

The Use of International Business Management Collocations by Thai EFL Speakers

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Abstract

Although there has been a plethora of collocation research, little attention has been placed on collocations in the field of International Business Management (IBM). Employing the notion of interlanguage variation, this study aims to investigate what collocations in the IBM field are difficult for Thai learners to produce and to determine their pattern of IBM collocational use. This study also examines whether proficiency and different test types significantly affect learners' use of IBM collocations. Under investigation, target collocations included adjective-noun and noun-noun collocations relevant to IBM. Sixty Thai university students divided into advanced and upper intermediate groups were asked to participate in the study. Sources of data stemmed from two types of test materials: collocation judgement tests where the participants were requested to decide whether a group of words was a collocation and fill-in-blank tests where they were required to produce a collocate appropriate for a given situation. As demonstrated, only the advanced learners could acquire IBM noun-noun collocations in the fill-in-blank test with ease. Both groups of participants appeared to have employed the same pattern of IBM collocational use. The findings further portrayed that proficiency and the test materials administered to collect the data significantly interfered with the participants' pattern of IBM collocational use. The results lend initial support to devising learning materials aligned with learners' level of proficiency, first language knowledge, and familiarity with some collocates required for certain nodes in English language classrooms. Useful suggestions for further research are also provided.

Keywords: collocations, interlanguage variation, proficiency, test differences, Thai EFL learners

Introduction

It is widely recognized that research concerning the learning process of collocations has captured the attention of a number of second language scholars (e.g., Boonyasquan, 2006; Hong, Rahim, Hua, & Salehuddin, 2011; Phoocharoensil, 2011; Suranakkharin, 2017; Yamashita & Jiang, 2010). Defined as word combinations that frequently co-occur in spoken and written discourse (Gyllstad & Wolter, 2016; Sinclair, 1991; Webb, Newton, & Chang, 2013), collocations serve a variety of communicative purposes; they allow learners to produce the target language more fluently and to become more proficient (Barfield & Gyllstad, 2009; Peters, 2014). In Thailand, this body of research has also gained popularity among a plethora of scholars attempting to discover how Thai learners produce collocations during the learning process (e.g., Boonyasquan, 2006; Bueraheng, 2014; Phoocharoensil, 2011; Yumanee & Phoocharoensil, 2013). However, previous research investigating the use of second language collocations related to the field of International Business Management (hereafter IBM) is quite limited (Bargiela-Chiappini & Zhang, 2013; Hong, Hua, & Mengyu, 2017). Other issues which have received little attention within the context of Thailand are the order of IBM collocational use and the effects of proficiency and types of tests on learners' IBM collocational use. As a result, this study aims to answer the following research questions.

1. What adjective-noun and noun-noun collocations in the field of IBM are problematic to acquire for Thai learners divided into advanced and upper intermediate groups?
2. What is the pattern of IBM collocational use among Thai learners?
3. Does the role of proficiency have a significant impact on Thai learners' pattern of IBM collocational use?
4. Do different test materials significantly influence Thai learners' pattern of IBM collocational use?

Generated by this study, the results should help to clarify the learning processes of IBM collocations among Thai learners. Also, research evidence emerging from this study should provide researchers with pivotal insights into English pedagogies, such as designing learning materials appropriate for individual learners' learning style preferences and research issues in the field of second language acquisition.

Review of the Related Literature

The literature review section begins with the definitions of collocation. Next, the section deals with the notion of the interlanguage hypothesis employed as the main conceptual framework of this study. Last, the section provides prior relevant studies discussing the rationale behind this investigation.

Definitions of Collocations

As initially established by Firth (1957), the term *collocation* refers to a group of words that co-occur frequently in corpora. Since then, research regarding collocations has received much attention among a wide variety of researchers (e.g., Boers et al., 2006; Sinclair, 1991). Due to this fact, definitions of collocation have been created in diverse ways. By collocation, Sinclair (1991), for example, means word combinations where two or more words tend to occur together. Webb, Newton, and Chang (2013) regard collocations as combinations of words that occur together more in natural text than would occur at random. A collocation can also be defined as the occurrence of a word combination greater than by chance in a certain context (Hong et al., 2017). As defined by Hill (2000), collocations mean word combinations which can be predicted. For example, the adjective *strong* tends to co-occur with the noun *tea*, as in *strong tea*.

Collocations under investigation refer to combinations of words that frequently co-occur and are semantically transparent (Laufer & Waldman, 2011; Wolter & Gyllstad, 2011). Specifically, within the British National Corpus (BNC), the collocate *economic*, instead of *economy*, has a tendency to frequently occur with the word *development* as in *economic development* and it is thus considered highly semantically transparent. Regarding semantic transparency, the collocation *economic development* distinguishes itself from idioms whose meanings cannot be immediately understood from their constituent words.

The advantage of defining collocations from a frequency-based standpoint is that scholars can identify second language collocates easily for a particular node. For instance, collocates that can co-occur immediately after the word *business* may include *investment*, *meeting*, and *partner*, as determined from the BNC. In this study, target IBM collocations such as *total sales*, *business partner*, and *data collocation* are adopted from a corpus-based collocational study carried out by Hong et al. (2017). Based on the frequency-based approach, Hong et al. analyzed adjective-noun and noun-noun collocations which are frequently used in the field of IBM. Target collocations, namely adjective-noun and noun-noun collocations, are appropriate for this study because they have been proved collocations

in the domain of IBM. As noted earlier, the IBM collocations in this study are chosen on account of their statistical strength of occurrence and semantic transparency. That is, IBM collocations under investigation are determined based on how frequently a particular combination of words occurs together in corpora. Also, collocations in this study are semantically transparent; they are different from idioms whose meanings are less transparent than those of collocations.

The Interlanguage Hypothesis

There is no doubt that the notion of interlanguage has received considerable attention among a number of second language acquisition researchers (Nickel, 2009; Pallotti, 2017). Interlanguage can be used to describe learners' competence and describe their linguistic performance. In fact, the interlanguage notion is useful to describe the learning process in diverse ways. For example, it may be useful to describe what learners lack to become proficient in the target language which results in insightful implications for both research and instruction (Pallotti, 2017). Within interlanguage, research also helps provide the teacher with simplifying strategies which can be used in communicative processes. In addition, this interlanguage phenomenon can help ameliorate the backsliding process where patience and tolerance are required by the teacher (Nickel, 2009). As has been noted, it is worth mentioning that interlanguage can help teachers understand the difficulties learners may face during the learning process better and therefore also help them judge and evaluate phenomena relevant to interlanguage with better understanding.

Accordingly, in order to help expand understanding of the mechanisms underlying the use of collocations among Thai learners from the domain of IBM, it is commensurate to apply the interlanguage hypothesis, an essential framework within the study of second language acquisition (Pallotti, 2017), to the current study. By interlanguage, Selinker (1972) refers to a learner's systematic knowledge observable in his or her production of the target language. This linguistic system is separable to both the learner's native language and target language.

In shaping interlanguage, there are five cognitive processes involved (Selinker, 1972, 1992). The first process deals with language transfer. This process is prevalent when a user transfers his or her native language rules to target language counterparts. The second cognitive process involves transfer of training. Within this process, a learner applies some structures they have learned from textbooks or teachers to learning target structures. The third process is known as strategies of second language learning. Regarding this process, learners apply certain strategies in order to master the target language structure. The fourth process concerns strategies of second language communication. Within this process, learners employ various communicative strategies in order to express meanings in a context where they do not fully master target language structures. The last process is overgeneralization of target language rules. This process means that learners use a particular linguistic rule from one context in another where such a rule is not required. In interlanguage, these five cognitive processes are important to account for how second language learners develop a particular structure (Selinker, 1972, 1992).

As James (2007) has proposed, interlanguage can also be viewed as an example of learners' learning transfer, the application of certain learners' second language skills and knowledge. For instance, if a learner has developed second language skills and knowledge by performing certain tasks (e.g., fill-in-blank tasks and multiple-choice tasks) and transfers such skills and knowledge when doing other tasks (e.g., writing business letters and public

speaking), he or she is transferring the learning outcomes. This phenomenon helps inform teachers of useful insights into designing learning materials appropriate for individual learners (Song, 2012).

