murder* is *commit*. Inasmuch as collocations are a problem for ESL/EFL learners in writing and speaking (Howarth, 1998), we exclude other multiple-word lexical items from our discussion.

Learners' Collocational Knowledge

Acquiring collocations is beneficial for EFL learners' lexical development (Ellis, 1996) and communicative competence (Bahns & Eldaw, 1993; Nattinger & DeCarrico, 1997), helping them overcome the problem of comprehending a sentence word by word; thus,

learners' listening and reading abilities can be improved (Lewis, 2000). At the same time, they may be able to speed up their thinking in speaking and get their meaning across more effectively (Hill, 2000). Bahns & Eldaw (1993) and Gitsaki (1999), based on the results of their own studies, argue that EFL learners face relatively greater difficulty with lexical collocations rather than grammatical ones in their language production since they make more errors in lexical word combinations in writing. Specifically, verb-noun lexical collocations were found to be the most difficult kind for Taiwanese EFL learners in their written production (Liu, 2002) and oral production (Shih & Wang, 2006). Therefore, verb-noun lexical collocations (patterns L1 and L2 in Table 2) are the focus in the present study. Tables 1 and 2 summarize Benson *et al.*'s (1997) categorization of collocations. These exemplify the kind of collocational knowledge native speakers of English share.

Table 1 Grammatical collocations by Benson *et al.* (1997)

Patterns	Rules	Examples
G1	noun + preposition	<i>The blockade of enemy ports</i> by our navy.
G2	noun + to + infinitive	They made <i>an attempt to do</i> it.
G3	noun + that-clause	He took <i>an oath that</i> he would do his duty.
G4	preposition + noun	We discovered it <i>by accident</i> .
G5	adjective + preposition	They were <i>angry at</i> my friends.
G6	adjective + to + infinitive	She is <i>ready to go</i> .
G7	adjective + that-clause	It is <i>necessary that</i> he be replaced immediately.
G8	19 verb patterns, including: verb + to + infinitive, verb + gerund, verb + object 1 + object 2, and others	<i>She continued to write.</i> <i>They enjoy watching TV.</i> <i>The police fined him fifty dollars.</i>

Note. Adapted from Benson *et al.*, 1997, pp. xvi-xxviii. A grammatical collocation is “a phrase consisting of a dominant word (noun, adjective, or verb) and a preposition or grammatical structure such as an infinitive or clause” (p. xv).

Table 2 Lexical collocations by Benson *et al.* (1997)

Patterns	Rules	Examples
L1	verb (creation/activation) + noun	She <i>does the laundry</i> everyday.
L2	verb (eradication/nullification) + noun	The teacher <i>declined our invitation</i> .
L3	adjective + noun / noun + noun	The room has a <i>sour smell</i> .
L4	noun + verb (action)	<i>Bombs exploded</i> across Bangladesh.
L5	noun (unit) + of + noun	David gave Elisa a <i>bouquet of flowers</i> .
L6	adverb + adjective	They are <i>closely acquainted</i> .
L7	verb + adverb	They <i>argued heatedly</i> in that debate.

Note. Adapted from Benson *et al.*, 1997, pp. xxx-xxxv. Typical lexical collocations consist of nouns, adjectives, verbs, and adverbs” (p. xxx).

The Role of Collocations in English Textbooks

The dominant role of coursebooks in the language classroom can be seen from Young and Reigeluth's 1988 study in which they found that over 90% of class time was spent by students interacting with textbooks. This high reliance on coursebooks is also true among English teachers at senior high schools in Taiwan because over 90% of the surveyed English teachers at local senior high schools follow at least 75% of the contents of their textbooks in their teaching (Chen, 2000; Hsu, 2004). To investigate the great influence of textbooks on students' learning, Gitsaki (1999) studied the collocations in textbooks and subjects' acquisition of collocations. She analyzed the number of collocation tokens for each of 26 grammatical patterns and 11 lexical ones in the three-volume textbook series *Task Way English* used by Greek students at state junior high schools in Greece. To examine productive collocational knowledge, she had each subject write a 200-word composition and translate 10 sentences from Greek to English; receptive collocational knowledge was assessed using a fill-in-the-blank test in English. Analyzing these three tasks separately, Gitsaki ranked the 37 collocation patterns according to the number of collocations produced by students at each academic level. Each list was then correlated with the frequency of collocation patterns found in each volume of the textbook series. The results showed that the more a certain collocation pattern appeared in a textbook at an academic level, the greater number of and more accurate the collocations of that pattern the students produced. She attributed this to learners becoming more conscious of collocation patterns when they repeatedly encountered them.

Gitsaki's (1999) study helps us understand that frequency of collocation occurrence in learners' textbooks can influence their acquisition. However, she examined collocations by category (e.g., verb + noun) but not individual ones such as *commit murder*. Specific collocations may matter more than general patterns. Therefore, we may also have to examine the frequency of each collocation type in textbooks.

