THE EFFECTIVENESS OF DATA-DRIVEN LEARNING (DDL) ON TEACHING ENGLISH COLLOCATIONS TO THAI EFL STUDENTS

BY

MR. WACHIRAPONG YAEMTUI

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
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ENGLISH LANGUAGE TEACHING
LANGUAGE INSTITUTE
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ENTITLED

THE EFFECTIVENESS OF DATA-DRIVEN LEARNING (DDL) ON TEACHING ENGLISH COLLOCATIONS TO THAI EFL STUDENTS

was approved as partial fulfillment of the requirements for
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on September 28, 2018

Chairman _____
(Associate Professor Supong Tangkiengsirisin, Ph.D.)

Member and Advisor _____
(Assistant Professor Supakorn Phoocharoensil, Ph.D.)

Member _____
(Assistant Professor Passapong Sripicharn, Ph.D.)

Member _____
(Assistant Professor Saengchan Hemchua, Ph.D.)

Member _____
(Ajarn Chanika Gampper, Ph.D.)

Director _____
(Associate Professor Supong Tangkiengsirisin, Ph.D.)

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Author	Mr. Wachirapong Yaemtui
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Thesis Advisor	Assistant Professor Supakorn Phoocharoensil, Ph.D.
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ABSTRACT

The collocational knowledge is definitely significant for language learners as it provides them with an opportunity to master English lexical knowledge and enhance their communicative competence. Despite its significance, many scholars have further reported that a lot of EFL and ESL learners, irrespective of their English proficiency level, have encountered several problems about learning and producing English collocations. Consequently, the importance of teaching and learning collocations should be emphasized in English language classrooms with the aim to help learners effectively deal with such difficulties. However, a comprehensive conclusion regarding the effectiveness and practicality of a particular collocation teaching and learning method for learners with different language proficiency has not been extensively confirmed. The present study, therefore, aims to bridge these gaps by evaluating the effectiveness of Data-driven Learning (DDL) on teaching English collocations to Thai EFL students as well as investigating the learning strategies and

problem-solving strategies utilized by low-proficiency and high-proficiency Thai EFL students during learning English collocations through DDL.

To investigate the effectiveness of DDL on English collocation teaching and learning, 96 Thai EFL students divided into two proficiency groups with equal numbers were conveniently selected to attend 15-week collocation classes where they were assigned to autonomously follow DDL procedures and complete collocations exercises in order to learn the target collocations. The comparison between the pre-test scores and the post-test scores were statistically drew through the utilization of t-test to determine the effectiveness of DDL and the results of the present study confirm that DDL contributes to the development of collocational knowledge of both low-proficiency and high-proficiency Thai EFL students. Apart from the effectiveness of DDL on the development of collocational knowledge, the findings of the present study also show that the English proficiency levels of DDL learners might neither negatively nor positively affect the development level of their collocational knowledge because the result of the Pearson's correlation coefficient comparing between English Proficiency Test scores and the gain scores of collocation tests reveals that there is no significant linear correlation between these two sets of data.

In addition to the effectiveness of DDL, the learning strategies and problem-solving strategies utilized by Thai EFL students during learning English collocations through DDL are another investigated perspectives of the present study and the quantitative and qualitative data regarding these two perspectives were elicited through 'Students' Reflection', 'Can-do Statement Checklist', 'Think-aloud Task', and 'Semi-structured Interview'. The findings reveal that although both of the low-proficiency and the high-proficiency Thai EFL students could follow the traditional DDL procedures proposed by Johns (1990) with some difficulties, several learning strategies and problem-solving strategies were utilized to maximize the effectiveness of the application of DDL on English collocation learning. Moreover, Thai EFL students' perspectives towards the application of DDL on English collocation learning are also investigated through the use of questionnaire and the semi-structured interview. The quantitative data collected from the questionnaire was triangulated with the qualitative data from the interview transcription for a comprehensive conclusion regarding Thai EFL students' attitude towards learning

English collocations through DDL. The results elicited from these two research instruments show that Thai EFL students have both positive and negative attitudes towards learning English collocations through DDL. Along with these attitudes, both low-proficiency and high-proficiency Thai EFL students considered DDL is a more effective and practical way to learn English collocations when compared to other learning methods.

Keywords: Data-driven learning, English collocations, Attitudes towards DDL

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Mr. Wachirapong Yaemtui

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LIST OF ABBREVIATIONS

Symbols/Abbreviations	Terms
BNC	British National Corpus
CALL	Computer Assisted Language Learning
COBUILD	Collins Birmingham University International Language Database
COCA	Corpus of Contemporary American English
CR	Grammatical Consciousness-Raising
DDL	Data-driven Learning
EFL	English a Foreign Language
EPT	English Proficiency Test
ESL	English as a Second Language
G Score	Gain Score
IT	Information Technology
KWIC	Keyword-In- Context
LOCNESS	Louvain Corpus of Native English Essays
NCEC	New College English Corpus
TL	Target Language
TOEIC	Test of English for Communication

CHAPTER 1
INTRODUCTION

1.1 Background of the Study

Since the 1980s, there have been various studies on vocabulary teaching and learning in the field of English as a Foreign Language (EFL) and English as a Second Language (ESL) (Nation, 1997). In spite of the abundance of research on vocabulary acquisition, a number of limitations have been widely observed. With regard to such limitations, many studies have adopted a narrow definition of what constitutes vocabulary acquisition, and indeed many studies on vocabulary acquisition are based on a premise that recognizes individual words as the only significant units of meaning However, this sort of narrow view of vocabulary acquisition does not provide for comprehensive conclusions to be drawn regarding vocabulary teaching and learning. It is clear that the role of formulaic sequences or multi-word units that appear to be stored and retrieved as in the form of chunks from the memory of native speakers of a particular language is underestimated in the field (Mallikamas & Pongpairoj, 2005). Here, one type of formulaic sequence that is often overlooked in many vocabulary acquisition studies is that of collocations. According to Hsu (2007), Shei and Pain (2000), and Suadin (2015), the practical issue of collocations teaching and learning has been generally neglected by some practitioners and researchers. The notion of collocations, however, is attracting growing importance in EFL and ESL teaching and learning as many linguists and scholars have claimed that there are fixed forms of expression in every language stored in the minds or memories of native speakers as whole chunks of language forms and not as single words (e.g., Marton, 1997; Nation, 2008). Also, these formulaic expressions have been observed to be used in both speech and writing. As much of natural language consists of prefabricated chunks, learning only English words in isolation does not seem to help English language learners become successful language users with proper second language (L2) lexical knowledge. This means EFL and ESL learners have to acquire a

large number of collocations to be able to produce and comprehend ideas accurately and fluently (Bazzaz & Samad, 2011; Mukundan, 2012; Wray, 2002). McCarthy (1990) and McArthur (1992) further considered that collocational knowledge is a significant sign of foreignness among foreign learners. The lack of collocation competence is also considered as a cause of many grammatical errors (Avci, 2006). Further, collocational errors produced by EFL and ESL learners can be even more disruptive to communication than grammatical errors (Smith, 2005). This means that a lack of collocational competence suggests a low level of the development of language skills by language learners, especially EFL and ESL learners. Therefore, collocational knowledge is definitely significant to English language learners because these prefabricated chunks provide them with an opportunity to enhance their L2 lexical knowledge and communicative competence as well as to achieve mastery of English language proficiency (Bazzaz & Samad, 2011; Brown, 1974; Carter & McCarthy, 1988; Hedge, 2000; Hill, 2000; Hoey 2005; Hsu & Chiu, 2008; Karoly, 2005; Klerk, 2006; Lewis, 1993; Mallikamas & Pongpairoj, 2005; McCarthy, 1990; Siyanova & Schmitt, 2008).

Despite its significance in English language, many scholars have further reported that a lot of EFL learners, irrespective of their English proficiency level, encounter a number of problems in learning and producing English collocations (e.g., Boonyasaquan, 2006; Brashi, 1999; Hsu, 2007; Hsu & Chiu, 2008; Mallikamas & Pongpairoj, 2005; Nesselhauf, 2003; Phoocharoensil, 2013; Rahimi & Momeni, 2011; Shih, 2000; Siyanova & Schmitt, 2008; Ying, 2009; Yumanee & Phoocharoensil, 2013). Consequently, the importance of teaching and learning collocations should be emphasized in EFL and ESL classrooms in order to help learners more effectively deal with such difficulties (Saudin, 2014; Yan, 2010). Marton (1997) also advocated the importance of teaching and learning collocations by showing that a lesson about collocations should be emphasized in language classrooms so as to help learners achieve more proficient productions of the target language. In a similar way, Nation (2008) supported that teaching and learning collocations are very crucial because collocational competence allows learners to say or write things more fluently and naturally. In other words, collocational knowledge is essential for language learners, and hence the significance of collocation instruction in EFL courses is now perceived as important in language learning (Hashemi, Azizinezhad, & Darvishi, 2012).

Apart from the significant role that collocations can play in EFL and ESL teaching and learning, research on collocation instructions conducted with Thai EFL students has not received much attention to date (Dorkchandra, 2015; Phoocharoensil, 2014; Wattanapichet, 2013; Yumanee & Phoocharoensil, 2013). Although there have been some studies about collocations conducted in Thai contexts or with Thai students, the majority of these studies were aimed at analyzing collocational errors produced by Thai EFL learners (e.g., Boonyasaquan, 2006; Phoocharoensil, 2013; Yumanee & Phoocharoensil, 2013). This means there has also been little research investigating how English collocations are acquired by Thai EFL and ESL learners. Thus, comprehensive conclusions have not been drawn yet regarding the effectiveness and practicality of a particular collocation teaching and learning method. Consequently, the present study aims to bridge this gap by investigating how English collocations are acquired by Thai EFL students through the application of Data-driven Learning (DDL), which is a teaching approach proposed by Johns (1991), Jones & Waller (2015), and Timmis (2015) to explain the integration of huge databases of English corpora with language teaching and learning. Johns (1991) mentioned that EFL and ESL learners should be treated as language researchers, whose linguistic knowledge needs to be driven by access to linguistic data, and this proficiency can be achieved by the application of DDL in language classrooms.