In interlanguage, there exists variation which can determine whether a language learner has fully mastered a particular linguistic element (Pallotti, 2017). Variation in interlanguage refers to a certain context where a learner uses various forms to express only one correct form. For example, a language learner of English variably marks plurality on the noun *brother* as in the sentence *I have three brother (s)*. Variation, the most vital characteristic of interlanguage (Nickel, 2009), is noticeable in interlanguage on account of various potential factors, such as learners' first language transfer (see e.g., Sumonsriworakun & Pongpairroj, 2017; Selinker 1972) and the use of tests (see e.g., Tarone, 1985; Tarone & Parrish, 1988). Interlanguage variation can be separated into inter-learner and intra-learner variation (James, 2007). The first variation means language use differences between learners or groups of learners, whereas the latter refers to differences in language use within an individual learner. In addition, variation in interlanguage can be separated into diachronic and synchronic. Diachronic variation refers to language use differences which appear over time, whereas synchronic variation refers to differences in language use that occur at a given point in time (e.g., learners carry out different tasks). Tarone (1985), for instance, investigated the acquisition of English grammatical features such as plural *-s* and third person singular *-s* among Arabic and Japanese speakers in three different test materials, namely a written grammar test, oral interview test, and oral narrative test. The results revealed that the participants' use of the target variables differed enormously within the tests given. This research evidence is interesting and useful in that it helps to reflect on the questions of why the participants could transfer their second language skills or knowledge successfully in one test, but could not do it well in another. The scope of this paper covers the variation which occurs between two groups of learners at a given point in time, seeking to determine whether the two constraints of proficiency and test type affect variation in the use of adjective-noun and noun-noun collocations among Thai learners. To establish whether a learner does not vary in the accuracy of his or her target collocation production, 80% is generally accepted as a criterion level. Since employed in previous interlanguage studies (e.g., Carlisle, 2006; Eckman, 1991), this research also aims for an 80% criterion to determine interlanguage variation in IBM collocational use among Thai learners.

To summarize, interlanguage refers to learners' separable linguistic system which is dependent of both first language and second language. During the interlanguage system, variation can be pervasive due to various causes. Under investigation, the variation observed is specifically restricted to adjective-noun and noun-noun collocations in the field of IBM. This study also scrutinizes two factors: proficiency and task types that would constrain variation.

Previous Related Studies

Although past studies on the use of collocations within the Thai EFL context have been substantial (e.g., Boonyasquan, 2006; Meechai & Chumworathayee, 2015; Phoocharoensil, 2011; Sanguannam, 2017), little is known about how learners develop collocations in the field of IBM. As such, this study aims to investigate what adjective-noun and noun-noun IBM collocations are difficult for Thai learners to acquire. Another aspect unaddressed in other relevant studies concerns the pattern of IBM collocational use which helps to clarify whether the two determinants: the role of proficiency and the use of different test materials significantly contribute to the learners' acquisition of IBM collocations.

This study is considered significant in various ways. First, studies of collocations in academic settings geared specifically toward the field of IBM have received little attention among second language researchers (Ackermann & Chen, 2013; Simpson-Vlach & Ellis, 2010). Thus, as an emerging trend in business studies in the Asian context (Bargiela-Chiappini & Zhang, 2013; Hong et al., 2017), investigating the use of IBM collocations among Thai learners should offer teachers useful insights into teaching English for Specific Purposes (ESP). Essentially, the findings of this study could help offer insightful guidelines on ESP learning and teaching relevant to business studies. In addition, as supported by Song (2012), research geared specifically toward learners with different proficiency levels helps us fully understand whether they use the same mechanism in learning a particular language structure. More importantly, implications derived from the issue of proficiency provide teachers with useful insights into learner differences, which would result in a more effective selection of methods for English language teaching. The issue concerning test types would also provide insightful implications, particularly for designing appropriate learning materials for English language learners.

There is no doubt that the use of collocations is an interesting research issue amongst international scholars from around the world. Previous research has revealed that collocations pose difficulty for learners from various first language backgrounds. One relevant study carried out by Nesselhauf (2003) explored the acquisition of verb-noun collocations such as *take a break* and *shake one's head* by high proficiency German learners. The research data were collected from the participants' written essays. Research evidence shows that these advanced participants had tremendous difficulty in producing collocations. One potential explanatory account for such difficulty of collocational usage is the learners' native language. The learners supplied *make*, which is available in German, instead of *do* for the target-like collocation *do homework*. The findings lend support to the teaching of incongruent collocations in English language classrooms and suggest that the learners' first language can provide significant insights into the teaching of second language collocations. Hong et al. (2011) carried out a corpus-based study into verb-noun collocations among Malaysian learners of English. The data were gathered from the learners' essays and were then analyzed based on two theoretical frameworks: interlanguage and error analysis. It was revealed that the participants experienced difficulties in using target collocations. The results also indicated that intralingual transfer (e.g., overgeneralization and ignorance of rule restrictions) appeared to be the most significant source of collocational errors.

In addition, Namvar, Mohd Nor, Ibrahim, and Mustafa (2012) investigated Iranian postgraduate students' production of lexical and grammatical collocations. This research sought to investigate whether the learners' first language and their cultural background had a significant impact on their use of collocations. The students' performance in academic writing was the focus for the data analysis. Also, a focus group interview was conducted to determine whether the learners' first language and cultural background were attributed to the use of collocations. The results indicated that the learners found target collocations difficult to produce in their writing. It was found that the first language influenced the use of lexical and grammatical collocations among these learners. Cultural differences between the use of the learners' native language and English also played a crucial role in collocational errors committed by the participants. Namvar (2012) examined the use of lexical and grammatical collocations among Iranian postgraduate students with intermediate proficiency. The students' data were collected from multiple choice and written tests. In the multiple-choice test, the students were asked to choose the best answer for a given test item, while they were

required to write about an unforgettable experience in the written test. As demonstrated, the students found both lexical and grammatical collocations difficult. Furthermore, the findings showed that first language transfer was the most dominant source of deviant collocations and knowledge of collocations could be a good indicator of learners' proficiency in English. Also, Yamashita and Jiang (2010) investigated whether first language transfer caused variation on the acquisition of second language collocations among native English speakers, Japanese speakers learning English as a second language (ESL), and Japanese speakers learning EFL. A phrase-acceptability judgement test with both embedded congruent and incongruent collocations was developed to measure the learners' competence of collocations. The findings showed that ESL and EFL learners committed more incongruent collocational errors than the congruent counterparts. However, the ESL learners made fewer collocational errors than their EFL counterparts did. Yamashita and Jiang proposed that the effect of first language on the ESL learners' performance of collocations was also minimal. They offered three potential explanations which account for the findings: (1) once stored in memory, second language collocations are acquired independently of first language, (2) congruent collocations influence the acquisition of collocations, and (3) incongruent second language collocations themselves are difficult for learners to acquire.

In Thailand, most studies have focused on general collocational use restricted to lexical and grammatical collocations by learners differing in English proficiency levels; however, the question of whether proficiency causes variation in the use of IBM collocations has not been taken into account. Although research data have come from various test types, it is evident that their effects on the use of IBM collocations have also not received much attention. For example, Boonyasaquan (2006) investigated collocational errors in English-Thai translation texts among business English students. She pinpointed that collocational structures such as adjective-noun and noun-noun collocations posed tremendous difficulty to Thai university students. Mongkolchai (2008) further investigated the use of English collocations among 57 English majors in a Thai university. A test with two parts: sentence completion and multiple choice was administered to gather data from the participants. The findings revealed that the participants produced lexical collocations more easily than grammatical ones. More specifically, the participants produced noun-noun and adjective-noun collocational structures more easily than adjective-preposition structures. Mongkolchai indicated that the collocational errors found were caused by the participants' limited knowledge of collocations and first language transfer.