The number of repeated exposures necessary to acquire single-word vocabulary has been widely investigated; however, that of collocations has not yet been explored. As Lewis (1997, p. 51) suggests, if multi-word units, including collocations, are perceived by learners as "single lexical items," we might conclude that the repetition range for single-word vocabulary could reasonably be applied in collocation acquisition research. Nevertheless, we should note that learning words and learning collocations may not be the same, especially if learners already know the individual words that make up a collocation. To fill the gap in studies on collocation repetitions, we attempt to provide some insight by investigating the repetition or recycling of verb-noun lexical collocations in our three-series-textbook corpus.

To conclude this section we raise two research questions to be answered in this study.

1. (a) How many different verb-noun lexical collocations are found in reading passages of three series of senior high school English language textbooks?
(b) Are the numbers significantly different among the different publishers' series?
2. What is the frequency of occurrence of the verb-noun lexical collocations throughout a whole series?

METHOD

The Series of English Textbooks Comprising the Corpus

To create the corpus for our study, we surveyed publishers to discover the most popular series of senior high school English textbooks used in the greater Kaohsiung area in the academic year of 2004-2005. Some discrepancies about textbook use were resolved by consulting with the English teachers in certain schools. The results showed that only three series of English textbooks were used by the senior high schools in this area, though others were available: Far East (51.5%), San Min-Chen (35.6%), and Lung Teng (12.9%).

The paper and electronic copies of the three series of the English textbooks, six volumes each, for the senior high school of textbooks were obtained either by purchase or publishers' generous donation. All of these materials were used solely for academic study. The reading section and non-reading section, such as comprehension check, vocabulary, grammar rules, and so on, of each lesson constituted the corpus analyzed.

Data Collection and Analysis Procedure

After going through all texts in the reading passages in each lesson and underlining all possible verb-noun collocations, we confirmed the collocational status by consulting two collocational dictionaries and two native speakers of American English, who are experienced English teachers currently at a university. *The BBI dictionary of English word combinations* (Benson *et al.*, 1997) with 75,000 collocations was chosen for being the first widely known collocational dictionary. *Oxford collocations dictionary for students of English* (Lea, 2002) was used because its 170,000 collocation entries are mainly selected from the 100-million-word British National Corpus. Most importantly, these two collocational dictionaries exclude free combinations and fixed idioms, which is essential to keep the focus on collocations rather than other kinds of multiple-word items. Only collocations found at least one of the two dictionaries or agreed on by both native speakers of English, following a strict protocol, were counted for this study.

A total of 994 lexical items were designated as collocations in all three series of textbooks combined. (See Table 5 for frequencies of tokens and types found in the series; also see Wang (2006) for a complete list of all collocations identified.) Over 56% of them were confirmed by the *BBI Dictionary* while approximately half of the remainder by the *Oxford Collocations Dictionary* and the other half by the two native speakers of English.

The frequency of occurrence of those legitimate verb-noun lexical collocations in each series of textbooks was then calculated by using the Collocation Analysis Program (Chen, 2006), especially designed by Ching-Chi Chen for the current study. Because the Collocation Analysis Program uses a matching method to identify the occurrences of collocations sentence by sentence, it requires both a text corpus file and a keyword file containing collocations. The keywords consist of all variations of the verb and the noun in each collocation ignoring determiners, such as *a* or *the*, and possessives, such as *his*, or *my*. The program generated a KWIC (Key Word In Context) listing for each collocation, which were scrutinized manually to eliminate false identification of some verb and noun combinations as collocations. Means (tokens/types) were calculated to tell us on average how frequently each collocation occurs in a lesson, in a volume, and the totals for each series.

RESULTS AND DISCUSSION

4.1 Research Question 1: The number of verb-noun lexical collocations in reading passages and the significant difference among the three series of textbooks.

This study is the first to investigate the occurrence of collocations appearing in senior high school English textbooks in Taiwan. This study distinguishes itself from previous studies in that we examine different verb-noun lexical collocations (i.e., types) instead of tokens (Hsu, 2006) or collocation patterns (Gitsaki, 1999).

Table 3 displays the series totals, volume means, and lesson means for the different verb-noun lexical collocations found in the reading texts. Each of these statistics represents different collocations or types. Among the three publishers, San Min-Chen includes the most collocations though the numbers are close, and the three series have a similar number of verb-noun lexical collocations in each volume (60-70) and each lesson (5-6).

Table 3 Different Verb-Noun Collocations in the Readings by Series

Series	Far East	Lung Teng	San Min-Chen
Series Totals	391	372	428
Volume Means	65.2	62.0	71.3
Lesson Means	5.4	5.5	5.9

Note. There are six volumes in each of the three series; however, the numbers of lessons differ: 72 in both Far East and San Min-Chen and 68 in Lung Teng.