According to Johns (1991), Jones & Waller (2015), and Timmis (2015), the application of DDL in classrooms provides some advantages for learners as the approach is claimed to "help [learners] to become better language learners" (Johns, 1991, p. 31). This is because DDL can encourage learners' generalizing skills and raise learners' consciousness of a particular linguistic aspect, which leads to greater autonomy and better language learning skills in the long term (Boulton, 2010). One of the main benefits of DDL, as claimed by some researchers that support DDL as an effective collocational learning method, is that DDL allows learners to access a large amount of authentic data in the form of concordance lines as examples of a particular feature of collocation patterns (e.g., Chambers, 2010; Gilquin & Granger, 2010). Johns (1991) also confirmed that DDL is a better collocation learning method because, by studying from authentic (corpus) data, learners can arrive at descriptions of language features (e.g., collocation tendencies, grammar-lexis links, and word or phrase frequency), which are both more accurate and more practical than those found in ELT materials. These language features derived from corpus data are more accurate

because they are based on real data and are more practical because they are expressed in the learners' own terms. Apart from authenticity, DDL is also recognized as an effective learning method that enhances learners' autonomy. DDL places the responsibility on learners to examine naturally-occurring language features and to discover particular language patterns (e.g., collocations) on their own. In this case, DDL is a more effective learning method without a teacher (Boulton, 2009). Aston (2001) further supported the potential of DDL for lexical learning. He expressed that DDL provides learners with multiple exposure to words in context. DDL is particularly helpful for deepening a learners' knowledge of words through the information provided about the collocations, contextual behaviors, and examples. This means DDL appears to be a valuable explicit 'focus on form' technique (Allan, 2009). To summarize, DDL is alleged to have many advantages for collocation learning because this learning method can foster learner autonomy, increase language awareness, improve the learner's ability to deal with authentic language, and so on.

In spite of its potential benefits, DDL is not yet recognized as a part of mainstream language learning and teaching practice (Johns, 1991). This is probably because some language teachers have observed some potential barriers and dilemmas concerning the application of DDL in classrooms (Johns, 1991). Many researchers have also reported some limitations with the application of DDL in language classrooms (e.g., Chambers, 2007; Farr, 2008). Most of these concerns, however, are related to the implementation stage of DDL rather than the effectiveness or the outcomes of the approach. In other words, analysis of the effects and learning outcomes of the use of DDL is relatively limited and even underestimated in many studies. As there are some controversial arguments about the advantages and disadvantages of the DDL approach, a study examining the effectiveness of DDL in language learning needs to be conducted to shed light on a broader understanding of the outcomes of DDL (Boulton, 2010). Consequently, the effectiveness of DDL in teaching English collocations to Thai EFL students is the key examined area in this study, with the study aiming to investigate how DDL can contribute to the development of the English collocational knowledge of Thai EFL students. Additionally, Thai EFL students' learning processes and problem-solving strategies utilized during learning English collocations through the DDL approach represent another significant area that the present study aims to investigate and discuss. Furthermore, Thai EFL students' attitudes toward teaching and learning collocations

through the DDL approach is another focus aspect of this study to evaluate the effectiveness of DDL for collocation learning and to help provide a comprehensive conclusion regarding the application of the DDL approach. The results of the present study provide a number of implications for EFL and ESL teachers, who can incorporate the findings into their language classrooms and curriculum design in order to facilitate enhancing learners' collocational competence.

1.2 Research Context

1.2.1 Thai educational context and collocation pedagogy in Thailand

As this study was conducted with Thai EFL undergraduate students, some general background information about the significant role of English in a Thai educational context and about the teaching and learning of collocations in Thailand is necessary, as illustrated in the following paragraphs.

Although English has not attained the status of a first or second language in Thailand, it is regarded as one of the most important languages as it is used as a mainstay of international communication with many countries around the globe, including, and perhaps especially, countries in the emerging ASEAN Economic Community, where English has officially been announced as a lingua franca (Kirkpatrick, 2012). However, Thai students' English proficiency is still considered unsatisfactorily low compared to that of students in other Southeast Asian countries (Kamkhien, 2010). Noom-ura (2013) reported that despite spending twelve years learning English in primary and secondary schools, Thai EFL students tend to have relatively low English proficiency compared to their ASEAN country counterparts, such as in Indonesia, Malaysia, the Philippines, and Singapore. In order to address this deficiency among Thai students, the Thai government has promoted efforts to improve English language teaching at all educational levels. For instance, as outlined in the 1999 National Education Act and 2002 Education Curriculum, the Thai government implemented a policy to replace traditional teaching approaches, e.g., grammar translation and audio-lingual approaches, where the teacher is the center of the language classroom, with student-centered approaches (Darasawang, 2007). In accordance with the change in teaching pedagogy, the Thai government and the Ministry of Education (MOE) also promoted the application of Information and Communication Technology (ICT) for educational purposes (Thailand's Roadmap of

Education Reform 2015–2021). However, although the Thai government has encouraged English teachers in Thailand to integrate ICT in classrooms, many teachers remain uncomfortable with such technology, thus hindering its greater implementation. In other words, there appear to be some limitations regarding the implementation of computers and technology in language classrooms (Boulton, 2009). Boulton (2009) claimed that the application of computers and technology to language instruction requires a lot of investment regarding both training and budget and these limitations are considered the major obstacles in many countries, including in Thailand. Teachers' lack of digital knowledge is another limitation toward the greater implementation of computers and technology in language classrooms. Many English teachers have reported that they would like to apply computers and technology in their classrooms but they do not know how to effectively use such technology (Boulton, 2009).

With regard to the teaching and learning of English collocations in Thailand, Boonyasaquan (2006) mentioned that Thai EFL classes have tended to primarily emphasize the teaching and learning of grammatical structures and the definitions of new individual words rather than the acquisition of English collocations. This means that the teaching and learning of collocations in Thailand is somewhat overlooked by the majority of Thai EFL teachers. Collocations, nevertheless, are considered one of the major problems faced by Thai EFL students (Mongkolchai, 2008) and numerous studies have consistently reported collocational errors in Thai EFL students' productions (e.g., Boonyasaquan, 2006; Mongkolchai, 2008; Phoocharoensil, 2011; Yumanee & Phoocharoensil, 2013). Although some language teachers have included collocations in their courses, most of them heavily rely on the traditional teaching approach, where the rules and patterns of collocations are deductively explained to learners. They believe that learners' knowledge of collocations can be promoted by the provision of direct and explicit explanations of collocation meanings and patterns rather than indirect and implicit ones; however, this belief about the deductive teaching method has not been proved to be significantly effective so far.

Apart from the misperception about collocation pedagogy, the application of electronic corpora in teaching and learning collocations has not received much attention in Thailand. Many teachers are often reluctant to apply technology in their classes and believe that computers and technology are probably

too complicated to use as a tool for language teaching. Therefore, ICT and DDL have been rejected by many language teachers and have consequently failed to become part of collocation teaching practice in Thailand. To make language teachers more aware and better able to recognize the advantages of corpus-based data in teaching and learning collocations, a study to investigate the effectiveness of such a teaching approach needs to be conducted (Boulton, 2010).

1.3 Research Objectives

The present study aimed to:

1. Investigate the effectiveness of DDL in teaching collocations to high-proficiency and low-proficiency Thai EFL students.
2. Examine the correlation between learners' English proficiency and their collocational competence development.
3. Investigate how Thai EFL students with different proficiency levels follow DDL learning processes, i.e., identification, classification, and generalization, during learning English collocations through DDL.
4. Examine high-proficiency and low-proficiency Thai EFL students' attitudes toward learning English collocations through DDL.

1.4 Research Questions

1. To what extent does DDL contribute to the development of the English collocational knowledge of high-proficiency and low-proficiency Thai EFL students?
2. Is there any significant correlation between learners' English proficiency and their collocational competence development?
3. How do Thai EFL students with different proficiency levels follow DDL learning processes during learning English collocations through DDL?
4. What are high-proficiency and low-proficiency Thai EFL students' attitudes toward learning English collocations through DDL?

1.5 Research Hypotheses

Previous related research studies on collocations and the application of DDL in language classrooms (e.g., Binkai, 2012; Chao, 2010; Chatpunnarangsee, 2013; Geluso & Yamaguchi, 2014; Huang, 2014; Jafarpour & Koosha, 2006; Sripicharn, 2002; Todd, 2001; Ucar & Yukelir, 2015) have generally revealed varying degrees of effectiveness of DDL in teaching and learning collocations. Based on this, the present research study proposes the following research hypotheses:

1. DDL can make a significant contribution to the development of the English collocational knowledge of high-proficiency and low-proficiency Thai EFL students.
2. There is a significant correlation between learners' English proficiency and their collocational competence development.
3. Both high-proficiency and low-proficiency Thai EFL students should be able to successfully follow DDL learning processes, i.e., identification, classification, and generalization, during learning English collocations through DDL.
4. Both high-proficiency and low-proficiency Thai EFL students will have positive attitudes learning English collocations through DDL.

1.6 Scope of the Study

The present study focused on the following areas:

1.6.1 Participants

This present study's participants comprised 96 undergraduate EFL students from a single Thai university, who had enrolled on a foundation English course in the academic year 2015/2016. Based on their English proficiency test scores, the participants were divided into two proficiency groups: a high-proficiency group and a low-proficiency group, with equal numbers of participants.