Phoocharoensil (2011) subsequently examined collocational errors among Thai learners from advanced and low proficiency groups. The findings gathered from the learners' essays showed that they encountered difficulties with learning collocations such as verb-noun, noun-verb, and adjective-noun. He elaborated that the learners' native language transfer seemed to be the most common cause of collocational error. Another relevant study was also undertaken by Phoocharoensil (2013), who observed whether cross-linguistic influence affected Thai learners' production of second language collocations (e.g., verb-preposition and adjective-preposition). Two groups of high- and low-level competency participants took part in his study. The participants were asked to write a 60-minute timed essay in class. As emerged from the findings, the participants found collocations difficult to acquire and hence mainly employed native language transfer as a learning strategy.

Additionally, Yumanee and Phoocharoensil (2013) analyzed collocational errors produced by Thai EFL learners. They also investigated whether such errors were due to first language transfer. The participants included 60 high school students who were divided into

two groups of low proficiency ($N = 30$) and high proficiency ($N = 30$). A multiple-choice test and a Thai-to-English translation were constructed to gather data from the participants. As shown, the participants had difficulty using English collocational structures such as adjective-noun and verb-noun collocations. It was also revealed that first language transfer played a pivotal role in the use of English collocations among these participants.

Similarly, Phoocharoensil (2014) sought to investigate erroneous collocations produced by Thai participants. In his study, two groups of students with advanced and low English competency levels were required to write essays. Target collocations such as adjective-preposition and verb-preposition collocations were included. It emerged that native language interference seemed to be the most outstanding factor contributing to the collocational errors committed. Bueraheng (2014) analyzed the use of verb-noun and adjective-noun collocational structures among 196 Thai university students divided into an international program and an English major program. Of this study, the data came from receptive and productive collocation tasks. The results indicated that the two groups of participants had difficulty using the target collocations. The findings further indicated that they scored significantly better on receptive knowledge than productive knowledge, and the participants from the international program outperformed those from the English program. In this study, the learners' first language transfer and limited knowledge of collocations were considered plausible causes of the collocational errors. Kittigosin and Phoocharoensil (2015) additionally studied the use of delexical structures, an essential component of collocations such as *make a mistake*. Two groups of participants with different proficiency levels: high and low took part in the study. The data were collected from the participants' performance on a gap-filling translation test. The findings showed that both groups of learners produced various deviant target collocations and first language transfer tended to constrain such collocational deviation enormously.

Meechai and Chumworathayee (2015) also examined the use of verb-noun collocations among Thai EFL learners. In this study, university students divided into a Thai program group ($N = 30$) and an English program group ($N = 30$) were asked to participate. These participants were asked to perform Thai-English translation and gap-filling collocation tests. The findings showed that the participants from the English program produced verb-noun collocations more easily than those from the Thai program. It was found that insufficient collocational knowledge and first language transfer were two major sources of the collocational errors found among the participants. The collocational errors found among the English program participants relied on their lack of collocational knowledge. For example, the participants tended to produce *make responsibility*, a deviant English collocation, instead of *take responsibility*, a more acceptable form in English. The errors produced by the Thai program participants were mainly attributed to first language transfer. For example, the participants produced the deviant English collocation *make time*, which also existed in Thai, for the target collocation *take time*.

Furthermore, Chorbwhan and McLellan (2016) investigated the acquisition of English collocations among Thai learners and whether their first language Thai was the cause of such collocational errors. In this study, 39 Patani Malay and 39 southern Thai speakers were involved. Productive and receptive tests were administered to gather data from the participants. In the productive test, the participants were encouraged to produce a particular collocate used appropriately with the node given in each item. Thai translations which functioned as prompts were also provided with this type of test. In the receptive test, the participants were encouraged to decide whether a collocation given was appropriately used in

English. The findings showed that the Thai participants had difficulty learning English collocations such as verb-noun and adjective-noun collocations. It was also revealed that negative first language transfer played a pivotal role in the acquisition of collocations among these learners.

Another related study was conducted by Sanguannam (2017), who studied the use of verb-noun collocations among Thai students. The study focused specifically on collocations whose forms were congruent in the first language and in the second language and incongruent. Two groups of intermediate and advanced learners of English were asked to carry out multiple-choice and semi-controlled sentence tests. The results demonstrated that the advanced learners could learn collocations better than their intermediate counterparts across the tests administered. It was also found that incongruent collocational items were more difficult than congruent items for both groups of participants to acquire. Sanguannam further indicated that the multiple choice test helped trigger collocational use among the advanced learners more effectively than the semi-controlled test. This is probably due to the fact that productive knowledge of collocations is more complicated than receptive knowledge.

To summarize, previous studies have focused primarily on the use of general collocations among learners from diverse first language backgrounds. Nevertheless, studies into collocations geared specifically toward the field of IBM, particularly in the context of Thailand, have received little attention among second language acquisition scholars. In addition, it is evident that the effects of proficiency and test type on learners' use of IBM collocations have not been systematically taken into account in previous studies. Accordingly, this study aims to investigate which target IBM collocations create difficulty for Thai learners and whether proficiency and test differences cause interlanguage variation in the use of IBM collocations by Thai learners.

Research Methodology

This study is based on a cross-sectional research design which aims to collect data at only one specific point in time. As discussed earlier in the literature review section, it is evident that research regarding the use of collocations in the field of IBM is unaddressed in the context of Thailand. Consequently, this study attempts to bridge this gap by investigating whether adjective-noun and noun-noun collocations in the domain of IBM are problematic for Thai learners to acquire and to investigate whether proficiency and test types cause variation in the use of IBM collocations among Thai learners. This study is therefore designed in order to achieve these goals. This section presents the participants of this research, research instruments, and procedures of data collection and analysis.

Participants

The selection of the participants is mainly to answer whether the role of proficiency causes interlanguage variation in the use of IBM collocations by Thai learners. In this research, the participants consisted of 60 Thai university students divided into an advanced group ($N = 30$) and an upper intermediate group ($N = 30$) according to their scores on Oxford Placement Test 1. As developed by Allen (2004), Oxford Placement Test 1 included two parts: listening and grammar. In this study, only the grammar part with 100 test items was selected. Oxford Placement Test 1 was selected on the basis that it is an efficient, reliable method of placing the participants into appropriate levels of proficiency. The participants whose scores ranged between 81 and 100 were assigned in the advanced group, whereas those whose scores ranged between 61 and 80 were placed in the upper intermediate group.

The choice of these participants was decided on the basis of two reasons. First, this study aimed to investigate whether the role of proficiency produced a significant impact on Thai learners' use of IBM collocations. Thus, the classification of these students into two groups with different proficiency levels could help clarify this question. Second, it is evident that previous related studies geared specifically toward advanced and upper intermediate learners have received little attention within the context of Thailand. Most previous studies (e.g., Yumanee & Phoocharoensil, 2013; Kittigosin & Phoocharoensil, 2015) have focused mainly on learners with high and low proficiency. This issue would provide useful pedagogies for teachers who work with heterogeneous learners. As supported by Song (2012), research geared specifically toward learners with different proficiency levels helps us fully understand whether they use the same mechanism in learning a particular language feature. She further advocates that implications derived from the issue of proficiency would lead to various effective teaching strategies, particularly learners' learning strategies. For this reason, the current study opts to investigate whether the issue of proficiency directly affects Thai learners' use of IBM-based collocations.

Research Tools

This study aims to investigate adjective-noun and noun-noun collocations in the field of IBM. As the focus of this study, adjective-noun and noun-noun collocations were selected based on two reasons. Firstly, adjective-noun and noun-noun collocations play a vital role in academic writing as they are used in academic texts more frequently than in other registers (Biber et al., 1999; Hong et al., 2017). Secondly, it is discovered that adjective-noun and noun-noun collocations in academic writing are more difficult than in other registers (Biber et al., 1999; Hong et al., 2017). Thus, taking into account these types of IBM collocations certainly helps inform educators of how to effectively teach IBM collocations in English classes in general and in academic writing relevant to the field of IBM in particular (Hong et al. 2017).