To investigate whether there is a significant difference among the three series, we conducted a one-way ANOVA test using SPSS 10.0 (1999). The independent variables are the three publishers and the dependent variables are the number of collocations in each series.

Table 4 ANOVA for the Number of Different Verb-Noun Lexical Collocations

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.680	2	5.840	.535	.586
Within Groups	2280.372	209	10.911		
Total	2292.052	211			

Table 4 shows the between-group and within-group variability in the number of collocations in the three series. The difference between groups does not reach the 5% significant level (i.e., $p > .05$). From this we conclude that the number of verb-noun lexical collocations appearing in the reading passages of each of the three series is the same.

The issue of how many collocations should be taught or learned has been raised in several studies (Bahns & Eldaw, 1993; Hill, 2000; Nesselhauf, 2003). Only Hill (2000, p. 61) proposes a specific number of no more than 10 new collocations per lesson to be explicitly taught. Instead of giving a definite number, some researchers (Conzett, 2000; Hill, Lewis, & Lewis, 2000) simply note that not all collocations need to be taught, while others (Bahns & Eldaw, 1993; Nesselhauf, 2003) address this question indirectly by giving criteria for selecting collocations to be taught. The common guideline suggested is to teach collocations that do not have a direct translation equivalent between the target language and learners' first language (Gitsaki, 1999; Nesselhauf, 2003), which seems to suggest that the major problems learners have with collocations are due to first language influence.

The findings here reveal that the publishers' practice is to incorporate 5 to 6 verb-noun lexical collocations per lesson. These perhaps constitute an implicit upper limit of the number that EFL students in Taiwan should learn. This number seems to meet the recommendation of fewer than 10 new collocations to be taught in class proposed by Hill (2000).

4.2 Research Question 2: Frequency of occurrence of the verb-noun lexical collocations.

This question is addressed first by providing mean frequency of occurrence of collocations and then by showing the percentages for different frequency ranges. The findings for the frequency of occurrence of verb-noun lexical collocations are summarized in Table 5. From the table, we see that learners who use these three series of textbooks are likely to encounter a specific collocation twice per lesson, less than three times per volume, and less than five times throughout the whole six-volume series. Among the publishers, Lung Teng is somewhat more likely to recycle verb-noun lexical collocations than the other two while San Min-Chen recycles the least. Moreover, taking both the tokens and types of collocations into

Table 5 Frequency of Occurrence of Verb-Noun Lexical Collocations

Series	Tokens & Types	Frequency of Occurrence		
		In a Lesson	In a Volume	In a Series
Far East				
	Tokens / Types	924 / 470	1056 / 448	1573 / 391
	Mean Occurrences Per Type	1.9	2.4	4.0
Lung Teng				
	Tokens / Types	941 / 452	1163 / 441	1693 / 372
	Mean Occurrences Per Type	2.1	2.6	4.6
San Min-Chen				
	Tokens / Types	851 / 481	1034 / 470	1516 / 428
	Mean Occurrences Per Type	1.8	2.2	3.5

Note. The mean occurrences per type are calculated by dividing the total number of types into the total number of tokens; i.e., tokens/types.

consideration, we notice that Lung Teng included fewer different verb-noun lexical collocations (372) but recycled them more often throughout the six volumes (mean occurrences per type: 4.6) while San Min-Chen was at the opposite (total: 428; mean: 3.5).

The mean number of occurrences per series is only one way to analyze the data. In addition to this, we can look at the frequency ranges for collocations. Table 6 shows that the number of collocations that occur less than six times in a series is very high. Also, the frequency ranges are very similar among the three series. The data show that most of the collocations occur two to five times (around 43% to 48%) or just once (between 36% and 38%). In comparison with the large number of low frequency items, collocations with relatively high occurrences (6 and over) are few indeed (Far East: 16.1%; Lung Teng: 20.2%; San Min-Chen: 14.0%). This provides an explanation of why the mean occurrence per type in a series was less than five as reported above. This breakdown of the distribution of frequency may be more revealing than the means alone that are presented in Table 5.