1.6.2 Variables

In this study, the independent variable was the participants' English proficiency levels, while the dependent variable was the development of the participants' collocational knowledge. There were two levels of dependent variables

or the participants' collocational development: a low level of collocational development and a high level of collocational development.

1.6.3 Target collocations

The target collocations investigated in this study involved only lexical collocations and grammatical collocations. The lexical collocations were represented by word pairs that were lexically restricted and that could be classified into many types; however, five types of lexical collocations, namely *noun + verb, adjective + noun*, *adverb + adjective*, *verb + adverb*, and *adverb + verb*, were the main focus of this study. The grammatical collocations, on the other hand, involved word combinations consisting of a content word and a function word. In this study, only *noun + preposition, verb + preposition,* and *adjective + preposition* collocations were selected as the target grammatical collocations. Other types of word combinations, like idioms, were not emphasized in this study.

1.7 Limitations of the Study

As the scope of the study focused only on examining the effectiveness of DDL in teaching collocations to high-proficiency and low-proficiency English users, the findings may not cover the intermediate ones. The participants in this study were also recruited through a convenience sampling technique from Thai EFL students of a single university in Bangkok, Thailand, so the findings of this study may not be generalized to a larger population in other academic contexts, especially where English is studied as a second language. Additionally, the lack of a control group serving as a comparison group is possibly another limitation of the present study. The present study includes only an experimental group, where the participants were classified into two proficiency groups (i.e., a high-proficiency group and a low-proficiency group), so it might be difficult to exactly confirm that the gain scores of the participants in the experimental group were the result of the treatment (DDL) alone.

Moreover, as the target collocations in this study involved only lexical collocations and grammatical collocations, the gained results might deal with only the effectiveness of DDL in teaching and learning lexical and grammatical collocations. In other words, the results of the study might not be generalized to how DDL can be applied to other types of formulaic sequences, such as idioms and free word

combinations. In addition to the target collocations, the present study utilized only one source of corpus data, which was the COCA corpus, so there might be some limitations in generalizing the findings of the present study with other corpus data.

In addition to the limitations in terms of the EFL setting and collocation types, some factors, like extraneous variables in the research environment, which probably have an effect on the dependent variables, may lead to some limitations of the study. Although these extraneous variables could probably not be controlled, they were taken into consideration when analyzing the data. The examples of extraneous variables in this study included the genders, ages, and cultures of the participants. Furthermore, as the participants in the study were assigned to the courses taking place at two different class times, namely morning and evening classes, the different class times, regarded as another limitation, may have affected the results of the study.

1.8 Significance of the Study

The main objective of the present study was to investigate the acquisition of English collocations through DDL, so the study may have substantial significance for English Language Teaching (ELT), especially in the field of collocation teaching and learning.

1.8.1 Collocation pedagogical implications

DDL may offer language teachers an effective teaching method to enhance learners' collocational competence. English language teachers can use the findings of the study as a guide to help them decide how to effectively handle the teaching of English collocations in their classrooms through the application of DDL.

1.8.2 An alternative collocational learning method

The findings of the present study can also provide language learners with an alternative learning approach to facilitate their preferred learning styles in order to develop their collocational competence. By consulting the findings of the study, language learners may find DDL an effective learning method that raises their awareness of collocations and thus can help them develop strategies for collocational acquisition.

1.8.3 A reference for English course design

The findings of the study may be useful for improving collocational teaching and learning approaches in EFL and ESL syllabuses. This is because the findings of this study can be used as guidelines for both syllabus designers and institutions to apply DDL to a learning activity or a course to promote learners' English collocational knowledge.

1.8.4 A model for further studies on collocation

This study may serve as a good model for other scholars and researchers who would like to conduct further studies on DDL and collocations for a wider perspective regarding collocation pedagogy. It should be noted that a particular collocation teaching and learning method (i.e. DDL) might be practical and effective with a classroom situation and other methods may appropriate for some contexts, so a study with a particular group of people in a particular learning context should be further investigated.

1.9 Definitions of the Key Terms

Definitions of the key terms for this study are provided below:

1.9.1 Collocations

Collocations can be defined as sets of two or more words that frequently occur together more than just would be the case by random chance. Although the most distinct feature of collocations is the combination of words, words can be combined in various ways to form meaningful groups, like collocations, idioms, and free combinations, and these possible combinations can be fixed or loose (Howarth, 1998). Collocations, however, have some particular properties that make them unique. These properties are arbitrary language, fixed word order, and predicted occurrences (Boonyasaquan, 2006). However, the present study did not include all types of collocations in the target collocations and instead focused on only five types of lexical collocations, namely *noun + verb*, *adjective + noun*, *adverb + adjective*, *verb + adverb*, and *adverb + verb*, and only *noun + preposition*, *verb + preposition*, and *adjective + preposition* collocations as the target grammatical collocations.

1.9.2 Lexical and grammatical collocations

According to Benson, Benson, and Ilson (1997), collocations can be classified into two distinct categories, namely lexical collocations and grammatical collocations. Lexical collocations are those word pairs that are lexically restricted. This type of collocations generally comprises two or more content words, i.e., verbs, nouns, adverbs, and adjectives. The examples of lexical collocations are *noun + verb*, *verb + noun*, *adjective + noun*, *adverb + adjective*, *verb + adverb*, and *adverb + verb*. Grammatical collocations, on the other hand, are the word combinations consisting of a content word and a function word, which is usually a preposition. The combinations of *noun + preposition*, *preposition + noun*, *verb + preposition*, and *adjective + preposition* are examples of grammatical collocations. However, as mentioned in 1.9.1, not all types of lexical collocations and grammatical collocations were selected as the target collocations for study in the present research.

1.9.3 Collocational competence

Collocational competence is considered as one of the most important skills for language learners because collocations are an essential carrier of meaning and as knowing the meaning of a word in isolation is useless without knowing how the word is used. Lewis (2002) also defined collocation competence as the most powerful force in the creation and comprehension of all naturally-occurring text. Therefore, language learners should be able to think bigger than the word in isolation and need to look for any two- or three-word expressions present in order to comprehend the texts and to achieve collocational competence. To achieve this competence, language learners should be able to memorize collocations as single units and should realize that collocations are arbitrary, which means that they lack predictability. This means attempts at guessing which words co-occur are likely to fail and result in deviant word combinations. Instead, language learners who are equipped with collocational competence should be able to skillfully identify a word and its' collocates without trouble or difficulty. In other words, learners with collocational competence should be able to produce and comprehend collocations naturally.

1.9.4 Data-driven learning (DDL)

DDL is an approach that implements the use of concordance-based materials retrieved from a corpus data to language teaching and learning. In this approach, language learners with a particular examined linguistic structure are allowed to access the huge data of concordance lines in order to construct and

generalize language patterns from the presented language input. The DDL approach is, accordingly, regarded as a learner-centered and inductive approach to language learning, where learners are encouraged to make their own interpretations of the data (Johns, 1991). The DDL approach was utilized in this study as the treatment that the participants received over 15 weeks of collocation classes. The participants were asked to learn the target collocations through a web-concordance: Corpus of Contemporary American English (COCA). They were required to consult the concordance lines retrieved from the COCA in order to complete collocation exercises where the target collocations were included.

1.9.5 DDL procedures

Johns (1991) introduced three steps involved in the DDL procedures in language learning. These three steps are: (i) Identification, (ii) Classification, and (iii) Generalization. The identification step refers to the process of identifying the examined keyword from the inquiries. Johns (1991) suggested that the examined language structures could be generated from either teachers or in the class. Some scholars, like Guan (2013), have also suggested that the use of class-generated areas of inquiry are more effective because these questionable language areas may create an immediate interest with learners and can probably best be learned in response to learners' questions. However, in the present study, the questions in the set collocation worksheets served for the inquiry during the identification step. This meant, however, that the language areas (i.e., collocations) of inquiry covered were not the results of learners' interest but instead were target collocations that were carefully and purposively selected by the researcher. The second step of DDL procedures recommended by Johns (1191) is classification. Classification refers to the step where the concordance lines are presented to the learner to explore. The concordance lines can be in a form of paper-based materials made by teachers or can be retrieved from various corpora, like COCA or BNC. However, in the present study, the COCA served as the only primary source of corpus-based data for DDL learners to explore examples of concordance lines. After browsing and skimming through several concordance lines in the retrieved corpus, DDL learners by themselves had to group some concordance lines or corpus-based data together that shared semantic similarities. Generalization represents the last step of John's DDL procedures. The generalization step is very important and probably the most difficult step for learners in the DDL approach, as the DDL learners in the present study had to apply their

observations and hypothesis testing skills to inductively construct language rules and patterns presented through concordance lines retrieved from COCA without the help of teachers.

With reference to the aforementioned DDL procedures, the DDL task in the present study was considered an autonomous DDL, where DDL learners had to take care of their own learning processes without the help of a teacher, rather than a collaborative DDL, where a teacher acts as an assistant to guide DDL learners through the DDL steps.

1.9.6 Thai EFL students

EFL (English as a Foreign Language) students refer to English learners whose first language is not English. Also, these students typically study in countries where English is not the official language. Some examples of these countries are Korea, Japan, Indonesia, and Thailand, all of which belong to the expanding circle of Krachru's World Englishes model (Krachru, 1985). Although English is a compulsory course taught in most schools, the role of English in these countries and societies is relatively minor and insignificant because English might not be necessary for the daily lives of the learners (Richards & Schmidt, 2010). That is, the average students in these EFL countries have minimal opportunity to communicate with others in English and do not necessarily need English to be able to live in their own countries. To be precise, their opportunity to use English is usually limited to only English classes. For the present study, Thai EFL students constitute the study populations, specifically about 4,500 undergraduate Thai students studying in various Thai programs at a Thai university in Bangkok, Thailand. These students have studied English as a foreign language for at least 12 years but do not use English as a medium of communication in other courses, apart from English courses.