In this study, IBM-based collocations were extracted from a corpus-based study carried out by Hong et al. (2017). In their study, Hong et al. utilized the frequency-based approach to analyze adjective-noun and noun-noun collocations in journal articles associated with the field of IBM. The data were gathered from 79 research articles in an international referred journal, i.e. *Journal of International Business Studies*, which is indexed in Thomson Reuters and achieves a high impact factor annually. The selection of these adjective-noun and noun-noun collocations relevant to the field of IBM is appropriate for this study as they have been thoroughly proved as IBM collocations by a corpus-based collocational study (Hong et al., 2017).

The selection criteria for target collocations are explicitly described as follows. First, 40 IBM-based collocations (20 for each collocational type) were extracted at random from a corpus-driven study of Hong et al. (2017). The selected IBM collocations were then verified to ensure their frequency in the British National Corpus (BNC), a 100 million word collection of written and spoken English language samples from various sources such as journals, books, and regional and international newspapers. The BNC was chosen in this study as it offered the frequent and appropriate use of collocations in natural settings (Durrant, 2009; Wijitsopon, 2017; Yumanee & Phoocharoensil, 2013). In other words, the BNC was further employed to make certain that target adjective-noun and noun-noun collocations in the field of IBM are frequently used in natural contexts. As adopted from the corpus-based study of Hong et al. (2017), the minimum cut-off score used to determine whether the selected IBM collocations were appropriate for this study was established at 10 times per million words. In

this regard, all collocations initially determined were considered appropriate and hence qualified for task construction.

As described earlier, 20 adjective-noun and 20 noun-noun collocations relevant to the field of IBM were randomly selected from a corpus-based study carried out by Hong et al. (2017). The selected collocations were then reexamined against the BNC to ensure their frequency. In developing test materials, these 20 adjective-noun and 20 noun-noun collocations were further analyzed to ensure their content validity. In the analysis, four English language experts were involved. Three experts were Thai instructors of English whose specialization was in applied linguistics. The other, a native speaker of English, was also an instructor of English, whose area of expertise centered on applied linguistics. The test materials were determined for content validity by means of *Index of Item Objective Congruence* (IOC) method where there were three choices (1 = certain that test items can truly reflect the research objectives; 0 = uncertain that test items can truly reflect the research objectives; and -1 = certain that test items cannot truly reflect the research objectives) made available for the English language experts to select (Berk, 1984; Rovinelli & Hambleton, 1977). Only test items with more than .75 IOC value determined by the four English language experts were regarded statistically significant (Turner & Carlson, 2003) and therefore appropriate for the current study. In this regard, there were only 10 adjective-noun and 6 noun-noun collocations in the collocation judgment test (see Appendix A), while there remained 8 adjective-noun and 8 noun-noun collocations in the fill-in-blank test (see Appendix B) which were considered statistically significant (IOC value > .75).

Before administered to gather the current data, the tests were piloted with 15 university students. The aims of carrying out a pilot study were to gauge the reliability of the test items and to detect whether any further errors could be found in the tests. As determined by Cronbach's alpha coefficient, the collocation judgement test had reliability at $\alpha = .80$ and the fill-in-blank test accompanied by the first language Thai translation at $\alpha = .82$. Statistically, these values are considered significantly reliable (Tavakol & Dennick, 2011) and appropriate for this study.

In summary, IBM adjective-noun and noun-noun collocations under investigation were developed from a corpus-based collocational study carried out by Hong et al. (2017). Again, the selected IBM collocations were determined against the BNC to ensure that they were frequently used in everyday English and appropriate for this study. These types of IBM collocations presented in both collocation judgment and fill-in-blank tests were then determined for content validity known as IOC. Only test items with more than .75 IOC value were piloted with 15 university students to ensure that they were statistically reliable for the actual study. As revealed, both tests were proved significantly reliable ($\alpha \geq .80$) and thus appropriate for collecting the current data.

Procedures of Data Collection and Analysis

In this study, the participants were required to sign a form of consent to make certain that they were not forced to participate. The participants were studied utilizing two tests: collocation judgement and fill-in-blank. In this regard, the participants were allocated 20 minutes to complete each test.

In the data analysis, there were two major stages involved: the scoring stage and the statistical analysis stage. In the first stage, the test materials were determined by a Thai research assistant and the researcher. This process assisted in confirming that the data gathered from the participants were valid. The research assistant was a doctoral lecturer whose expertise was in applied linguistics and the researcher was a lecturer whose expertise

was in English language teaching. Previously they had experience teaching English at the university level for more than eight years.

In this study, the following criteria were used to score the participants' performance in IBM collocations. Under investigation, the participants were studied utilizing the two tests: collocation judgement and fill-in-blank. Only one and zero points were used to score their performance in IBM collocations. In the collocation judgment test, one point was given to each participant in case he or she could produce a new accurate combination for a certain word combination which was not appropriately used in English. In the fill-in-blank test, one point was also given to each participant in case he or she was able to write one word which was appropriately used with the word in italic in each item. As discussed in the literature, this study employed interlanguage variation to determine whether learners fully acquired a particular structure. By interlanguage variation, various forms are used to express only one accurate form (Pallotti, 2017; Selinker 1972). This characteristic indicates that such a form has not been fully acquired. In order to ensure that variation in the use of IBM collocations did not exist among the current participants, spelling mistakes in both collocation judgment and fill-in-blank tests were counted as zero points.

In short, the participants' performance in IBM collocations was determined by a lecturer of English and the researcher. One point was assigned to accurate answers without any spelling error. In addition, inaccurate responses were considered zero points.

In terms of statistical analysis, the following procedures were involved. Statistically, there were parametric and nonparametric tests involved. In this research, preliminary analyses were performed in order to decide which type of statistical test was appropriate for the interpretation of the current data for Research Question 1. In other words, normality tests were conducted to measure whether the data set of this study was well constructed with a normal distribution. As the sample size was less than 50, the Shapiro-Wilk test was selected for the analysis and illustrated in Table 1. Before the analysis, it is essential to define the variable notation and formulate hypotheses for clarity as follows.

1. AN-CJT-A represents the score of adjective-noun collocations in the collocation judgement test among the advanced participants.
2. NN-CJT-A represents the score of noun-noun collocations in the collocation judgment test among the advanced participants.
3. AN-FBT-A represents the score of adjective-noun collocations in the fill-in-blank test among the advanced participants.
4. NN-FBT-A represents the score of noun-noun collocations in the fill-in-blank test among the advanced participants.
5. AN-CJT-U represents the score of adjective-noun collocations in the collocation judgement test among the upper intermediate participants.
6. NN-CJT-U represents the score of noun-noun collections in the collocation judgment test among the upper intermediate participants.
7. AN-FBT-U represents the score of adjective-noun collocations in the fill-in-blank test among the upper intermediate participants.
8. NN-FBT-U represents the score of noun-noun collocations in the fill-in-blank test among the upper intermediate participants.

It should be noted here that the aforementioned notation is also referred to in the findings section. To better understand statistical analysis, it is necessary to form two hypotheses as: $H_0 = \text{the population comes from a normal distribution}$ and $H_1 = \text{the population does not come from a normal distribution}$. H_0 is declined if Sig is less than $\alpha .05$ as indicated in Table 1.

Table 1 *Test of Normality*

Variable	Shapiro-Wilk		
	Statistics	df	Sig
1. AN-CJT-A	.893	30	.006
2. NN-CJT-A	.873	30	.002
3. AN-FBT-A	.952	30	.187
4. NN-FBT-A	.901	30	.009
5. AN-CJT-U	.853	30	.001
6. NN-CJT-U	.751	30	.000
7. AN-FBT-U	.948	30	.146
8. NN-FBT-U	.919	30	.026

As can be seen in Table 1, there were only two variables: AN-FBT-A (*Sig* .187 > α .05; *H₀* is confirmed) and AN-FBT-U (*Sig* .146 > α .05; *H₀* is confirmed) which came from normal distributions. Hence, it was reasonable to perform a One Sample T-Test under parametric tests to analyze AN-FBT-A and AN-FBT-U. For the rest, the Wilcoxon Signed Rank Test under nonparametric tests was more appropriate. Again, two hypotheses need to be formed for clarity as follows: $H_0 \geq 80\%$ and $H_1 < 80\%$. In this investigation, 80% refers to the criterion level of collocational acquisition proposed by previous second language studies (e.g., Carlisle, 2006; Eckman, 1991). *H₀* is declined if *p* is less than α .05, which indicates that the mean score of a certain collocation is less than 80% and hence is problematic for learners to acquire. In short, these two statistical tests were employed to analyze the present data for Research Question 1. They include the One Sample T-Test, as further described in Table 2 and Wilcoxon Signed Rank Test, which is explicitly explained in Table 3 in the findings section.

