

THE TREATMENT OF COLLOCATIONS IN ENGLISH TEXTBOOKS FOR VIETNAMESE STUDENTS

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Abstract: The present study investigates collocational profiles that appear in the English textbook series for Vietnamese students from elementary to high school grades by identifying how the series covers collocations in terms of frequency and how the mode of collocation presentation aligns with recommendations in the existing literature. A total of 30,005 collocations of both verb-noun and adjective-noun patterns were identified, of which 1,078 are targeted collocations. The study found that the frequencies of occurrences of collocation tokens increase steadily alongside the three grade levels, while the frequencies of collocation types are not distributed proportionately. As for the mode of collocation presentation, targeted collocations and collocation exercises follow the best practices recommended in the literature to a certain extent and in some criteria; inconsistency, however, was found to be one of the shortcomings across those evaluation criteria. Pedagogical implications for teachers and textbook authors are discussed.

Keywords: collocation, textbook, EFL, collocation exercise, collocation presentation

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The past few decades have witnessed a growing interest in collocation teaching and learning. Abundant evidence has been accumulated for the pervasiveness of collocations in any English discourse (Erman & Warren, 2000; Foster, 2013). Existing literature has also shown a significant correlation between learners' collocation knowledge and an advantage in language processing (Fernández & Schmitt, 2015; Hsu & Chiu, 2008; Wray, 2002). Knowledge of lexical phrases, collocations included, helps learners produce idiomatic language fluently (Boers & Webb, 2018; Pawley & Syder, 1983; Wray, 2005). Despite their importance, collocations have been found to be troublesome to language learners from a variety of different language backgrounds (e.g., German, Thai, Japanese, Taiwanese, Arabic, and Vietnamese) (Bahns & Eldaw, 1993; Cao & Badger, 2021; Huang, 2001; Koya, 2003; Mahmoud, 2005; Phoocharoensil, 2012) as well as those at different language levels (Laufer & Waldman, 2011; Nesselhauf, 2005). Collocations of verb-noun and adjective-noun patterns have been claimed to be the types encountered most often in English texts and the most problematic for learners attempting language production (Cao & Deignan, 2019).

There have been great attempts to discover effective methods for teaching collocations in L2 classrooms (Bahns & Eldaw, 1993; Hsu, 2010; Mahvelati, 2019). How collocations should be presented in textbooks to best facilitate learners' learning process is also an issue of great interest. Many scholars suggest that collocation presentation in the language input should attract

learners' attention to reinforce the memorizing process (Boers & Strong, 2016) and to raise learners' awareness of the collocational phenomenon which is believed to be the prerequisite for learners' self-accumulation of vocabulary (Peters, 2016; Webb et al., 2013). Many recommendations upon the selection of exercises and activities have also been put forward to minimize the risks of errors (Boers et al., 2014).

In the current era of technology, learners can approach the English language via different sources. It is, however, undeniably true that English textbooks are still the main source of exposure to the target language (Tomlinson, 2011). In the researchers' context of teaching, a new series of English textbooks was introduced in 2018 to teach English from elementary to high school nationwide. This set of textbooks was developed for Vietnamese students and was claimed to help learners master communication language skills equivalent to B1 in the Common European Framework of Reference (CEFR). As specified in Circular 32/2015 of the Ministry of Education and Training, by the time students graduate from high school the textbooks need to introduce to them around 2,500 to 2,800 words. These textbooks are in the pilot stage and are still being evaluated.

There have been few studies that evaluated English textbooks used in Vietnamese education system. To the best of our knowledge, Hoang (2015) is the only study that examined English textbooks for Grade 3 and Grade 4, but the aim of that study was to explore teachers' evaluation. There has been no empirical research on the treatment of collocations in this series of textbooks in particular, or in other English textbooks for Vietnamese learners of English in general. Given the importance of textbooks and collocations they provide, it is of great importance to examine collocation density, whether the series of textbooks presents a wide range of collocations, and whether the collocation presentation aligns with best practices recommended to help prepare students for both real life communication and academic study at tertiary level. The findings of the current study can raise teachers' and students' awareness of the importance of collocations in communication and in the teaching and learning of English. It also provides practical recommendations for the authors of the textbook series under evaluation in revising the textbooks, and for English textbook writers in general in developing other series of textbooks.

The following research questions have been formulated to guide our study:

1. How does the series of English textbooks for elementary, secondary and high school students in Vietnam cover collocations in terms of collocation tokens and collocation types?
2. How does the mode of collocation presentation align with recommendations in the existing literature?