1.9.7 High-proficiency and low-proficiency Thai EFL students

Students were divided into two groups: high-proficiency Thai EFL students and low-proficiency Thai EFL students based on their English proficiency test (EPT) cut-off scores in accordance with the Common European Framework of Reference (CEFR levels). The high-proficiency Thai EFL students were those whose EPT cut-off scores were B1 and above, whereas the low-proficiency Thai EFL students were learners whose EPT cut-off scores were A2 and below.

According to the descriptor of the CEFL Global Scale, Thai EFL students with high language proficiency should be able to understand the main points

of clear standard input on familiar matters regularly encountered in work, school, leisure, and so on. They also should be able to deal with most situations likely to arise while travelling in an area where English language is spoken and able to produce simple connected text on topics that are familiar or of personal interest. Additionally, the high-proficiency Thai EFL students of the present study needed to be able to describe experiences and events, dreams, hopes or ambitions, and briefly give reasons and explanations for opinions and plans.

For the low-proficiency Thai EFL students, they should be able to understand sentences and frequently used expressions related to areas of most immediate relevance (e.g., very basic personal and family information, shopping, local geography, employment). Also, the low-proficiency Thai EFL students were those who could communicate to perform simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters. Apart from the ability to communicate in simple and familiar situations, they should be able to describe aspects of their background, immediate environment, and matters in areas of immediate need using simple terms and structures.

1.9.8 Attitude

Attitude refers to a mental or neural state of readiness, organized through experience, exerting a directive or dynamic influence on an individual's response to all objects and situations to which they are related (Allport, 1935). These responses can be positive, neutral, or negative, and are caused by four major components: (i) Affective: emotions or feelings; (ii) Cognitive: belief or opinions held consciously; (iii) Conative: inclination for action; and (iv) Evaluative: positive or negative response to stimuli. Attitude influences an individual's choice of action, and responses to challenges, incentives, and rewards. The attitudes that are mentioned in the present study were the positive attitudes and negative attitudes toward learning English collocations through DDL. In other words, attitude refers to a participant's perceived advantages or disadvantages of the DDL method.

1.9.9 Regular program

The regular program refers to regular education classes that are offered during weekdays of each semester. Unlike English or international programs, the teaching and learning of regular programs are mostly conducted in Thai. However, English is frequently used as a medium of instruction in English classes in order to increase the opportunities for students in a regular program to communicate in

English. That means Thai is sometimes used only for explaining complicated lessons to ensure that students completely understand difficult or complex contents.

1.10 Organization of the Dissertation

The dissertation consists of five main chapters. The first chapter provides the background to the study, including the rationale of why the study needed to be conducted, a description of the research context, an outline of objectives of the study, the research questions, the scope of the study, the limitations, and the significance of the study as well as operational definitions of the key terms mentioned in the study. The review of the relevant literature in this field and related studies are discussed in the second chapter in order to provide more comprehensive knowledge regarding collocations and DDL for readers. The third chapter explains the methodology of the present study, including the selection of the participants, research instruments, data collection procedures, and a data analysis of the effect of DDL on teaching collocations to Thai EFL students. The findings of the study are systematically presented in terms of both qualitative data and quantitative data in the fourth chapter. The fifth and final chapter comprehensively discusses the results of the study in relation to the literature or theories of collocations and the findings of previous related studies. Also, the pedagogical implications to support the application of DDL for English collocations learning and some recommendations for further studies are provided in this chapter.

CHAPTER 2
REVIEW OF LITERATURE

2.1 Definitions of Collocations

The term collocation has been used by scholars and linguists from a variety of perspectives and has been defined in different manners. Palmer (1938) firstly introduced the term collocation in his dictionary, *A Grammar of English Words*. Palmer (1938), as cited in Nation (2001, p. 317) defined the concept of collocation as "a string of words that must or should be learned, or is best or most conveniently learnt as an integral whole or independent entity, rather than by the process of placing together component parts". Palmer (1968) further explained the concept of collocation as follows:

> The habitual collocations in which words under study appear are quite simply the mere word accompaniment, the other word-material in which they are most commonly or most characteristically embedded.
>
> (Palmer, 1968, p.180)

Additionally, Firth (1957) advanced the definition of *collocation* as a technical term and made this term well known as a part of the technical terminology of linguistics. He stated that "collocations of a given word are statement of the habitual or customary places of that word" and "the mere word accompaniment, the other word-material in which they are most commonly or most characteristically embedded" (p.169). Firth also explained that the meaning of a collocation is "an abstraction at the syntagmatic level and is not directly concerned with the conceptual or idea approach to the meaning of words." For instance "One of the meaning of *night* is its collocability with *dark*…". According to Benson, Benson, and Ilson (1986), "In English, as in other languages, there are many fixed, identifiable, non-idiomatic phrases and constructions.

Such groups of words are called recurrent combinations, fixed combinations or collocations" (Benson, Benson, and Ilson, 1986, p. 9). Apart from Benson, Benson, and Ilson (1986), one interesting aspect of collocation was also given by McCarthy (1990), who stated that collocations are "the likelihood of co-occurrence between words" and "it is a marriage contract between words, and some words are more firmly married to each other than others" (McCarthy, 1990, p. 12). McCarthy also provided some examples of collocations by explaining that *blonde* has a high tendency to co-occur with *hair*, which means *blonde* and *hair* are collocates.

Sinclair (1991), also defined collocation as "items that occur physically together or have stronger chances of being mentioned together" and "when two words are different frequencies collocate significantly, the collocation has a different value in the description of each of two words" (p. 170). Similarly, Nattinger and DeCarrico (1992) defined collocations as "strings of specific lexical items, such as *rancid butter* and *curry flavor*, that co-occur with a mutual expectancy greater than chance" (Nattinger and DeCarrico, 1992, p. 36). Poole (1999), moreover, remarked that collocations should be regarded as a fixed expression that is closely related within a certain context. The examples of such a fixed expression are *full moon* and *white and black*. Finch (2000, p. 153) further mentioned that the concept of collocations can be applied to differentiate synonymous words; for example, although the words *quiver* and *tremble* are synonymous, they are different in that *quiver* is related to *excitement* but *tremble* is associated with *fear*. In this respect, it can be concluded that despite being synonymous, words cannot be substituted for one another in all contexts.

One of the most well-known definitions of collocation was coined by Nation (2001). Nation provided a definition of collocations as "largely local context information provided by words in the immediate neighborhood of a word". He further added that the collocation should be processed and regarded as "a unit not as a group of two or more words" (Nation, 2001, p. 319). However, Hoey (2005) viewed the concept of collocations in a different way by defining collocation as "the property of language whereby two more words seem to appear frequently in each other's company" (Hoey, 2005, p. 2).

Woolard (2002) defined collocations as "words which are statistically much more likely to appear together than random chance suggests" (p. 2). Moreover, Wray (2002) clearly defined the term formulaic sequence, which is similar to

collocation in some respects, and this definition has been regarded as one of the most recent definitions of collocation.

> [A formulaic sequence is] a sequence, continuous or discontinuous, of words or other elements, which is, or appears to be, prefabricated; that is, stored and retrieved whole from memory at the time of use…
>
> (Wray, 2002, p. 9)

Another recent definition of collocation was contributed by Durrant (2009). According to Durrant (2009), "Collocations are sets of two or more words which appear together more frequently than their individual frequencies would lead us to expect" (p.158). Moreover, McKeown and Radev (2000) stated that to define the definition of collocations is not easy because collocations are believed to occur somewhere in the middle of the spectrum where there are free word combinations at one extreme and idiomatic expressions at the other. They defined collocation as a group of words that occur together more than by chance.

As clearly seen in the above definitions, although collocation has been differently defined in many ways, the scholars and linguists tend to give the definitions based on three main approaches which are 'Phraseological approaches', 'Frequency-based approaches' and 'Psycholinguistic approaches' (Antle, 2013).

(i) *Phraseological approaches* Cowie (1988) and Nesselhaulf (2005) defined collocations as word combinations in which there are restrictions on which words can be combined (e.g. *commit* must be followed by or combined with a small number of nouns related illegal or something that is considered wrong such as *suicide* and *crime*) and only one element of such word combinations does not possess its usual meaning; for example, the word combination *give a call* must be processed as a whole single unit to mean making a telephone call).

(ii) *Frequency-based approaches* Hoey (1991) and Sinclair (1991) defined collocations as sets of words having a statistical tendency to co-occur in texts. For instance, *shrug* is statistically likely to co-occur with *shoulders*.

(iii) *Psycholinguistic approaches* Wray (2002) defined collocations as combinations of words with psychological representation and such combination is stored holistically with an associative link between their elements.

Despite their differences, these three approaches share some similar ideas that collocations are combinations whose behavior cannot be fully explained in terms of features of their component words. Collocations, therefore, should be handled as partially independent entities with their own semantic, distributional, and psycholinguistic properties.

In addition to the above three main approaches, Martynska (2004) proposed another three different aspects in order to define the meaning of collocations as follows:

(i) *The lexical approach* as mentioned by Firth (1957) who has been regarded as one of the founding fathers of collocation and developers of the lexical. Firth (1957) stated that co-occurring words determined the meaning of a word and lexis is considered to be independent and separable from grammar. Halliday (1966), as cited in Martynska (2004), also supported that collocations can be regarded as examples of word combinations that cut across grammar boundaries. The meaning of a word, therefore, is based on the fact that it collocates with another word, but these word combinations are strictly limited.