In answering Research Question 2, the Friedman Test was performed. This statistical test aims to measure the mean rank of each collocational type (see Table 4). Two hypotheses are required for Research Question 2 as follows: *H₀* = *the average score of each target collocation is the same as others* and *H₁* = *the average score of each target collocation is not the same as others*. *H₀* is declined if *p* or *Asymp.Sig* is less than α .05.

For Research Question 3 and Research Question 4, the MANOVA technique was selected to analyze the data, which is further detailed in Table 5. In order to answer Research Questions 3 and 4, two hypotheses based on the MANOVA need to be constructed as well. Thus, two hypotheses are formulated as: *H₀* = *the participants' proficiency and tests have no effect on the score multivariate* and *H₁* = *the participants' proficiency and tests have an effect on the score multivariate*. *H₀* in both Research Question 3 and Research Question 4 is declined if *Sig* is less than α .05.

In summary, the statistical tests employed to analyze the current data included a One Sample T-Test, Wilcoxon Signed Rank Test, Friedman Test, and MANOVA. The One Sample T-Test and Wilcoxon Signed Rank Test aimed to answer whether target IBM collocations pose difficulties to Thai learners. The Friedman Test revealed the pattern of IBM collocational use among participants. Lastly, the MANOVA was utilized to see the effects of proficiency and test differences on learners' pattern of IBM collocational use.

Research Findings

This study investigates whether adjective-noun and noun-noun collocations in the field of IBM are problematic for Thai learners to acquire and whether the role of language proficiency and test type significantly cause variation in their collocational use. Corresponding to the aforementioned research questions, the findings analyzed based on advanced statistical tests are outlined as follows.

Use of IBM Collocations among Advanced and Upper Intermediate Groups

As explained in the data analysis section, the normality test was performed to determine whether all variables under investigation came from a normal distribution. From the analysis, there are two variables which came from a normal distribution: AN-FBT-A and AN-FBT-U (see Table 1 for further details). In an attempt to answer Research Question 1, these two variables were analyzed based on the One Sample T-Test as follows.

Table 2

Use of Adjective-Noun Collocations in fill-in-blank Tests by Advanced and Upper Intermediate Groups

Test Value = 6.4				
Target Variables	t	df	Sig. (2-tailed)	Mean Differences
AN-FBT-A	-3.691	29	.001	-1.06667
AN-FBT-U	-5.008	29	.000	-1.60000

As shown in Table 2, t -3.691 and *Sig. (2-tailed)* .001 from AN-FBT-A and t -5.008 and *Sig. (2-tailed)* .00 for AN-FBT-U are less than α .05 ($t < 0$ and $\frac{\text{Sig.}(2\text{-tailed})}{2} < \alpha$). As analyzed in light of the One Sample T-Test, the findings show that adjective-noun collocations from fill-in-blank tests (AN-FBT) are problematic for both advanced and upper intermediate groups. Table 3 below also provides results for Research Question 1.

Table 3

Use of IBM Collocations by Advanced and Upper Intermediate Groups

IBM Collocations	p	Wilcoxon Test	Estimated Median
Advanced group			
1. AN-CJT-A	.00	.00	5.00
2. NN-CJT-A	.00	3.00	3.00
3. NN-FBT-A	.79	219.00	6.00
Upper intermediate group			
4. AN-CJT-U	.00	.00	4.50
5. NN-CJT-U	.00	.00	2.50
6. NN-FBT-U	.00	.00	2.50

As presented in Table 3, IBM collocations were analyzed based on the Wilcoxon Signed Rank Test under nonparametric tests. Again, if p is less than α .05, H_1 is confirmed. However, if p is higher than α .05, H_0 is confirmed. As shown in Table 3, p .79 for NN-FBT-A is higher than α .05. However, p .00 for AN-CJT-A and NN-CJT-A for the advanced group as well as AN-CJT-U, NN-CJT-U, and NN-FBT-U for the upper intermediate group is less than α .05. Therefore, it is concluded that only NN-FBT-A did not cause any difficulty for the advanced learners.

In short, the One Sample T-Test under parametric tests and the Wilcoxon Signed Rank Test under nonparametric tests were employed to analyze data for Research Question 1. The findings reveal that only NN-FBT-A did not cause difficulties for the advanced learners ($p .79 > \alpha .05$).

Patterns of IBM Collocational Use by Advanced and Upper Intermediate Groups

In an attempt to answer Research Question 2, the Friedman Test was conducted. This statistical test aims to measure the mean rank of each collocational type. There are two hypotheses formulated to provide the findings for this question. Two hypotheses include $H_0 = \text{the average score of each collocation is the same as others}$ and $H_1 = \text{the average score of each collocation is not the same as others}$. Again, H_1 is confirmed if *Asymp.Sig* is less than $\alpha .05$.

Table 4

Patterns of IBM Collocational Use by Advanced and Upper Intermediate Groups

Order	Mean Ranking	Asymp.Sig	Chi-Square	Df
Advanced group				
1. NN-FBT-A	6.67	.00	105.31	7.00
2. AN-FBT-A	5.38	.00	105.31	7.00
3. AN-CJT-A	4.73	.00	105.31	7.00
4. NN-CJT-A	2.50	.00	105.31	7.00
Upper intermediate group				
1. NN-FBT-U	5.95	.00	105.31	7.00
2. AN-FBT-U	4.68	.00	105.31	7.00
3. AN-CJT-U	4.43	.00	105.31	7.00
4. NN-CJT-U	1.65	.00	105.31	7.00

Table 4 shows that *Asymp.Sig* for all IBM collocations is less than $\alpha .05$. Therefore, it is concluded that both groups of learners produced noun-noun collocations in fill-in-blank tests (henceforth NN-FBT) in the earliest stage. They used adjective-noun collocations in fill-in-blank tests (henceforth AN-FBT), adjective-noun collocations in collocation judgment tests (henceforth AN-CJT), and noun-noun collocations in collocation judgement tests (henceforth NN-CJT) in Stages 2, 3, and 4, respectively (*Asymp.Sig* $0.00 < \alpha .05$). In addition, the chart below illustrates the participants' patterns of IBM collocational use.

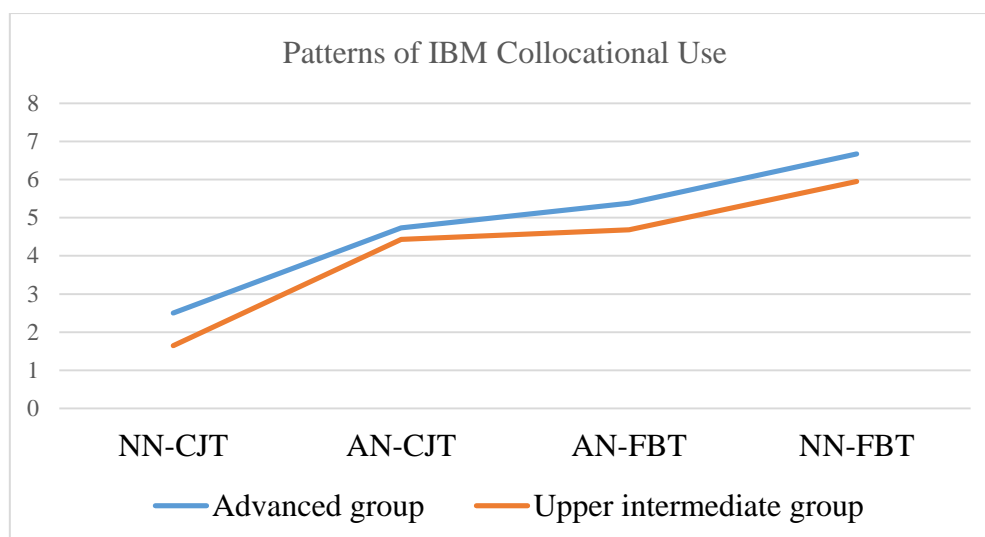


Figure 1

Patterns of IBM Collocational Use by Advanced and Upper Intermediate Groups

In Figure 1, the chart illustrates that advanced learners acquired NN-FBT first, followed by AN-FBT, AN-CJT, and NN CJT. The same pattern holds for upper intermediate learners. Based on the findings, it can be concluded that both groups of learners used NN-FBT first, AN-FBT second, AN-CJT third, and NN-CJT fourth.