Identifying Collocations

A collocation is identified differently depending on whether it is viewed from a frequency-based or phraseology-based approach. Scholars who adopt the frequency-based approach see collocations as recurrent patterns across large text collections (Clear, 1993; Sinclair, 1991; Stubbs, 2002). In some studies (Durrant & Schmitt, 2009; Nguyen & Webb, 2017), the MI-score and T-score are frequently used as statistical measures to identify the significant co-occurrence of words in a particular combination. In some other more recent studies (e.g., Cao & Deignan, 2019; Gablasova et al., 2016; Khoja, 2019), logDice has been used on the grounds that it operates

on a standardized scale with a fixed value (Rychlý, 2008), a feature that neither the MI-score nor T-score possesses (Hunston, 2002). LogDice also gives prominence to exclusive combinations without highlighting rare combinations, which makes it preferable to the MI-score (Gablasova et al., 2016).

In contrast, scholars adopting a phraseological approach regard collocations as phraseological units – word combinations in a particular grammatical pattern (Bahns & Eldaw, 1993; Cowie, 1994; Nesselhauf, 2005). The process of collocation identification from this point of view often involves the distinction between *free combination* and *idiom* (Benson, 1989). Restriction on substitutability and transparency in meaning are the two criteria most widely used to differentiate collocations from free combinations and idioms, respectively. Collocation identification from this standpoint is rather problematic in that it involves a very difficult series of choices in order to decide (1) whether the substitutability of an element in a combination is restricted or (2) whether a word is used with a literal or non-literal sense (Howarth, 1998). From the review of collocation identification, frequency counting of co-occurrence of words from corpora, which is an advantage of the frequency-based approach, is taken in this study. Following Cao and Deignan (2019), a logDice score of 4 or higher is taken as significant and combinations that meet this threshold will be considered collocations.

Pedagogic Recommendations on Collocation Presentation in English Textbooks

Research has shown that teaching vocabulary explicitly has brought significant effects in long-term retention (Nation, 2007), and this has been proven to extend to the teaching of collocations too (Bahns & Eldaw, 1993; Hsu, 2010). However, with the constraints of class time, explicit teaching of vocabulary, collocation included, to the expected level is a mission impossible to accomplish. At the same time, awareness raising is recommended as a remedy to compensate for the constraints (Webb et al., 2013). Equipped with an awareness of collocations, learners will learn them as they are encountered in the language input, whether they are targeted or not.

In a review of experimental studies published since 2004 on formulaic sequences in second languages, Boers and Strong (2016) propose separating the treatment of collocation in textbooks into three strategies: (1) attracting learners' attention to collocations in language input; (2) stimulating lookups from dictionaries or corpus tools; and (3) accelerating learners' acquisition for long-term retention. While attention is known to be a crucial first step in the vocabulary acquisition process, the majority of collocations in the language input are believed not to attract learners' attention owing to their transparent meanings (Hill, 2000; Lewis, 2000; Woolard, 2000). One suggestion to make up for this is to manipulate collocations in the language input so that targeted collocations are typographically enhanced (e.g., bolding, underlining, italicizing, highlighting, or adding L1 glossed collocations) (Nation, 2005; Peters, 2016; Tsai, 2015). Input enhancement has been found to bring about positive effects on learners' retention not only of single words (Goudarzi & Moini, 2012; Nation, 2005) but also of collocations (Fazlali & Shahini, 2019).

Directing learners towards collocation lookups in dictionaries and corpus tools can be done by highlighting targeted collocations in a text (Gürsoy, 2008). Though recommended as a

pedagogical treatment of collocations in textbooks, collocation lookups did not seem to bring the expected outcomes in some experimental studies – with the results of these studies showing quite low learning gains, ranging from fewer than 40 percent (Laufer & Waldman, 2011) to only 60 percent (Komuro, 2009). The low learning gains, however, were explained as a result of the interplay of several factors such as inconsistent lookups, no dictionary training, or being put off by the abundance of information (Laufer & Waldman, 2011).

Input flooding is the occurrence of the same sequences in a short stretch of discourse (Boers & Lindstromberg, 2012). A study on the relationship between input flooding and learners' retention rate shows that sizeable learning gains occur when the same word sequence is met 15 times and that the success rate reduces to 30 percent with only ten encounters (Webb et al., 2013). The importance of the number of encounters is also explored by Peters (2014) who found that the group of participants that encountered the same collocations five times gained better retention rates than the others. Webb and Kagimoto's (2010) study, however, found that engaging the same sequence of words three times led to it being retained. Although these studies have yielded mixed results, the general consensus is that the more frequent a string of words is encountered, the higher the possibility it will be recalled (Peters, 2016; Waring & Takaki, 2003; Webb et al., 2013). Input flooding has also been found to be of great benefit to long-term memory when a word sequence is recycled in different units of a textbook or even throughout a series of textbooks (Durrant, 2008; Lewis, 2000; Tsai, 2015; Wang & Good, 2007). It is true that in reality one would not often meet the same collocation used repeatedly in a short stretch of discourse (Boers & Lindstromberg, 2012), and as such, in this study we profile collocations used repeatedly in one unit instead of a single discourse. The recycling of collocations in different units in the textbooks used in one academic year will be examined instead of the whole series of textbooks, which runs for 12 academic years.