Additionally, Sinclair (1991) proposed the definition of collocations based on the lexical approach. He introduced the terms 'node' and 'span' to describe the aspect of collocations. Sinclair (1991) explained that "an item whose collocations are studied is called a 'node'; the number of relevant lexical items on each side of a node is defined as a 'span' and those items which are found within the span are called collocates" (p. 2). In other words, the advocates of the lexical approach believe that the meaning of word combinations is probably determined based on the meaning of word at the lexical level.

(ii) *The semantic approach* aims at examining collocations from the semantic aspects and attempts to separate collocations from grammar. Unlike the lexical approach, the semantic approach recognizes the semantic properties of a lexical item as the meaning of that item. In this regard, the semantic properties of a lexical item determine its collocates (Chomsky, 1965). The supporters of this approach, therefore, try to investigate why words collocate with certain other words; for example, why *blonde* can collocate with *hair* as in *blonde hair*, but not *blonde house*.

(iii) *The structural approach* defines collocations as word combinations which are determined by structure and occur in patterns. This approach is different from the semantic and lexical approach in that the advocates of the structural approach believe grammar should be combined in the study of collocations (Gitsaki, 1996). Benson, Benson and Ilson (1997) also supported the structural approach by providing the definition of collocations as "specified, identifiable, non-idiomatic, recurrent combination".

2.2 Collocations and other Combinations of Words

The most distinct feature of collocation is the combination of words; however, words can be combined in numerous ways to form meaningful groups, and these possible combinations can be fixed or loose. As a result, it is necessary to draw a distinction among these word combinations, i.e. collocations, idioms, free combinations, and other kinds of word combinations, so as to attain a more comprehensive understanding of collocations.

According to Howarth's model (1998), word combinations can be categorized as follows:

1) *Free combinations*: The meaning of a free combination can be determined from the literal meaning of its individual lexical such as *drive a car*, *drink coffee*, and *play tennis*.

2) *Restricted collocations*: The combination of compositional elements of a restricted collocation is more limited and usually has one component specifically used in a specialized context, e.g. *perform a task*, *conduct a study*, and *make a payment*.

3) *Figurative idioms*: A figurative idiom has a metaphorical meaning as a whole that can somehow tell its literal interpretation; for example, the idiom *do a U-turn* means 'to complete change in direction of political or other policy'.

4) *Pure idioms*: The meaning of a pure idiom cannot be predicted or interpreted from the meaning of its components; for instance, the idiom *blow the gaff* means 'to cause trouble for someone by letting other people know something that they were trying to keep secret'.

Additionally, Benson et al (1986) distinguished collocations from other word combinations and proposed five categories of word combination as follows:

1) *Compounds*: The variation in compounds is not possible, so they are considered the most fixed combinations of words. The compounds can be classified as (i) nominal compounds (e.g. *floppy disk* and *aptitude test*) and (ii) compound verbs or phrasal verbs (e.g. *break through*).

2) *Idioms*: The relatively frozen expressions whose meanings cannot be predicted from its component parts. The instances of idioms are *to kill two birds with one stone*, *to spill the beans*, and so on.

3) *Transitional combinations*: The meaning of transitional combination can be somehow determined from its components. The transitional combinations are more fixed and less variable than collocations. The examples of transitional combinations are *for old time's sake*, *the facts of life*, and so on.

4) *Collocations*: The collocations refer to the loosely fixed, arbitrary recurrent word combinations whose meanings of their component parts reflect the meaning of the whole such as *keen competition*, *close attention*, *to commit murder*, and the like.

5) *Free combination*: The most unfixed combination of words and that means the semantic restrictions on the combination is relatively open-ended. For example, the verb *recall* can be combined with any events and accidents like *to recall an adventure*.

McKeown and Radev (2000) remarked that collocations occur in the middle of the spectrum where there is an extreme contrast between free word combinations and idiomatic expressions. A free word combination means "using general rules; that is in terms of semantic constraints on words which appear in a certain syntactic relation with a given headword" (McKeown and Radev, 2000, p. 2). Its meaning can be somehow predicted from the headword or its combination. The free word combination can be illustrated from the examples of the words *run* + [object]. The word *run*, which means 'manage' or 'direct', can be followed by any institution or organization. This means the semantic restrictions on the object is relatively open-ended and there is a semantic generality. An idiom, on the other hand, can be described as a rigid word combination that cannot be generalized to others. The meaning of such an idiom cannot be determined from the meaning of its parts. Furthermore, the idiom cannot participate in the usual word-order variations. For example, *to kick the bucket* is an idiom meaning 'to die'. In its figurative sense, this idiom exhibits a much more restricted collocation where a possible object is limited to

only *bucket*. Accordingly, fewer or no other words can replace a component word of an idiom and variation in usage is not generally allowed for the idiom. As collocations fall somewhere along the continuum between free-word combination and idioms, it is difficult to draw the line between categories (McKeown and Radev, 2000). The following table illustrates more examples of the distinction between free word combinations, collocations, and idioms.

Table 2.1: Examples of Idioms, Collocations, and Free Word Combinations

Idioms	Collocations	Free word combinations
to kick the bucket	*to trade actively*	*to take a bus*
dead end	*table of content*	*the end of the road*
to catch up	*orthogonal projection*	*to buy a house*

As mentioned above, there is a dilemma in placing collocations along a continuum of word combination and it is probably complicated to illustrate collocations, so the identification of criteria that can be used to determine when a phrase is a collocation and characteristics of collocations needs to be further studied (McKeown and Radev, 2000).

2.3 Properties of Collocations

As mentioned in the definitions of collocations, there have been various definitions of collocations based on each scholar's perspective, and it is quite complicated to define collocations. This might be because some typical properties of collocations.

The notion of arbitrary language might comprehensively characterize the property of collocations and make them different from other word combinations. According to McKeown and Radev (2000), in a collocational word pair, replacing a word partner with its probably leads to an improper and unacceptable lexical combination; for instance, a phrase such as *a running commentary*, *commit treason*, and *warm greeting* are all correct and proper word combinations, but *a running discussion*, *commit treachery*, and *hot greeting* are unacceptable lexical combinations.

McKeown and Radev (2000) also observed that the arbitrary nature of collocations also persists across languages and dialects. This means collocational use may be markedly different among languages. Wray (2002) remarked that in English *run a business* is a correct word combination, but in Germany *lead a business* is a common collocation. In British English, the phrase *lay the table* and *take a decision* are proper lexical combinations, but the synonymous phrases *set the table* and *make a decision* are prevalent in American English. These examples illustrate arbitrary differences across languages and dialects.

Boonyasaquan (2006) also summarized the four idiosyncratic properties of collocations as follows:

1. No word can be added between collocations which are frequent co-occurrences of items; for instance, it is unacceptable to add the word *spoon* between the collocation like *knife and fork*.

2. A synonym cannot be replaced in the elements of collocations. For example, the verb *make* in the collocation *make a cake* cannot be replaced by its synonymous verb *do*.

3. The word order of a collocation is fixed and cannot be reversed; for instance, *man and wife,* rather than *wife and man,* is a proper collocation.

4. Some collocations can be predicted; for example, if the word *shrug* is said the hearer can expect the word *shoulder* to be followed.

Although these properties indicate the difficulties in characterizing collocations and determining an acceptable lexical combination of collocations, some linguists believe that collocations can be possibly observed as samples of language.

2.4 Classifications of Collocations

Collocations have been classified into various categories based on each scholar's perspectives. As a result, lexicographers and linguists have created a wide variety of collocations and attempted to classify them as part of a general scheme. By examining a wide variety of collocates of the same syntactic category, distinctions are made between grammatical collocations and lexical collocations. According to Benson, Benson, and Ilson (1997), there are two main classifications of collocations which are lexical collocations and grammatical collocations. The lexical collocations are those word pairs which are lexically restricted. This means only a subset of

synonyms of collocates can be used or substituted in the same lexical context (McKeown and Radev, 2000). This type of collocations generally comprises two or more content words, i.e. verbs, nouns, adverbs, and adjectives. The following information exemplifies this type of collocations:

(i) *noun + verb*: e.g. *bombs explode*, *bees string*
(ii) *verb + noun*: e.g. *reject an appeal, launch a missile*
(iii) *adjective + noun*: e.g. *strong tea*, *blonde hair*
(iv) *adverb + adjective*: e.g. *homelessly addicted, sound asleep*
(v) *verb + adverb*: e.g. *argue heatedly, apologize humbly*
(vi) *adverb + verb*: e.g. *soundly sleep, gently remind*

In contrast, the grammatical collocations are the word combinations consisting of a content word and a function word which is usually a preposition, including paired syntactic categories, and a grammatical structure such as an infinitive or a clause as illustrated below:

(i) *noun + preposition*: e.g. *apathy towards*, *blockade against*
(ii) *noun + to infinitive:* e.g. He was *a fool to do* it.
(iii) *noun + that-clause:* e.g. He took *an oath that* he would do this duty.
(iv) *verb + preposition*: e.g. *apologize for, refer to*
(v) *adjective + preposition*: e.g. *angry at, fond of*
(vi) *adjective + to infinitive:* e.g. It was *important to* study.
(vii) *adjective + that-clause:* e.g. He was *afraid that* he would lose his job.
(viii) *preposition + noun*: e.g. *in agony, by chance*

In addition to the above two categories of collocations, Gairns and Redman (1986) also proposed one of the clearest classifications of collocations. They categorized collocations into four principal types as follows:

(i) *subject noun + verb*: e.g. *lions roar*
(ii) *verb + object noun*: e.g. *commit suicide*

(iii) *adjective + noun*: e.g. *strong tea*

(iv) *adverb + past participle as an adjective*: e.g. *completely satisfied*

Although this classification is likely to be one of the simplest and clearest classifications, it might not cover all possible collocations. Hill (2000), therefore, tried to provide more comprehensive classification by adding three additional categories to the one given by Gairns and Redman (1986). Hill (2000) proposed the following additional classifications in order to comprehensively cover the actual types of collocation:

(i) *adjective* + noun: e.g. *strong tea, heavy rain, strong wind*

(ii) *noun + noun*: e.g. *radio station, bus station, computer software*

(iii) *verb + adjective + noun*: e.g. *speak foreign languages*

(iv) *verb + adverb*: e.g. *argue heatedly, run quickly, move rapidly*

(vi) *adverb + adjective*: e.g. *closely acquainted, hopelessly addicted*

(vii) *verb + preposition + noun*: e.g. *speak through interpreters*

Similar to the classification proposed by Hill (2000), O' Dell and McCarthy (2008) created another classification of collocations composed of six different grammatical categories of collocations as follows:

(i) *verb + noun*: e.g. *cancel an appointment, reject an appeal, take a note*

(ii) *noun + verb*: e.g. *bombs explode, opportunities arise, bees sting*

(iii) *noun +of + noun*: e.g. *a spate of attacks, a barrage of insults, a stroke of luck*

(iv) *adjective + noun*: e.g. *reckless abandon, strong tea, blonde hair*

(v) *verb + adverb*: e.g. *apologize humbly, speak fluently*

(vi) *More complex collocations*: e.g. *speak through interpreters*

As we can see from the above classification, O' Dell and McCarthy proposed the classification of collocation which is almost the same as that of Hill (2000), except for one different type of collocation, i.e. *More complex collocations* which substitutes for the category of *verb + preposition + noun* in Hill (2000).

Apart from using the aspect of the combination of two different parts of collocations, scholars also classify collocations based on collocation strength. For example, Lewis (2000) classified collocations into two major types as follows:

(i) *Strong collocations*: The strong collocations refer the combination of words that have a very limited number of fixed collocates such as *rancid butter* and *rancid oil*.

(ii) *Weak collocations*: Unlike strong collocations, weak collocations are the combination of words that have a wide variety of collocates such as *long or short* and *cheap or expensive* since these words can co-occur with a large number of collocates.

Hill (2000, p. 63) further categorized collocations based on their strength; however, he added two more collocation types, i.e. unique collocations and medium-strength collocations, into the category. The four different types of collocations are as follows:

(i) *Unique collocations*: unique collocations are the fixed word combinations which cannot be substituted by any other words; for example, it is acceptable to say *to foot the bill*, but *to foot the invoice* is very uncommon.

(ii) *Strong collocations*: strong collocations refer to the collocations that have limited collocates but not as fixed as the unique collocations, so some other collocates are sometimes acceptable; for instance, both *moved to tear* and *reduced to tears* are acceptable. This means the two verbs *move* and *reduce* can be used to carry the same meaning with the noun *tears*.

(iii) *Weak collocations*: weak collocations are the word combinations whose collocates are somehow looser than the strong collocations and their word co-occurrences can be easily guessed. The examples of the weak collocations are *a white shirt, a white house, a white car,* and the like. These examples show that *white* can be used in combination with a wide range of nouns.

(iv) *Medium-strength collocations*: medium-strength collocations refer to those weak collocations that learners may know the meaning of each lexical item but cannot successfully combine these words as a collocation; for instance, learners know

the meaning of the words *do* and *laundry* but they may be unable to combine these words as a collocation *to do the laundry*.

In addition, collocations can also be classified as open and restricted collocations (Baker, 2010).

(i) *Open collocations* are nodes that can be combined with a variety of words; for example, the word *house* can collocate with *big* as in *big house*, *small* as in *small house*, *beautiful* as in *beautiful house*, and so on. It is evident that open collocations are similar to weak collocations (Hill, 2000).

(ii) *Restricted collocations* refer to the combination of words which are similar to idioms or fixed phrases such as *get away with* and *dogs eat dogs* in that the both restricted collocations and fixed phrases are very restricted combinations that must be treated as one whole expression.

Moreover, Nation (2001) classified collocations into ten different categories by claiming that the classification of collocation should be primarily based on not only the types of focused groups, but also the reasons for focusing on them. Nation (2001), accordingly, introduced thorough ten scales of collocations as follows:

(i) *Frequency of co-occurrence*: The frequency and range are estimated by counting and can be explained in absolute and relative terms (Kjellmer, 1984). The absolute frequency means the actual amount of times a collocation occurs in a corpus, while the relative frequency is a comparison between the actual frequency of occurrence and an expected number of occurrences (Nation, 2001). The frequency of co-occurrence scales ranges from *frequently occurring together* to *infrequently occurring together*. The examples of *frequently occurring together* collocations are *little baby*, *small amount*, and *make* (*a*) *mistake*; on the other hand, the examples of *infrequently occurring together* are *to foot the bill* and *rancid butter*.

(ii) *Adjacency*: The adjacency scales range from *next to each other* to *separated by several items*. Nation (2001) illustrated the examples of the adjacency by explaining that "collocates can occur next to each other as in *left handed*, or separated by variable words or phrases as *in little did x realize*" (p. 330).

(iii) *Grammatically connected*: Although collocates commonly occur within the same sentence as a part of the construction of grammar, they sometimes occur in the same text and are not grammatically connected to each other but in a lexical cohesion relationship as collocates. The grammatically connected scales range from *grammatically connected* to *grammatically unconnected*. Kennedy (1998)

explained that some collocates can occur together without a strong grammatical connection as in "*Her uniform was of rich raw silk in a shade which matched her hair*" (Kennedy, 1998, p. 113). As shown in this example, *silk* usually occurs with a color (i.e. *shade*) without any grammatical connection. As regards '*grammatically connected*' collocation, Nation (2001) provided *of the* as its examples. That is *of* and *the*, as in *of the*, usually occur within the same sentence as a part of grammatical construction, not as a lexical cohesion relationship.

(iv) *Grammatically structured*: Kjellmer (1982) explained that *habitually co-occurring* is inadequate as a criterion to analyze the major divisions like a clause so he applied a list of permitted structures to explain the grammatical structure criterion which ranges from *well structured* to *loosely related*.

(v) *Grammatical uniqueness*: Nation (2001) pointed out that some collocations are regarded as grammatically unique collocations like *hell for leather*; however, some collocations may be exceptions to the rules as in *go to bed* where bed can stand without an article and others follow regular patterns like *strong tea*. Consequently, the grammatical uniqueness scales range from *grammatical uniqueness* to *grammatically regular* with patterned exceptions like *go to bed*/ s*chool*/ *hospital* as the mid-point.

(vi) *Grammatical fossilization*: The grammatical fossilized collocations are the collocates which do not allow a change in word order, inflections, or part of speech to form of collocations (i.e. *by and large, law and order*). However, some collocations allow minor changes; for example, *kick the bucket* can be slightly changed to *kicked the bucket* as in *She kicked the bucket.* Therefore the grammatical fossilization scales can range from *no grammatical variation* collocations like *by and large, law and order* to *changes in part of speech* collocations as in *She kicked the bucket* and *When do you expect her to kick the bucket?.*

(vii) *Collocational specialization*: The collocational specialization scales range from *always mutually co-occurring* to *all occurring in a range of collocations* with *one bound item* in the middle of the range. Nation (2001) indicated that the *always mutually co-occurring* collocations are collocates that never or rarely occur separately (i.e. *Anno Domini*, *be-all*, and *end-all*), while the *all occurring in a range of collocations* are those collocations consisting of items that can occur with a range of other collocates (i.e. *good answer* and *commit suicide*). In respect of the *one bound item*, Nation (2001) explained that they are collocations which consist of one item that

must occur in the presence of its collocate, while the collocate may occur with other words; for example, *kith and kin* where *kith* seems to be limited to this phrase, but *kin* can occur in many places. Other examples are *to and fro*, *leap year*, *bubonic plague* (Nation, 2001, p. 331).

(viii) *Lexical fossilization*: The lexical fossilization scales range from *unchangeable* to *allowing substitution in all parts* with *allowing substitution in one part* in the middle of the scales. The *unchangeable* collocations are comprised of collocates that cannot be substituted by other words (i.e. *a bird's eye view*, *No fear!*, and *by and large*). The allowing *substation in all parts* collocation, on the other hand, are collocations were substitution by words of related meaning is acceptable; for instance, *entertain a belief*, *entertain an idea*, *entertain a desire*, *last week*, *last month*, *last year*, and etc. (Nation, 2001, pp. 331-332).

(ix) *Semantic opaqueness*: The *semantic opaqueness* is used to define an idiom whose meaning of the whole are not deducible from the meaning of the parts; for example, *under someone's feet* and *have a spot for someone*. The semantic opaqueness scales range from *semantically opaque* to *semantically transparent*

(x) *Uniqueness of meaning*: Nation (2001) explained that some collocations have only one meaning like *on behalf of*, *answer the door*, and *keep a secret*; however, other collocations have several meanings; for instance, *kick the bucket* has two meanings which are to die and to kick the bucket with your feet. Therefore, Nation (2001) applied the criterion to describe these types of collocations as the *uniqueness of meaning* whose scales range from *only one meaning* to *several meaning*s with *related meaning* in the middle of the scales.