Effects of Proficiency and Test on IBM Collocational Use among Advanced and Upper Intermediate Groups

In order to answer Research Questions 3 and 4, the MANOVA test was appropriate for the data analysis. This test aims to answer whether two factors: proficiency and test differences produce any effect on the participants' IBM collocational use. Table 5 below shows the findings for Research Questions 3 and 4.

Table 5

Effects of Proficiency and Test on IBM Collocational Use among Advanced and Upper Intermediate Groups

Variables	Types of statistic tests	Values	Hypothesis df	Error df	Sig
Proficiency	Pillai's Trace	.06	2.00	115.00	.04
Test	Pillai's Trace	.68	2.00	115.00	.00

Based on the MANOVA test, two hypotheses were established as follows: H_0 = proficiency and test have no effect on the score multivariate and H_1 = proficiency and test have an effect on the score multivariate. As discussed, H_1 is confirmed if Sig is less than α .05. As indicated in Table 5, Sig .04 for proficiency and Sig .00 for test are less than α .05. From the results, it is concluded that proficiency and test differences cause interlanguage variation in the use of IBM collocations by Thai learners at the level of significance (Sig .04 and Sig .00 < α .05).

Discussion

Of this study, the findings portrayed that Thai learners found IBM collocations difficult to acquire. Interestingly, the advanced group did not have difficulty with NN-FBT collocations. With respect to patterns of collocational use, the two groups of participants used target IBM collocations following the same pattern; they used NN-FBT first, AN-FBT second, AN-CJT third, and NN CJT fourth. In addition, proficiency and different tests administered significantly affected variation in the learners' use of IBM collocations.

Although the collocations under investigation were oriented toward the field of IBM, it is not surprising that these target components posed considerable difficulty to the current learners. This phenomenon is supported by several previous studies. For example, Peters (2014) bolsters that learners tend to find English collocations more difficult to acquire than single words. Peters (2014) and Skehan (1998) further explain that the learning burden of collocations is probably due to the fact that learners have difficulty processing the actual properties of a certain collocation in comparison with those of a single word. Similarly, a number of relevant studies in the context of Thailand lend support to the claim that collocations are difficult for English language learners. For example, Boonyasaquan (2006) indicated that Thai learners have difficulty with collocational structures such as adjective-noun and noun-noun collocations. In addition, Phoocharoensil (2011) revealed that collocations, namely adjective-noun collocations are difficult for Thai learners to acquire. Yumanee and Phoocharoensil (2013) further support that English collocations such as adjective-noun and noun-noun collocations cause difficulty for Thai learners. From the findings, it is apparent that the Thai learners found IBM collocations difficult to learn.

As shown in the findings, the participants' learning burden of IBM collocations significantly varies according to their level of English proficiency and the test type. It is therefore indispensable to discuss the key findings of this study in accordance with such two factors.

Regarding the level of difficulty in collocational use, the advanced learners produced all target collocations more easily than the upper intermediate ones did. However, both groups of learners apparently strikingly used the same learning strategy in learning IBM collocations under investigation. That is, advanced and upper intermediate learners have learned NN-FBT and AN-FBT before NN-CJT and AN-CJT. This suggests that learners' proficiency can show their level of vocabulary knowledge, which is useful for teachers when designing learning materials and conducting English classes. The premise that learners' language proficiency can be an effective indication of knowledge of collocations is supported by several researchers. Namvar (2012), for instance, supports that learners' proficiency level positively affects the increasing use of second language collocations. Sanguannam (2017) also bolsters that advanced learners use more appropriate second language collocations than less advanced ones do. From the current findings, it is revealed that both types of learners generate IBM collocations in the same way. Therefore, teachers can pay considerably more attention to NN-CJT and AN-CJT, which are the two most problematic items for Thai learners with advanced and upper intermediate proficiency. From a pedagogical perspective, this would also help facilitate teachers to design appropriate learning materials and conduct classes in a similar fashion (Song, 2012).

In addition, it is revealed that the use of different test materials has an effect on the learning of IBM collocations among Thai learners. To put it differently, the design of the test materials may cause variation in the learners' use of IBM collocations. As discovered in this

study, the scores from NN-FBT and AN-FBT are higher than those of NN-CJT and AN-CJT. This is probably due to the fact that the first language Thai translation provided with each target item in the fill-in-blank test is the contributing factor. To further demonstrate, the noun required for the noun *period* is *time* as in *time period* (see Item 3 in Appendix B). In this item, there was the Thai translation which was considered a salient feature for the participants. Therefore, it is possible that the learners produced NN-FBT and AN-FBT more easily than NN-CJT and AN-CJT because of the Thai translation provided with the fill-in-blank test. This assumption is supported by numerous scholars. As proposed by Jiang (2000), in an initial stage of the vocabulary learning process, learners comprehend the meaning of a word relevant to an existing semantic feature, which is closely associated with their native language. In order to help them remember the word, learners connect it to an L1 translation. Ozaki (2011) also supports that the first language enables Japanese learners to enhance their knowledge of second language collocations. He further notes that students with low-level language competency effectively benefit from the aid of first language in learning second language collocations. As commented on by Nickel (2009), exercises with well-planned translations from learners' first language into the second language as a remedial learning strategy can be useful to facilitate the second language learning process. From this emerging evidence, it can be concluded that the first language translation assigned to each target item as a prompt may have helped facilitate both groups of learners to generate NN-FBT and AN-FBT collocations (see Appendix B) more easily than their NN-CJT and AN-CJT counterparts (see Appendix A).

One possible explanation that should not be overlooked is that both groups of learners were more familiar with nouns and adjectives functioning as collocates in the fill-in-blank test than those in the collocation judgment test. That is, the learners may have been familiar with the collocate *home* required for the node *country* as presented in the fill-in-blank test than the collocate *data* required for the node *collection* as embedded in the collocation judgement test. The premise that familiarity with some collocates required for certain nodes is supported by Ozaki (2011) who asserts that exercises designed based on words familiar to students can help to foster the learning of second language collocations. Zhang (2017) also supports that collocational structures which are familiar to second language learners produce a positive effect on the learning process. Probably both first language as a translation prompt and known or familiar collocates required for certain nodes may facilitate learners to produce NN-FBT and AN-FBT before NN-CJT and AN-CJT collocations. However, this premise is not convincing without further thorough and systematic investigations.

To summarize, the participants of this study had difficulty learning IBM collocations. Both groups of participants used IBM collocations in the same pattern, suggesting that they employed the same strategy in learning second language IBM collocations. In addition, it was found that the difficulty of IBM collocational use varies according to the learners' proficiency and the test type. Of this study, these two factors were discussed to account for the results. It was also discussed that the learners' knowledge of some collocates for certain nodes may have facilitated their use of IBM collocations. The present research adds to our understanding that tests or learning materials accompanied by the knowledge of the learners' first language and designed with familiar words can be a learning strategy to adopt for activating the learning of IBM collocations.