Further along the line of introducing collocations in textbooks, Snoder (2019) suggests introducing terminology of collocation as an awareness-raising strategy. Learners' awareness should be directed to the ubiquity of formulaic sequences, collocations included, and the phenomenon of restricted substitutability, a distinctive feature to free combinations. Recognizing the complexity of terminology, Snoder (2019) recommends that textbooks should only introduce terms of high value (e.g., node, collocation, collocate) to learners at the advanced level.

Numerous studies have shown that in order to accelerate learners' acquisition for long-term retention, collocations should be taught and learned deliberately (Laufer & Girsai, 2008; Peters, 2016). More and more English textbooks include exercises with deliberate attention to collocation practice (Boers & Lindstromberg, 2012). To maximize the effect of collocation introduction in textbooks, as Stengers and Boers (2015) suggest, learners should be asked to get familiar with the contextualized use of collocations in a text before practicing them in exercises with the aim of better retrieval and consolidation.

Exercises to assist collocation retention in EFL textbooks come in different formats. In a series of four trials to test the effectiveness of exercise variants, Boers et al. (2014) found that exercises requiring learners to reunite broken-up collocations only bring marginal learning gains of between 5 and 10 percent, and, more importantly, mistakes in practicing lead to errors in later collocation use. The 'connecting format', which asks learners to match verbs with nouns from a

given list of verbs and nouns to form collocations, and ‘choosing the correct verb’ from a number of options to fill in the blank in a sentence incorporating the other part of the collocation (the noun) are examples of error-prone exercises. Exercises requiring learners to choose from the same semantic set (e.g., *say, speak, talk* and *tell*) to form collocations have not been a welcome exercise format, it is claimed, for the same reason (Webb & Kagimoto, 2010). These authors also doubt the effectiveness of ‘find the odd one out’, ‘find the mistake’ or ‘correct the wrong collocation’ exercise formats for the reason that wrong associations may be retained in learners’ memory instead of being discarded. Given the discussion above, it seems that, with the above-mentioned exercise formats, enabling learners to become familiar with the target collocations is of utmost importance; otherwise, these exercises risk turning into a guessing game.

The suggestion of introducing collocations in exercises as intact units (e.g., *draw conclusion*) to minimize the risk of errors has been put forward in many studies (Boers et al., 2014; Warmington & Hitch, 2014; Webb & Kagimoto, 2010; Zaabalawi & Gould, 2017). Exercises that involve ‘inserting the collocation’ from a number of options (e.g., *make a suggestion, do business, pay attention*) into the blank part of a sentence (Boers et al., 2014), ‘inventing sentences’ that incorporate given collocations (Schmitt et al., 2011), or ‘matching the collocation with a definition’ (O’Dell & McCarthy, 2017), though not frequently encountered, are recommended as exercise formats that deal with unbroken collocations.

Given the above discussion, the selection and presentation of collocations in English textbooks should take into account these recommendations: (1) drawing learners’ explicit attention to targeted collocations, (2) providing learners information about collocations (e.g., terminology, etymological elaboration), (3) recycling collocations (4) introducing learners to exercises that minimize the risks of errors, and (5) providing learners activities to stimulate lookups from dictionaries and corpus tools.

Collocations in Textbooks

A few studies have investigated collocational profiles and the recycling of targeted collocations in EFL textbooks (Lee, 2015; Tsai, 2015; Wang & Good, 2007). In a study examining a three English textbook series used in Korean middle schools, Lee (2015) found that verb-noun collocations were used twice in the whole series. Wang and Good (2007) tabulated verb-noun collocations in Taiwanese high school textbooks and found that 80% of collocations was repeated only 1 to 5 times through the whole series of textbooks. Likewise, Tsai (2015), in his investigation of the three commonly used textbooks series used in Taiwan (Far East, Lungteng, and Sanmin) found that the highest frequency of collocation occurrence per 1000 words is 27.52 times. For diversity, the coverage of collocations from the three textbooks to an exhaustive list of high frequency collocations is 7.07%, 6.24%, and 7.2%. In regard to repetition, the study showed that 90% of collocations were repeated fewer than five times. By and large, results from these studies show that the number of occurrence of collocation types from the examined textbooks is far from being sufficient for learners to notice and learn the expressions accidentally. Another important finding shared among the three studies is that the more collocation types the textbooks introduce, the less collocations to be recycled on average.