2.5 Importance of Collocation Teaching

Hedge (2000) highlighted the significance of communicative competence as the center of English language teaching. The communicative competence has been believed to be more substantial for EFL learners than linguistic competence (Broughton, Brumfit, Flavell, Hill, and Pincas, 1978, p. 30) and only the linguistic correctness is insufficient for communicative purposes (Saville-Troike, 2006, p. 100). Holliday (1994) pointed out that lexical knowledge is one of the aspects of language that learners should master so as to achieve the communicative competence. Accordingly, mastering lexis is one of the main factors to achieve the communicative

competence, as Wilkins (1972, p. 111) also mentioned that “while without grammar very little can be conveyed, without vocabulary nothing can be conveyed”. In addition to Wilkins (1972), Lewis (1993) also emphasized the importance of lexical knowledge by saying that “language consists of grammaticalised lexis, not lexicalized grammar”. That means “collocations are not part of grammar, but they make use of grammar, and are part of what it means to use English naturally” (Leech, Crickshank & Ivanic, 2001, p. 48). Hoey (2005), moreover, remarked that mastering lexical structure must precede acquiring grammatical structure and it is impractical to replace the vocabulary with grammar. The vocabulary is, therefore, far more significant than grammar (Karoly, 2005, p. 58); however, learning vocabulary is not just knowing the meaning of an isolated word defined in its dictionary, but learners should acquire the type of words with which they are often associated and know how the words are combined together as well. This means the knowledge of collocations or multiword units is essential for language learners to master vocabulary in the target language (Lewis, 2000). Woolard (2000) also maintained that “learning more vocabulary is not just learning new words, it is often learning familiar words in new combinations” (p. 31).

As mentioned earlier, the lexical competence is one of the main factors in mastering communicative competence. McKeown and Radev (2000) also suggested that there is widespread use of collocations and language learners cannot achieve target language fluency without incorporating such collocations in their speech. This means there is a positive relationship between communicative competence and collocational knowledge as Hill (2000, p. 49) suggested that “we are familiar with the concept of communicative competence, but we need to add the concept of collocational competence to our thinking”. McCarthy (2006) proposed that vocabulary acquisition should be achieved through lexical phrases not individual words, and learners’ attention should be focused on larger sequences of language to acquire the knowledge of how words are combined through collocations. Moreover, Marton (1997, p. 43) indicated the significance of collocations by stating that collocations should be regarded as one of the core lessons of language learning in order to help high-proficiency students to achieve more native-like command of the target language. In a similar way, Nation (2008) remarked the most recognizable benefit of learning collocations is that learners will sound more native like because collocational knowledge allows learners to say or write things like a native speaker.

Moreover, Brown (1974) indicated that EFL/ESL learners' knowledge of vocabulary, oral fluency, listening comprehension, and reading speed can be increased by learning collocations. He furthered explained that by learning collocations, learners could be able to recognize language chunks produced by native speakers in both speaking and writing.

Lewis (1993) supported the view that collocational knowledge is crucial for language acquisition and "a central element of language teaching is raising students' awareness of, and developing ability to chunk language successfully" (Lewis, 1993, Vi). Other scholars like Nattinger (1980) also proposed collocations as a central role in language acquisition:

> For a great deal of the time anyway, language production consists of piecing together the ready-made units appropriate for a particular situation and …comprehension relies on knowing which of these patterns to predict in these situations. Our teaching therefore would centre on these patterns and the ways they can be pieced together, along with the ways they vary and the situations in which they occur.
>
> (Nattinger, 1980, p. 341)

Additionally, collocations have long been the object of linguistic and lexicographic study in an effort to both define them and include them in dictionaries of language (McKeown and Radev, 2000).

The most justifiable explanation why collocations should be emphasized in EFL classrooms was given by Hill (2000). Hill (2000) suggested that EFL students should be taught to be aware of collocate predictability. This is because "vocabulary choice is often predictable in such a way that a word uttered by speaker could make listener expect a range of possible partner" (Phoocharoensil, 2013, p. 2). Another reason is that there are a great number of collocations in authentic spoken and written English. Leaning collocations, hence, is challenging and can substantially provide a lot of potential benefits to EFL students. The last reason given by Hill (2000) is that mastering collocations can possibly facilitate the human thinking process allowing a successful and fluent communication. Kuiper, Columbus & Schmit (2009), as cited in

Phoocharoensil (2013), also supported this idea by remaking that “formulaic sequences offer processing efficiency since single memorized units composed of a string of words are processed more quickly and easily than word sequences generated creatively” (p. 2).

Consequently, learning collocations provides substantial benefits to learners because collocations can increase and enhance learners’ language competence, communicative competence, and native-like language productions (Hashemi, Azizinezhad, & Dravishi, 2012). Teachers, consequently, should be encouraged to raise students’ awareness of collocations and initiate their own action research to ensure the changes they make are of benefit to students.

2.6 Pedagogical Approaches to Collocation Teaching and Learning

There are several pedagogical approaches to collocation teaching and learning, but one of the most contentious issues within the field of collocation teaching and learning is explicit method versus implicit method.

2.6.1 Explicit method

Brown (2000) defined explicit learning and teaching as a “conscious awareness and intention to learn” (p. 217). For this method, learners are presented with explicit structures and their attention is directed to the subject. This method is, thus, considered as a deductive and teacher-centered process. Many scholars and linguists have asserted that this explicit method in teaching collocations is more effective and useful because it can raise learners’ awareness of the content (Lewis (2000); Lin (2002); Nesselhauf, 2003; Stoitchkov, 2008; Willis & Willis, 1996; Ying and Hendricks, 2004). Woolard (2000) also highlighted the importance of raising awareness of collocations. He mentioned that students should be explicitly taught collocations and the most effective way for raising awareness of collocations is to put an emphasis on their mis-collocations. Collocations, therefore, must become part of planed language input and should be deliberately selected to incorporate into learning materials (Swan, 1997). Learners; however, should be explicitly informed about the selected collocations so as to necessitate their greater awareness of the nature of lexis (Woolard, 2000).

2.6.2 Implicit method

The implicit method was defined by Brown (2000) as learning conscious attention or awareness. Unlike explicit approach, the structures or subjects are not explicitly presented to learners, so they have to inductively figure out language rules from the provided information. In this respect, learners must employ "input processing to find out whether the input information contains regularities, and if so, to work out the concepts and rules with which these regularities can be captured" (Brown, 2000, p. 131). Ellis (2006) supported the implicit approach of teaching collocations by stating that raising conscious awareness and attention is not necessary for students to learn or memorize collocations; on the other hand, students should be encouraged to learn collocations naturally and in a native-like way. This view is borne out by Fan (2009) who mentioned that native speakers do not consciously learn collocations but they acquire the knowledge of collocation subconsciously and gradually. Salimi, Tavakoli, and Ketabi (2010) also claimed that "…this level of word co-occurrence restriction is not something the speaker has to learn about. Once the meanings of words are known, the limitation follows automatically" (Salimi, Tavakoli, & Ketabi, 2010, p. 162).

2.7 Materials for Collocation Teaching and Learning

2.7.1 The corpora and concordances

According to Koosha and Jafarpour (2006), concordance is "a method of analyzing language by studying structures and lexical patterns found in digital database". Willis and Willis (1996) remarked that nowadays most students have a great opportunity to access to the digital database where they can learn how to speak and write fluently and naturally. Concordance lines also provide an opportunity for students to be exposed to collocations used by native speakers in various contexts. Fox (1998) supported the use of concordance by stating that the use of concordance is probably one of interesting methods to give students strategies to deal with collocations. He explained that millions of collocations which can be retrieved from the British National Corpus (BNC) could be applied as a source to teach the patterns of word combinations and collocations. The use of concordance, however, has some drawbacks as well. This is because "language changes over time and collocations

might significantly change within years" (Farrokh, 2012, p. 68). Thus, the collocation lists should be frequently updated to make them current.

2.7.2 Collocation dictionaries

Collocation dictionaries are regarded as one of most effective and valuable sources of data to teach collocations. Learners' collocational knowledge can be further enhanced by using dictionaries in classes. This method is also believed to be a practical method to promote independent learning strategy as well (Farrokh, 2012). Learners can independently explore the contextual information on the use of expressions after being taught to use collocation dictionaries effectively. Nonetheless, learners must have a systematic way of recording the information provided in collocation dictionaries in order to gain maximum benefit. This means teachers sometimes have to teach learners how to use dictionaries as a tool to acquire collocational knowledge (Farrokh, 2012).

2.8 Causes of EFL Learners' Collocational Errors

EFL learners' performance in producing English collocations may be influenced by several factors, and these various factors probably cause errors in EFL learners' English collocational acquisition and production as well. According to some linguists and scholars (e.g. Bisk-up, 1992; Boonyasaquan, 2006; Huang, 2001; Mongkolchai, 2008; Nesselhauf, 2003, 2005; Phoocharoensil, 2013; Yumanee & Phoocharoensil, 2013) who have conducted studies to investigate and analyze collocational errors in EFL learners' productions, EFL learners' collocational errors can probably be attributed to the following sources of problems.

2.8.1 Negative first language-transfer (L1-transfer)

Many linguists and scholars having conducted studies to investigate EFL learners' English collocational comprehension and productions revealed that EFL learners' first language is one of the primary factors leading to EFL learners' collocational errors. These researchers explained that English collocational errors in EFL learners' productions may result from learners' assumption that there is always an equivalent collocation between L1 and L2, so these EFL learners try to directly translate collocations from their L1 to L2 collocations. As a result of direct

translation, EFL learners sometimes produce deviant English collocations if there is a discrepancy between L1 collocations and L2 collocations.

A number of past studies (e.g. Bisk-up, 1992; Boonyasaquan, 2006; Huang, 2001; Mongkolchai, 2008; Nesselhauf, 2003, 2005; Phoocharoensil, 2013; Yumanee & Phoocharoensil, 2013) have revealed the negative transfer of L1 in EFL learners' collocational productions. According to Bisk-up (1992), a strong influence of L1 was observed in Polish and German EFL learners' English collocational errors. She explained that although the L1 negative transfer in Polish EFL leaners was greater than that in German EFL learners, both groups produced a number of unacceptable English collocations resulting from L1 transfer. Similarly, Huang (2001) analyzed Taiwanese EFL learners' performance of English collocations and reported that learners' L1 influence was the most significant factor causing EFL learners' collocational errors. He also explained that most Taiwanese EFL learners did not have sufficient knowledge of English collocations, so the primary source of collocational knowledge was their native language. Consequently, when some English collocations are not equivalent to or do not exist in their L1 collocations, learners may produce an unacceptable English collocation.