Table 6 Frequency Ranges of Occurrence of Verb-Noun Lexical Collocations with Examples

Frequency Ranges	Series		
	Far East	Lung Teng	San Min-Chen
1	144 (36.8%) <i>achieve a purpose</i>	135 (36.3%) <i>file one's fingernails</i>	164 (38.3%) <i>acquire knowledge</i>
2-5	184 (47.1%) <i>inflate a life jacket</i>	162 (43.5%) <i>build self-confidence</i>	204 (47.7%) <i>take a shower</i>
6-9	32 (8.2%) <i>take medicine</i>	38 (10.2%) <i>meet a challenge</i>	28 (6.5%) <i>hold one's breath</i>
10-13	9 (2.3%) <i>make a difference</i>	14 (3.8%) <i>sing a song</i>	18 (4.2%) <i>make an effort</i>
14-17	10 (2.6%) <i>ask directions</i>	10 (2.7%) <i>make a friend</i>	4 (0.9%) <i>pay attention</i>
18+	12 (3.1%) <i>see a movie</i>	13 (3.5%) <i>do homework</i>	10 (2.3%) <i>play a role</i>
Total	391 (100.0%)	372 (100.0%)	428 (100.0%)

Selected examples for each frequency range are listed in the table. It is evident that the publishers are well aware that students are likely to need or encounter some collocations (e.g., *see a movie* and *play a role*) more than others (e.g., *file one's fingernails* and *inflate a life jacket*). However, it should be acknowledged that some low frequency items in the textbooks may be more common than their frequency in a series may imply (e.g., *take a shower* and *achieve a purpose*).

Many scholars (Conzett, 2000; Gitsaki, 1999; Harwood, 2002; Lewis, 1997) have strongly recommended that collocations be recycled regularly and systematically in teaching materials for recognition and/or production purposes to help learners integrate them into their mental lexicon. From the high percentage of items occurring only one to five times totally in each series, we might conclude that those collocations are not encountered enough by the students to acquire even after three years of study. This conclusion assumes their total contact with English is through their textbooks, which is possibly too pessimistic a view.

The findings for mean frequency and frequency ranges for verb-noun lexical collocations in this study are comparable to those of single-word vocabulary counts done by Chang (2002) for locally produced English textbooks in Taiwan and Nation (1990) for ELT textbooks worldwide. These similarly low frequencies could be interpreted to mean that, generally speaking, textbook writers do not pay much attention to the recycling of either collocations or single-word vocabulary. This deserves special attention because as Harwood (2002) and others (Young & Reigeluth, 1988) have observed, institutional pressures and individual preferences influence teachers to follow the textbook faithfully in teaching. Taiwan is no exception, as we have observed above (Chen, 2000; Hsu, 2004). Deficiencies in the textbook can translate into deficiencies in teaching and learning. Nation (1990) warns teachers about possible deficiencies in textbooks, and since Taiwan is an EFL environment where students may have little non-classroom exposure to English, English teachers need to be wary of relying exclusively on their textbooks in light of the apparently inadequate number of repetitions of collocations. Through the current study, teachers can understand the possible limitation in terms of the recycling of collocations and may need to supplement what is currently available in senior high school English textbooks.

CONCLUSION AND IMPLICATIONS

This study shows first that English textbooks for EFL learners at senior high schools in Taiwan have a similar number of verb-noun lexical collocations found in their reading texts. Moreover, it is apparent that the attention given to verb-noun lexical collocations by all three publishers is far from adequate if active acquisition is the goal because most of the collocations students are exposed to occur only from one to five times throughout a series.

Because of the importance of collocations both in receptive skills (Lewis, 2000) and in productive skills (Conzett, 2000), as well as our findings that most verb-noun lexical collocations are recycled only a few times in Taiwan's EFL textbooks, it is recommended that textbook writers make collocations more salient by recycling them more as suggested by many researchers (Conzett, 2000; Gitsaki, 1999; Harwood, 2002; Lewis, 1997). Another way to make increase salience is to highlight them (see Wang, 2006). These approaches can be justified because of the lack of exposure to the target language outside of the classroom.

Second, EFL teachers who use textbooks with little or no explicit attention given to collocations are advised to compensate for this deficiency. Yuan and Lin (2001) encourage the teaching of word collocability in addition to single-word vocabulary instruction. Previous empirical studies have shown that direct collocation instruction has positive effects on learners' collocation learning (Chan & Liou, 2005) and language skill development (Lien, 2003; Hsu, 2002) because it raises learners' awareness of word collocability (Hill, Lewis, & Lewis, 2000; Lewis, 1997; McCarthy, 1984). Attention or noticing is essential in all learning. Moreover, it may also provide the additional exposure needed to ensure acquisition.

Finally, the Ministry of Education might consider providing more detailed criteria for collocations for new editions of high school English textbooks that writers/publishers can follow. In the 1995 guidelines (online), there are no concrete specifications for collocations other than a stipulation that English textbooks include example sentences and exercises for common collocations in the non-reading section for vocabulary practice. The lack of detailed guidelines may account for the low frequency of repetitions found in this study.

Analyzing a corpus comprised of the English textbooks used in senior high schools in Taiwan gives us a clearer picture of one kind of collocation that students are exposed to. Understanding the input students receive allows us to suggest ways to promote the acquisition of collocations, which we believe will enhance their ability to comprehend and produce them and contribute to their language competence and fluency.

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