Textbook Evaluation

Textbook evaluation, according to Tomlinson (2011), should primarily be based on the purpose of the evaluation. Once the purpose is identified, a checklist of criteria needs to be compiled based on the underlying principles of language teaching and acquisition. To the best of our knowledge, Wistrom's (2020) criteria checklist is the most recent and comprehensive criteria checklist for evaluation of collocation presentations in textbooks. The checklist was compiled based on the best practices recommended by Boers and Strong (2016), Nation (2007), Peters (2014), and Webb et al. (2013), whose studies have been reviewed above. It includes six evaluation questions about the extent to which textbooks (1) pay explicit attention to collocations, (2) provide information about collocations, (3) introduce collocations to effectively facilitate the learning, (4) provide exercises that ensure engagement, (5) provide exercises that minimize the risk of errors, and (6) provide exercises that increase the risk of errors. This criteria checklist was adapted for the present study. Further information about how it was adjusted will be detailed in the methodology section.

METHOD

The research aims to examine whether the textbooks present a wide range of collocations and whether the presentation of collocations aligns with the recommendations in the literature. As such, this study takes into account collocations occurring not only in vocabulary sections or exercises but also elsewhere in the textbooks, based on the argument that even though collocations may not be targeted, they can still be learned incidentally (Webb et al., 2013). We paid exclusive attention to verb-noun and adjective-noun collocation patterns since they are the most frequently encountered and the most problematic.

To address the research question about how the series of English textbooks cover collocations in terms of collocation types and collocation tokens, we followed a step-by-step procedure. First, we put together a corpus of English texts from the series of textbooks between Grade 1 and Grade 12. Then, all verb-noun and adjective-noun combinations were extracted from the corpus. Next, the researchers identified which of the extracted combinations are collocations by searching the British National Corpus (BNC) using a log Dice threshold of 4.0. All the non-collocation tokens were removed. Next, we tallied the number of collocation types and collocation tokens occurring in the textbooks for each grade. From these collocation types, we further identified targeted collocations by manually counting the collocation types in the vocabulary section in each unit.

To address the second research question 'How does the mode of collocation presentation align with recommendations in the existing literature?', we used a criteria checklist adapted from Wistrom's study (2020). In particular, we slightly changed the focus on the extent to which the textbooks pay explicit attention to collocations in terms of input enhancement, input flooding and glossaries instead of whether collocation types of verb-noun, adjective-noun, and adverb-adjective are targeted. This is because, as suggested by Boers and Strong (2016), making targeted collocations more salient to aid learners' retention is one of the three important strategies for collocation treatment in textbooks. Furthermore, for textbook evaluation, besides examining collocation coverage, presentation, recurring frequency, and exercises, activities are also a

crucial element to consider. They are of a ‘more interactive nature’ and have been claimed to ‘engage learners with longer stretches of discourse than the decontextualized sentences that are typical of exercises’ (Boers & Strong, 2016, p.141). It has been claimed that activities stimulating look-ups in dictionaries and using corpus tools have significant effects on learners’ collocation repertoires (Pakdaman & Gilakjani, 2019). Therefore, the question regarding the extent to which the textbooks provide exercises that ensure engagement was adjusted in the present study to enquire about activities. We believed this adaptation would bring us a better understanding of how collocations are introduced in the textbooks in order to facilitate learning. Table 1 presents a summary of the criteria and sub-criteria after being adapted.

Table 1. The Criteria Checklist

Evaluation criteria (adapted from Boers & Strong, 2016)	Sub-criteria
1. Paying explicit attention to targeted collocations	<ul style="list-style-type: none"> ● typographical enhancement ● times of recurrence in one unit ● L1 glossary
2. Providing information about collocations	<ul style="list-style-type: none"> ● awareness of L1-L2 difference ● introduction of terminology ● etymological elaboration of collocation
3. Introducing collocations to facilitate learning	<ul style="list-style-type: none"> ● exercises containing collocations ● exercises explicitly offering practice ● collocations being presented in contextual use before practicing ● times of recurrence in different units
4. Providing exercises that minimize the risk of errors	<ul style="list-style-type: none"> ● access to model input ● exercises with intact collocations ● exercises with hints
5. Avoiding exercises that increase the risk of errors	<ul style="list-style-type: none"> ● exercises with broken-up collocations ● exercises to find the odd one out ● exercises generating errors ● exercises relying on corrective feedback ● exercises containing collocations with semantically similar words
6. Providing activities ensuring engagement	<ul style="list-style-type: none"> ● looking for collocations in dictionaries ● looking for collocations in corpus-based resources

Before answering evaluation questions in the criteria checklist, first we identified the input enhancement techniques used by the textbook authors when they introduced collocations in each unit (e.g. bolding, underlining, or italicizing). Next, we identified the frequency of occurrence of collocation types in each unit and the frequency of repetition of collocation types across units in the textbooks for each grade. In addition, exercises containing or explicitly offering practice

of collocations in the textbooks were identified and classified according to whether they were likely to minimize or increase the risk of errors or not.