Conclusion and Recommendations for Further Studies

This study has investigated which IBM collocations were difficult for Thai learners and the pattern of IBM collocational use. This study has also determined whether the two determinants of proficiency and test type had any significant effect on the learners' IBM collocational use. The results showed that only NN-FBT did not constitute any problem for the advanced group. The findings further revealed that both the learners' proficiency and the test type caused variation in their use of IBM collocations. These emerging findings have been explained on account of the learners' level of proficiency and familiarity with some collocations for certain nodes. The test type has also been discussed as a factor contributing to the use of IBM collocations among the learners.

Arising from this study, several limitations should be considered. First, as shown in the findings, the two groups of advanced and upper intermediate learners produced target IBM collocations in the same pattern. This evidence indicates that they use the same learning strategy for learning IBM collocations, which certainly helps offer teachers useful insights for designing learning materials and conducting classes in the same fashion. However, this study has not considered learners with less proficiency, and it is reasonable to assume that less competent learners may not produce the pattern of IBM collocational use in the same way as the participants of this study. Teachers or researchers are therefore recommended to take into account this gap as a focus for further research, which could help offer useful insights into designing learning materials in teaching second language IBM collocations. In addition, this issue can help provide second language teachers with useful insights into learners' learning strategies and leaning style preferences (Song, 2012; Oxford, 1990, 2003).

One limitation that should also be noted here deals with types of collocations. As investigated in the study, adjective-noun and noun-noun collocations were recruited from a corpus-based collocation study geared specifically toward the field of IBM (Hong et al., 2017). The findings of this study may not coincide with those focusing on collocations in other disciplines. Therefore, second language scholars are suggested to carry out studies on the use of collocations in other disciplines such as social sciences, health sciences, or engineering. This will be useful for both teachers and learners of English for Specific Purposes (ESP) or English for Academic Purposes (EAP).

Emerging from the findings of this study, the administration of different test materials significantly interfered with Thai learners' use of IBM collocations. This evidence has been explained by learners' first language and their background knowledge of certain collocates. Accordingly, teachers working with learners are suggested to design learning materials relevant to their specific first language with familiar words, which can be accomplished by means of experimental research. More specifically, teachers can design learning tasks based on first language translation techniques (see e.g., Laufer & Girsai, 2008). They can devise learning materials associated with learners' first language (see e.g., Nesselhauf, 2003; Ozaki, 2011) and their background knowledge which can be taught in the form of known or familiar words (see e.g., Barcroft, 2006; Zhang, 2017) to measure the impact on collocational learning gains.

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References

- Ackermann, K., & Chen, Y. (2013). Developing the academic collocation list (ACL) - A corpus-driven and expert-judged approach. *Journal of English for Academic Purposes*, 12, 235-247.
- Allen, D. (2004). *Oxford placement test 1*. Oxford: Oxford University Press.
- Barcroft, J. (2006). Can writing a word detract from learning it? More negative effects of forced output during vocabulary learning. *Second Language Research*, 22, 487-497.
- Barfield, A., & Gyllstad, H. (2009). Introduction: Researching L2 collocation knowledge and development. In A. Barfield & H. Gyllstad, (Eds.), *Researching collocations in another language: Multiple interpretations* (pp. 1-18). London: Palgrave Macmillan.
- Bargiela-Chiappini, F., & Zhang, Z. (2013). Business English. In B. Paltridge & S. Starfield, (Eds.), *The handbook of English for specific purposes* (pp. 193-211). Oxford: John Wiley & Sons Inc.
- Berk, R. A. (1984). Conducting the item analysis. In R. A. Berk (Ed.), *A guide to criterion-referenced test construction* (pp. 97-143). Baltimore: The Johns Hopkins University Press.
- Biber, D., Johansson, S., Leech, G., Conrad, S., & Finegan, E. (1999). *Longman grammar of spoken and written English*. Harlow, Essex: Longman.
- Boers, F., Eyckmans, J., Kappel, J., Stengers, H., & Demecheleer, M. (2006). Formulaic sequences and perceived oral proficiency: Putting a lexical approach to the test. *Language Teaching Research*, (3), 245-261.
- Boonyasquan, S. (2006). An analysis of collocational violations in translation. *MANUTSAT PARITAT: Journal of Humanities*, 27(2), 79-91.
- Bueraheng, N. (2014). *Receptive and productive knowledge of verb+noun and adjective+noun collocations of international program and English major students of Prince of Songkla University*. Unpublished master's thesis, Prince of Songkla University, Thailand.
- Carlisle, R. S. (2006). The sonority cycle and the acquisition of complex onsets. In B.O. Baptista & M.A. Watkins (Eds.), *English with a Latin beat: Studies in Portuguese/Spanish-English interphonology* (pp. 105-137). Amsterdam: John Benjamins Publishing Co.
- Chorbwhan, R., & McLellan, J. (2016). First language transfer and the acquisition of English collocations by Thai learners. *Southeast Asia: A Multidisciplinary Journal*, 16, 16-27.
- Durrant, P. (2009). Investigating the viability of a collocation list for students of English for academic purposes. *English for Specific Purposes*, 28, 157-169.
- Eckman, F. R. (1991). The structural conformity hypothesis and the acquisition of consonant clusters in the interlanguage of ESL learners. *Studies in Second Language Acquisition*, 13, 23-41.
- Firth, J. R. (1957). *Papers in linguistics, 1934 -1951*. Oxford: Oxford University Press.
- Gyllstad, H., & Wolter, B. (2016). Collocational processing in light of the phraseological continuum model: Does semantic transparency matter? *Language Learning*, 66(2), 296-323.
- Hill, J. (2000). Revisiting priorities: From grammatical failure to collocational success. In M. Lewis (Ed.), *Teaching collocation: Further development in the lexical approach* (pp. 47-69). London: Commercial Colour Press Plc.
- Hong, A. L., Hua, T. K., & Mengyu, H. (2017). A corpus-based collocational analysis of noun premodification types in academic writing. *3L: The Southeast Asian Journal of English Language Studies*, 23(1), 115-131.

- Hong, A. L., Rahim, H. A., Hua, T. K., & Salehuddin, K. (2011). Collocations in Malaysian English learners' writing: A corpus-based error analysis. *3L: The Southeast Asian Journal of English Language Studies*, 17, 31-44.
- James, M. A. (2007). Interlanguage variation and transfer of learning. *IRAL - International Review of Applied Linguistics in Language Teaching*, 45(2), 95-118.
- Jiang, N. (2000). Lexical representation and development in a second language. *Applied Linguistics*, 21, 47-77.
- Kittigosin, R., & Phoocharoensil, S. (2015). Investigation into learning strategies and delexical verbs use by Thai EFL learners. *3L: The Southeast Asian Journal of English Language Studies*, 21(2), 63-72.
- Laufer, B., & Girsai, N. (2008). Form-focused instruction in second language vocabulary learning: A case for contrastive analysis and translation. *Applied Linguistics*, 29, 1-23.
- Laufer, B., & Waldman, T. (2011). Verb-noun collocations in second language writing: A corpus analysis of learners' English. *Language Learning*, 61(2), 647-672.
- Meechai, D., & Chumworathayee, T. (2015). Verb + noun collocational competence of Thai university EFL students: A comparative study of a regular program and an English program. *Language Education and Acquisition Research Network (LEARN) Journal*, 8(2), 145-160.
- Mongkolchai, A. (2008). *A study of university students' ability in using English collocations*. Unpublished master's project, Srinakharinwirot University, Thailand.
- Namvar, F. (2012). The relationship between language proficiency and use of collocation by Iranian EFL students. *3L: The Southeast Asian Journal of English Language Studies*, 18(3), 41-52.
- Namvar, F., Mohd Nor, N. F., Ibrahim, N., & Mustafa, J. (2012). Analysis of collocations in the Iranian postgraduate students' writings. *3L: The Southeast Asian Journal of English Language Studies*, 18(1), 11-22.
- Nesselhauf, N. (2003). The use of collocations by advanced learners of English and some implications for teaching. *Applied Linguistics*, 24(2), 223-242.
- Nickel, G. (2009). The role of interlanguage in foreign language teaching. *IRAL - International Review of Applied Linguistics in Language Teaching*, 36(1), 1-10.
- Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. Boston: Heinle & Heinle.
- Oxford, R. L. (2003). *Language learning styles and strategies*. Mouton de Gruyter.
- Ozaki, S. (2011). Teaching collocations effectively with the aid of L1. *The Language Teacher*, 35(3), 37-40.
- Pallotti, G. (2017). Applying the interlanguage approach to language teaching. *IRAL - International Review of Applied Linguistics in Language Teaching*, 55(4), 393-412.
- Peters, E. (2014). The effects of repetition and time of post-test administration on EFL learners' form recall of single words and collocations. *Language Teaching Research*, 18(1), 75-94.
- Phoocharoensil, S. (2011). Collocational errors in EFL learners' interlanguage. *Journal of Education and Practice*, 2(3), 103-120.
- Phoocharoensil, S. (2013). Cross-linguistic influence: Its impact on L2 English collocation production. *English Language Teaching*, 6(1), 1-10.
- Phoocharoensil, S. (2014). Exploring learners' developing L2 collocational competence. *Theory and Practice in Language Studies*, 4(12), 2533-2540.
- Rovinelli, R. J., & Hambleton, R. K. (1977). On the use of content specialists in the assessment of criterion-referenced test item validity. *Dutch Journal of Educational Research*, 2, 49-60.