FINDINGS AND DISCUSSION

Findings

The first research question concerns collocation coverage in the series of English textbooks encompassing 12 academic years in terms of collocation types. To address this question, we extracted 21,016 combinations of verb-noun and 14,945 combinations of adjective-noun patterns from a corpus of 312,770 word tokens built from the textbook series. All of these combinations were then checked against the BNC for their logDice score. A total of 15,728 verb-noun and 14,277 adjective-noun combinations were identified as collocations with scores above the threshold 4.0. Among these, there were 10,778 verb-noun collocation types and 7,759 adjective-noun collocation types. The distribution of collocation tokens and collocation types across textbooks of different school levels is summarized in Table 2.

Table 2. Number of Collocation Tokens and Collocation Types in the English Textbook Series

Grades	Number of word tokens	Number of collocation tokens			Number of collocation types		
		V-N	Adj-N	Total	V-N	Adj-N	Total
<i>Elementary Grades 1-5</i>	28,800	1,306	640	1,946	592	232	824
<i>Secondary Grades 6-9</i>	142,580	7,037	6,029	13,066	5,179	3,673	8,852
<i>High school Grades 10-12</i>	141,390	7,385	7,608	14,993	5,007	3,854	8,861
Total	312,770	15,728	14,277	30,005	10,778	7,759	18,537

As can be seen from Table 2, there is a sharp increase in the number of collocation tokens and collocation types in the secondary textbooks compared to the elementary ones, despite the fact that there is one grade fewer at secondary level. However, there is not much difference in the number of collocation tokens and types of both patterns between the secondary grades and the high school ones. The frequency distribution of collocation tokens per 1000 words across the three grade levels is as follows: elementary level - 67.57 collocations, secondary level - 91.64, and high school level - 106. The frequency distribution of collocation types shows a different pattern. In particular, elementary textbooks present 28.61 collocation types per 1000 words; secondary textbooks present 62.08 collocation types, and high school textbooks present 62.67. There is almost no difference in the frequencies of occurrences of collocation types between secondary and high school grades, showing that despite being exposed to a large number of collocational exemplars, students would not encounter a more diversified distribution of collocation types at the higher level.

Table 3 summarizes the number of targeted collocations in the textbook series. It can be seen that the numbers of targeted collocations in the English textbooks across all the levels are much lower than the numbers of collocation types as presented in Table 2. Only 134 verb-noun collocation types were targeted in the elementary years, 168 in the secondary years, and 240 in the high school years. Likewise, there were only 48 adjective-noun collocations targeted in the elementary years, 199 in the secondary years and 289 in the high school years. The numbers of targeted collocations that occur frequently (more than three times) in each unit were also identified. Some of the most frequently used collocations are *give advice* (occurring 13 times in Unit 3 of the English 9 textbook), *wear uniform* (7 times in Unit 1 of the English 6 textbook), *free time* (35 times in Unit 13 of the English 5 textbook), and *natural disasters* (32 times in Unit 9 of the English 8 textbook). Occasionally, some collocation types were targeted in different units, e.g., *do housework* (12 times in Unit 1 and 7 times in Unit 6 of the English 10 textbook), *global warming* (72 times in Unit 6 and 6 times in Unit 11 of the English 11 textbook).

Table 3. Number of Targeted Collocations in the English Textbook Series

Grade	Targeted collocations					
	V-N		Adj-N		TOTAL	
	Total number	Total (> 3)	Total number	Total (> 3)	Total number	Total (> 3)
Elementary Grades 1-5	134	54	48	14	182	68
Secondary Grades 6-9	168	38	199	59	367	97
High school Grades 10-12	240	63	289	107	529	170
TOTAL	542	155	536	180	1078	335

The answer to the second research question about whether the mode of presentation of collocations aligns with the best practices recommended in the existing literature was based on the criteria checklist (see Table 1). The evaluation questions were answered based on the results of their sub-questions. Table 4 presents findings from the criteria checklist.

Table 4. Findings from the criteria checklist

Evaluation questions	Yes/No	If yes, which book (how many units)?
1. To what extent do the textbooks pay explicit attention to targeted collocations?		
a. <i>Are targeted collocations typographically enhanced?</i>	Yes	E2 (2); E3 (3); E4 (10); E5 (8); E11 (1); E12 (1)
b. <i>Do targeted collocations recur 4-6 or more times in one unit?</i>	Yes	E1-E5: 68 collocations E6-E9: 97 collocations E10-E12: 170 collocations

Evaluation questions	Yes/No	If yes, which book (how many units)?
c. <i>Are targeted collocations provided with L1 glossary?</i>	Yes	E3 (3) 6 collocations E4 (6) 13 collocations E5 (4) 5 collocations E6 (5) 5 collocations E7 (6) 11 collocations E8 (4) 12 collocations E 9 (6) 14 collocations E10 (5) 9 collocations E11(3) 3 collocations
2. To what extent do the textbooks provide information about collocations? a. <i>Do the textbooks make learners aware of L1-L2 differences?</i> b. <i>Do the textbooks introduce the terminology of collocations?</i> c. <i>Do the textbooks provide etymological elaboration of collocation?</i>	No No No	
3. To what extent do the textbooks introduce collocations to effectively facilitate learning? a. <i>Do the textbooks provide exercises that contain collocations?</i> b. <i>Do the textbooks provide exercises that explicitly offer practice with collocations?</i> c. <i>Are collocations presented in their contextualized use before being targeted in exercises?</i> d. <i>Do collocations recur 5 or more times in different units?</i>	Yes Yes Yes Yes	E2 (1); E3 (2); E4 (5); E5 (8); E6 (3); E7 (2); E9 (1); E10 (1); E11 (9); E12 (7) E3 (1); E4 (7); E5 (5); E6 (5); E7 (5); E8 (2); E9 (3); E10 (3); E11 (5) E3 (1); E4 (7); E5 (5); E6 (5); E7 (5); E8 (2); E9 (3); E10 (3); E11 (5) See Table 5
4. To what extent are the collocations exercises likely to minimize the risk of errors? a. <i>Do collocation exercises give learners access to model input to mine for correct answers?</i> b. <i>Do collocation exercises work with intact collocations?</i> c. <i>Are learners given hints in the exercise items?</i>	No Yes No	E2 (1); E3 (3); E4 (9); E5 (9); E6 (3); E7 (1); E8 (1); E10 (3); E11 (8); E12 (2)
5. To what extent are the collocation exercises likely to increase the risk of errors?		

Evaluation questions	Yes/No	If yes, which book (how many units)?
a. <i>Do collocation exercises require learners to reunite broken-up pairs?</i>	Yes	E3 (1); E4 (1); E5 (4); E6 (5); E7 (7); E8 (3); E9 (5); E10 (1); E11 (7); E12 (7)
b. <i>Do collocation exercises ask learners to find the odd one out?</i>	No	
c. <i>Do collocation exercises generate errors?</i>	No	
d. <i>Do collocations exercises rely on corrective feedback?</i>	No	
e. <i>Do exercises contain collocations with semantically similar words?</i>	No	
6. To what extent do the textbooks provide collocation activities that ensure sufficient engagement?		
a. <i>Do collocation activities urge learners to look for the required information themselves in collocation dictionaries?</i>	No	
b. <i>Do collocation activities urge learners to look for the required information themselves in corpus-based resources?</i>	No	

Note: E1 (2): textbook English 1 (2 units).

As for the first evaluation question, the answers to all of its sub-questions are positive, suggesting that the series of textbooks pays explicit attention to the targeted collocations. Collocations are typographically enhanced, most frequently by highlighting, in English textbooks for elementary and high school levels. However, not all the targeted collocations are typographically enhanced. Specifically, the textbooks for secondary grades do not pay explicit attention to the typography of collocations, whereas the textbooks for high school grades offer little typographical information with only one unit in grades 11 and 12. Furthermore, 335 out of 1,078 targeted collocations occur repeatedly (4-6 times or more) in one unit, and 78 are provided with a L1 glossary to facilitate learners' learning. Inconsistency was found in the presentation of L1 glossaries among the textbooks. In particular, all the textbooks for secondary grades present an L1 glossary of targeted collocations, while some textbooks for elementary and high school grades do not. In those textbooks with glossary sections, the L1 glossary is presented at the end of the textbooks, serving a look-up function like a mini dictionary rather than focusing learners' attention on the targeted collocations in the unit. Generally, collocation presentation modes of the textbooks do not strictly follow a consistent design scheme.

For the second evaluation question, no positive answer is given to any of the three sub-questions, meaning that the textbooks do not make learners aware of L1-L2 differences or provide information about terminology, nor do they explain collocation etymologically. For the third evaluation question, a positive answer is given to all four sub-questions, showing that some exercises in the textbooks not only contain but also offer practice in collocation use. They also

introduce collocations in their contextualized setting before encouraging learners to practice. A number of collocations are also repeated in five or more units in the textbooks for Grades 4 to 12 (see Table 5).

Table 5. Repetition of Collocations across Units

Textbooks	Number of collocations repeated in 5 or more units		
	V-N	Adj-N	TOTAL
E1	0	0	0
E2	0	0	0
E3	0	0	0
E4	6	0	6
E5	0	1	1
E6	13	7	20
E7	13	6	19
E8	21	8	29
E9	16	12	28
E10	3	6	9
E11	15	9	24
E12	17	10	27

Close scrutiny of the targeted collocations revealed that a substantial number of them (68 verb-noun, 55 adjective-noun) are duplicated in different units of different grade books (e.g., *ride a bike* and *give advice* found in 7 units, *electronic device* and *natural environment* found in 6 units).