- Sanguannam, S. (2017). A study on “delexical verb+noun” collocation errors of Thai EFL intermediate and advanced learners. *Journal of Liberal Arts*, 17(2), 59-84.
- Selinker, L. (1972). Interlanguage. *IRAL - International Review of Applied Linguistics in Language Teaching*, 10(3), 209-231.
- Selinker, L. (1992). *Rediscovering interlanguage*. London: Longman.
- Simpson-Vlach, R., & Ellis, N. C. (2010). An academic formulas list (AFL). *Applied Linguistics*, 31, 487-512.
- Sinclair, J. (1991). *Corpus, concordance, collocation*. Oxford: Oxford University Press.
- Skehan, P. (1998). *A cognitive approach to language learning*. Oxford: Oxford University Press.
- Song, L. (2012). On the variability of interlanguage. *Theory and Practice in Language Studies*, 2(4), 778-783.
- Sumonsriworakun, P., & Pongpairroj, N. (2017). Systematicity of L1 Thai learners' English interlanguage of dependent prepositions. *Indonesian Journal of Applied Linguistics*, 6(2), 246-259.
- Suranakkharin, T. (2017). Using the flipped model to foster Thai learners' second language collocation knowledge. *3L: The Southeast Asian Journal of English Language Studies*, 23(3), 1-20.
- Tarone, E. (1985). Variability in interlanguage use: A study of style-shifting in morphology and syntax. *Language Learning*, 35, 373-403.
- Tarone, E., & Parrish, B. (1988). Task-related variation in interlanguage: The case of articles. *Language Learning*, 38, 21-43.
- Tavakol, M., & Dennick, R. (2011). Making sense of Chronbach's alpha. *International Journal of Medical Education*, 2, 53-55.
- The British National Corpus, version 3 (BNC XML Edition)*. (2007). Distributed by Bodleian Libraries, University of Oxford, on behalf of the BNC Consortium. URL: <http://www.natcorp.ox.ac.uk/>
- Turner, R. C., & Carlson, L. (2003). Indexes of item-objective congruence for multidimensional items. *International Journal of Testing*, 3(2), 163-171.
- Webb, S., Newton, J., & Chang, A. (2013). Incidental learning of collocation. *Language Learning*, 63(1), 91-120.
- Wijitsopon, R. (2017). Collocations and local textual functions of quantifiers in learner English essays. *Linguistic Research*, 34(1), 1-49.
- Wolter, B., & Gyllstad, H. (2011). Collocational links in the L2 mental lexicon and the influence of L1 intralexical knowledge. *Applied Linguistics*, 32(4), 430-449.
- 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.
- Yumanee, C., & Phoocharoensil, S. (2013). Analysis of collocational errors of Thai EFL students. *LEARN Journal*, 6(1), 88-98.
- Zhang, X. (2017). Effects of receptive-productive integration tasks and prior knowledge of component words on L2 collocation development. *System*, 66, 156-167.

APPENDIX A COLLOCATION JUDGEMENT TEST

Directions: Read each sentence and decide whether the combination of words in italic is appropriately used in everyday English. Put a tick ✓ on the line before each sentence that is naturally and appropriately used in everyday English. Place a × on the line before each item where the word combination is NOT naturally and appropriately used. In case a word combination is NOT acceptable in English, please write a new accurate combination on the line given.

Example: ___×___ 1. Entertainment can serve as a powerful determinant of *nation culture*.
Entertainment can serve as a powerful determinant of *national culture*.

- ____ 1. My close friend is looking for a *business partner* in ASEAN countries.

- ____ 2. The government is trying to boost *economy development* in the rural areas.

- ____ 3. I truly believe that *society capital* is a valuable asset.

- ____ 4. We are eyeing Cambodia as our *new market*.

- ____ 5. She is so pleased the *legislation system* worked fairly for the victims.

- ____ 6. Jack now works for a *local firm* in China.

- ____ 7. This project focuses on the ideas of *society interaction* and outdoor living.

- ____ 8. As a *little firm*, it's hard to cope with swings in the economy.

- ____ 9. *Foreign investors* are not allowed to create their own businesses in the region.

- ____ 10. The findings showed *important differences* between advanced and basic groups.

- ____ 11. The *approximate age* for young men to get married was over 25 last year.

- ____ 12. The government is introducing a law to reduce *transaction costs* for farmers.

- ____ 13. We continue to seek to extend new *market opportunities* in Asia.

- ____ 14. The *World Bank* suggested health workers to use an e-pay system which helped them receive money directly from their bank accounts

- ____ 15. The procedures of *information collection* can be divided into three stages.

- ____ 16. The primary *information sources* of this research contained tests, questionnaires and oral interviews.

APPENDIX B FILL-IN-BLANK TEST

Directions: In each item, write one word that is appropriately used with the word in italic. The Thai translation is provided as a clue following each item.

Example:

After college she got a job with *international business* consulting firm. (ธุรกิจระหว่างประเทศ)

1. We take our _____ *country* obligations very seriously. (เจ้าบ้าน)
2. The tourist industry has slowed from a _____ *rate* of 4% to 2%. (อัตราการเจริญเติบโต)
3. The country's economic output has fallen from 15% to 10% during that _____ *period* (ช่วงเวลา)
4. Many Thai investors were seriously worried when the _____ *market* continued to plunge. (ตลาดหุ้น)
5. Adapting the new digital technologies to the car will help create more _____ *opportunities*. (โอกาสทางธุรกิจ)
6. Paul is vice president of _____ *development* at Digital Technology (ฝ่ายพัฒนาสินค้า).
7. A number of studies have found evidence that games can help promote _____ *transfer*. (การถ่ายทอดความรู้)
8. Questionnaires and digital audio recorders will be used for _____ *collection*. (การเก็บข้อมูล)
9. The nations' gross _____ *product* grew 3.5% in 2015. (ผลิตภัณฑ์มวลรวมภายในประเทศ)
10. The lecturer has raised the subject of _____ *differences* in his strategic management course. (ความแตกต่างทางวัฒนธรรม)
11. It has been reported that a _____ *network* can help an individual deal with difficult situations. (เครือข่ายทางสังคม)
12. There is a new regulation to protect our _____ *property* now. (ทรัพย์สินทางปัญญา)
13. The government needs to drive _____ *growth* and at the same time spur more savings. (การเจริญเติบโตทางเศรษฐกิจ)
14. _____ *sales* of new motorcycles reached \$30 million last year. (ยอดขายรวม)
15. Thailand exports 60% of frozen food goods to _____ *markets*. (ตลาดต่างประเทศ)
16. The company is a _____ *venture* between Tom and his partner. (ร่วมทุน)