For the fourth evaluation question, a positive answer is given in one out of three sub-questions, revealing that the exercise formats do not provide learners with model input or hints to mine for correct answers. For the fifth evaluation question, a positive answer is given to one out of five sub-questions, meaning that the exercises require learners to reunite broken-up pairs but not to find the odd one out, generate errors, rely on corrective feedback or deal with collocations with similar semantic sets. No positive answer is given to the sub-questions of the last evaluation question, showing that no activities in the series of textbooks urge learners to look for information about collocations in dictionaries or corpora.

Discussion

The study found that there is an increase in the number of collocation tokens and collocation types from one grade to another in the English textbooks; however, they are disproportionately distributed among the three textbook levels. The substantial rise in the number of collocations in the secondary grades compared to the lower grades is understandable when considered in relation to the text length of the teaching materials. Textbooks at elementary level mostly contain very short and simple sentences and song lyrics; therefore, they have low collocational density.

The increase in the number of targeted collocations is appropriate for the level upgrade from elementary to secondary and high school grades, and as such, it meets the requirements and targets specified in Circular 32/2015 of the Vietnamese Ministry of Education and Training.

The frequency of distribution of collocation tokens per 1000 words of elementary textbooks (the lowest of the three levels) is 67.57 times, much higher than that of the textbook Far East in Tsai's (2015) study, 27.52 times. Such a big frequency distribution gap between the two textbook series is highly likely due to the fact that Tsai focuses on only verb-noun collocations whereas in this study the focus is on both verb-noun and adjective-noun collocations. Another reason for this could lie on the choice of statistical measures in collocation identification. Tsai (2015) filtered collocations by using MI-score and t-score while log-Dice score of 4 was taken as the threshold in this study. The equal distribution of collocation diversity in the high school textbooks compared to the secondary ones shows that the textbook authors were limited in choice of appropriate materials to increase learners' exposure to collocation types in the language input of the high school textbooks. Some of the same collocations are targeted in different units in the textbook series. This suggests that the textbook authors, despite having a concrete plan regarding the number of collocations to be brought to the learners' attention, did not pay close enough attention to the occurrence of the targeted collocations. Considering the constrained and valuable class time, the repetition of some targeted collocations is a wasted effort. Therefore, careful attention should be devoted to reviewing targeted collocations to avoid repetition (Tsai, 2015).

The answer to the first evaluation question about whether explicit attention is paid to collocations in all the textbooks offers an insight into textbook design, compilation and further editing. In terms of collocation presentation modes, to some extent, learners are not being made aware of the instances where targeted collocations are introduced, even though certain input enhancement techniques such as bolding, italicizing, underlining, highlighting, colouring, or adding L1 glossed collocations are employed. The inconsistency in highlighting targeted collocations, italicizing them and glossing their Vietnamese equivalents in textbooks across the three levels might reduce learners' explicit focus on the targeted collocations. A possible reason for this might be found in the textbook design and compilation processes, which permit the participation of different authors or groups of authors.

Besides typographical enhancement, input flooding, a useful tactic for drawing attention, was also found to be employed to some extent in the textbook series. Out of 1,078 targeted collocations, 335 recur more than three times in the units that they are introduced in, which is a remarkable number, in consideration of input flooding among other choices that material authors can make to excite learners' attention. However, in consideration of the great learning gains that collocation repetition provide (Peters, 2014; Webb et al., 2013), more targeted collocations appearing in different exercise formats or activities is advisable. Together with typographical enhancement and input flooding, L1 glossaries of targeted collocations were also used in the textbooks. However, the inclusion of a glossary at the end of each unit in the high school textbooks serves as a reference or consolidation rather than a focus of attention. Given the presentation modes, it is arguable that the textbook series does not align well with recommendations from Boers and Strong (2016) and Fazlali and Shahini (2019).

Finding from the second evaluation question shows that the textbooks do not provide information about L1-L2 differences, etymological explanation, or the terminology of collocations, which does not align with recommendations from Snoder (2019) and Boers and Lindstromberg (2012). There are two possible reasons for this: (1) textbook authors might underestimate the importance of these aspects in vocabulary presentation, assuming that the understanding of meanings and contextualized use of collocations is more significant than the knowledge of related information; and (2) they might contemplate that it would increase the burden on learners at low level due to their limitations in language perception and competence. The same problem has been pointed out by Wistrom (2020) in his study of the textbook *Blueprint 3.0*, in which Wistrom confirms that ‘collocate’ is the only terminology used. If the L1-L2 differences are not noticed and none of the exercises targeting collocations takes translation into consideration to enable a better understanding of etymological collocations and their equivalents, the teaching and learning of collocations are limited to academia rather than authentic situations. While look-ups using corpus tools and dictionaries have been recommended to broaden learners’ collocation repertoire (Boers & Strong, 2016), a negative answer to all three sub-questions means that textbooks do not support learners’ autonomy. The absence of clearly-defined terminology of collocation may affect the study of collocations. Learners can be familiar with the meanings and usages of targeted collocations in their textbooks but fail to identify them in other learning materials.

Regarding the extent to which the textbooks introduce collocations to effectively facilitate learning, positive answers to all of the four sub-questions indicate that most of the textbooks in the series provide learners with sufficient exercises, practice, contextualized usage, and frequency to improve their learning of collocations. Specifically, 10 out of the 12 textbooks contain exercises including collocations, which can indirectly offer learners practice and knowledge about collocations. Of the six criteria in the evaluation checklist, results of this criterion and its sub-criteria best comply with recommendations suggested by Boers and Lindstromberg (2012) and Boers and Strong (2016). In terms of repetition of collocations across units, it is understandable that textbooks for grades 1, 2, and 3 feature zero frequency. Learners at these three elementary grades start to learn separate words as the basis of vocabulary build-up; collocations, therefore, are not the focus. The collocation repetition is clearly found across units in the higher-level textbooks with a rather small number of collocations recurring five or more times. This, in turn, argues for a supplement of collocations with higher recurring frequency and greater numbers.

It is worth noticing that the textbooks do not give learners access to model input with which to mine for correct answers, causing learners to predict or rely on their own answers. This may lead to some trial and error in an attempt to figure out the precise usage of collocations in certain contexts, which Boers and Strong (2016) advise against. Given that learners are not provided with sufficient model input, clear instructions on exercises targeting collocations are required to minimize the risk of errors. Furthermore, the textbooks are expected to give learners hints or examples of the precise use of targeted collocations in the exercise instructions. Considering the presentation of collocations as intact items in the textbooks for all grades, collocation exercises are believed to decrease the risk of errors. However, the fact that exercises in the textbooks for high school grades work more with broken-up than intact collocations puts the high school

learners at risk of giving incorrect answers. To minimize those risks, certain adjustments and supplementary collocation exercises are needed for the grade 12 textbook.

The present study found that some kinds of collocation exercises that are likely to increase the risk of errors, such as ‘finding the odd one out’ and ‘generating errors’, are not included in the textbooks across all grades. Exercises that ask learners to reunite broken pairs are, however, widely employed, even though the possibility of incorrect answers may lead to false memorization and errors in later use. Therefore, the selection of this exercise format should be conducted with great caution to avoid turning it into a guessing game and thereby a wrong way to learn (Boers & Lindstromberg, 2012). Targeted collocations presented in lists of broken units and enabling multiple combinations to form collocations at the same time should be introduced with examples of model use to avoid generating errors and reliance on corrective feedback. Moreover, the negative answers to questions about the reliance on corrective feedback for collocation exercises and the inclusion of semantically similar words show that the selected collocation exercises in the textbooks do not increase the risk of errors.

The last evaluation question examines the collocation activities introduced in the textbooks. The lack of tasks or activities urging learners to look for information in collocation dictionaries or using corpus-based resources may affect the learner’s interest in collocations, their autonomy and learning motivation. In this respect, the textbook series does not align with the recommendations by Boers and Strong (2016). This same problem was also found in the textbooks *Blueprint 3.0* and *English I* in Wistrom’s (2020) and Koya’s (2003) study, respectively. The necessity of integrating collocation activities to foster learners’ involvement and accelerate learners’ acquisition for long-term retention is undeniable. Classroom activities should be implemented that equip learners with research skills and learning strategies to independently acquire the bulk of collocations. Teachers can also urge learners to use collocation dictionaries and corpus tools to look up the meanings and contextualized use of targeted collocations. Textbook authors are advised to offer appropriate classroom activities that will enable sufficient engagement with these collocations.

Last but not least, by following the recommendations to teachers, textbook authors can also develop their lists of common targeted collocations for use at elementary, secondary and high school levels to meet the requirements of both collocation teaching and textbook evaluation. Certain adaptations and adjustments should also be made in future editions to minimize these shortcomings as much as possible. Even though enough of such alterations might not be implemented in time, the study findings indicate that the textbook authors are moving towards a more directed approach to collocations, aligning with the trend in EFL vocabulary teaching and learning contexts.

CONCLUSIONS

This study is the first attempt to examine the collocational profiles of the English textbooks for Vietnamese students and to investigate whether the mode of collocational presentation aligns with recommendations in the literature. The findings of the study highlight the importance of selecting procedure in avoidance of the duplication of targeted collocations in different units. The textbooks pay explicit attention to collocations and facilitate the learning of them to a certain

extent, and the international trend of paying explicit attention to collocation exercises in textbooks could be linked to Vietnam. However, more attention should be given to the consistency of the design scheme throughout the textbook series. For textbook revision, further work is needed to understand whether targeted collocations are frequently used and whether they are recycled to facilitate learners' acquisition.

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