Nesselhauf (2003) further investigated L1 influence on German EFL learners' collocational production and concluded that L1 was possibly responsible for English collocational errors. She also pointed out that EFL learners seem to have some collocational problems in the target language (TL) when a TL collocation does not exist in their L1. The L1 negative transfer that leads to English collocational errors can be found among Thai EFL learners as well. Boonyasaquan (2006) conducted a study to analyze Thai EFL learners' collocational productions and revealed that L1 negative transfer was the primary source of errors in their translation of business articles from Thai to English. This is possibly because of their direct translation from Thai to English. In addition to Boonyasaquan (2006), Thai EFL learners' use of English collocations was investigated by Mongkolchai (2008). Mongkolchai (2008) conducted her study with third year English major students at Srinakharinwirot University in order to examine their ability of using English collocations. A collocation test comprising 56 items, based on seven patterns of Lewis (2000) strategy, was administered to investigate the participants' collocational performance. She confirmed the findings of Boonyasaquan (2006), revealing that Thai

EFL learners heavily relied on their L1 when producing English collocations and this caused collocational errors in TL.

Yumanee and Phoocharoensil (2013), furthermore, reported some deviant English collocations in Thai EFL learners' performance. They investigated Thai EFL learners' collocational performance in a multiple-choice task and a translation test. Yumnanee and Phoocharoensil (2013) revealed that collocational error in Thai EFL learners are often caused by the differences between L1 and L2.

A recent study of Thai EFL learners' collocational production was conducted by Phoolcharoensil (2013). He examined the influence of Thai EFL learners' L1 on the acquisition of L2 collocations. The study was conducted with 90 freshmen students at Thammasat University, Thailand and the data were elicited through a timed (60 minutes) in-class written essay. Like Boonyasaquan (2006), Phoocharoensil (2013) confirmed that "Thai EFL learners' mother tongue has a negative impact upon their English collocation acquisition" (p.4). He also demonstrated that both high-proficiency and low-proficiency Thai EFL learners depended upon their L1 collocational counterparts in producing L2 collocations, which found support for Nesselhauf (2003) and Boonyasaquan (2006).

2.8.2 Overgeneralization and repetition

The overgeneralization and repetition have been considered as another important contributing factor to erroneous collocations in English. According to Howarth (1998), EFL learners, especially those with limited knowledge of L2 English collocations, mostly depend on the repetition strategy when producing TL collocations. This means EFL learners repeatedly use a limited set of familiar collocations because they are not confident to create L2 collocations (Howarth, 1998). Many related studies have confirmed that the repetition is probably a major source of collocational deviation in TL. Granger (1998) conducted a study with French EFL learners to investigate how learners employ repetition in their L2 collocational productions. She reported that French EFL learners seemed to overuse the intensifier *very* in the structure of adverb + adjective. Like Granger (1998), Shih (2000) also conducted a comparative study of Taiwanese Learner Corpus of English and British National Corpus (BNC) to analyze the overused English collocations, emphasizing a group of synonyms *great*, *large*, and *big*, among Taiwanese EFL learners. The results of the study indicated that Taiwanese leaners of English were likely to employ the adjective *big* more frequently than native speakers. He also explained that Taiwanese

leaners tend to apply the repetition or overgeneralization when facing some difficulties in producing English collocations.

The overgeneralization is also reported in the study of Zughol & Abdul-Fattah (2001), indicating its negative impact on EFL leaners' acquisition of English collocations. Zughol & Abdul-Fattah (2001) maintained that language learners sometimes overgeneralize a feature of L2 to another causing incorrect use of L2. They further concluded that this extension of the use of L2 features is a source of collocational errors in L2. The overgeneralization can be found among Thai EFL learners as well. According to Phoocharoensil (2011), Thai learners presumably overgeneralized some L2 features and produced deviant collocations in L2. He, however, explained that the overgeneralization signify language learners' strategy in the process of L2 acquisition of collocations. The following examples illustrate collocational errors resulting from overgeneralization and repetition.

(1)* The room that I *very like* is the dining room.
(2)* I *very love* to stay at home.

(Phoocharoensil, 2011, p. 115)

As shown in (1) and (2), the collocational misuse is possibly caused by an overgeneralization of the intensifier *very* (Phoocharoensil, 2011). With reference to Longman dictionary of contemporary English (2009, p. 1949), *very* is used as an adverb to emphasize an adjective, as in (3), where *very* modifies the adjective *good*; an adverb, as in (4), where *very* is used to modified the adverb *fluently*, or a phrase, as in (5), where *very* modifies the adjective phrase *significant for EFL students.*

(3) Nathan is a very good student.
(4) I can speak English very fluently.
(5) The ability to use correct collocations is very significant for EFL students.

2.8.3 The application of synonymy strategy

Apart from EFL learners' L1 transfer, overgeneralization, and repetition, the application of an analogy strategy referred to as synonymy strategy in

English collocation learning has been found as one of the major sources of collocational errors among EFL learners. According to Phoocharoensil (2011), the application of synonymy strategy means to substitute a word in a collocation with another word that has a similar or close meaning. This application may sometimes leads to collocational deviations in TL, as indicated in Boonyasaquan (2006) that a synonym cannot always be replaced in the elements of English collocations. Phoocharoensil (2011) also supported the drawback of the application of synonymy strategy by explaining that "words that are very close in meaning do not always share the same grammatical collocation" (p. 106). This can be illustrated from the following examples of the verbs *say* and *tell*.

(6) American parents always *say* to their children about their life.
(7) Parents always *tell* their children about their life.
(8)* Parents always *say* their children about their life.
(9)* American parents always *tell* to their children about their life.

Although these verbs have almost the same meaning, their grammatical patterns are different. That is, the verb *say* requires the preposition *to* before an animate object, as in (6) but the preposition is not needed for the verb *tell*, as in (7). Therefore, to replace the verb *say* with *tell* without *to* is grammatically incorrect in English, as in (8). In a similar vein, to use the verb *tell* immediately followed by the preposition *to*, as in (9), leads to an incorrect structural pattern as well.

Many previous studies of English collocations (e.g. Boonyasaquan, 2006; Howarth, 1998; Mongkolchai, 2008; Phoocharoensil, 2011; Zughol and Abdul-Fattah, 2001) have also revealed some risks of the synonymy strategy in the process of learning English collocations. The study of Howarth (1998) indicated that Arabic EFL learners replaced a word with its synonym leading to collocational errors. Like Howarth (1998), Zughol and Abdul-Fattah (2001) conducted a study with Arabic EFL learners to investigate synonyms in the use of English collocations. The results of their study demonstrated that Arabic EFL learners seemed to rely on the use of the synonymy strategy and that often resulted in unacceptable English collocations. In a similar vein, the studies on the acquisition of English collocations among Thai EFL learners also reported some deviant English collocations resulting from the

application of synonymy strategy. For instance, Boonyasaquan (2006) found that 8.26% of Thai EFL learners' collocational deviations in their translated business news articles indicated a consequence of the use of its synonym to replace a word partner of a collocation. The study of Mongkolchai (2008), furthermore, explained the use of synonyms in Thai EFL learners' collocation use. She conducted his study with English-major students and concluded that the application of synonym strategy may be one of the primary sources of learners' collocational errors. Apart from the study of Boonyasaquan (2006) and Mongkolchai (2008), one of current studies was conducted by Phoocharoensil (2011), who examined the errors in the acquisition of collocations among Thai learners of English. Phoocharoensil (2011) reported that Thai learners probably employ the synonymy strategy for learning English collocations and this contributed to collocational errors in English. He further explained that Thai learners replace a word with its synonym more in lexical collocations than in grammatical ones. The examples (10) and (11) illustrate the lexical errors being attributed to synonymy.

(10)* I always prefer to stay in my *peaceable home* on the weekend.

(11)* I *authentically believe* that I have come too far.

(Phoocharoensil, 2011, pp. 114- 113)

Phoocharoensil (2011) explained that the lexical error in (10) may be caused by the learners' confusion over *peaceable* and *peaceful*, which are the semantically-related adjectives. Although the meanings of *peaceable* and *peaceful* are similar, they have totally different usage. That is *peaceable* is used to modify a person who does not like fighting or a quarrel (Longman dictionary of contemporary English, 2009, pp. 1281-1282), while *peaceful* is generally used to modify a time, place, or situation to express its quietness. Like (10), the lexical error in (11) is also caused by the learners' confusion over the two semantically-related adjectives. Despite their common meaning, both being associated with describing something real (Longman dictionary of contemporary English, 2009, p.17 & p. 1892), *truly* and *authentically* should be used differently. That is *truly* is more likely to occur with the verb *believe*, according to many collocation dictionaries (e.g. *OXFORD Collocations dictionary for students of English* (2009) and *The BBI Dictionary of English Word Combinations*

(1997), *The LTP Dictionary of Selected Collocations (1997)*, and *Macmillan Collocations Dictionary (2010)*.) and the BNC data.

With regard to the above sources of English collocational errors, Howarth (1998) concluded that EFL learners produce some deviant collocations in English because they have insufficient collocational knowledge. He, furthermore, added that first language interference and intralingua transfer are also the major sources of such errors. These may explain why EFL learners produce unacceptable English collocations in their productions.

2.9 Data-driven Learning (DDL)

2.9.1 Definition of Data-driven Learning

The term 'Data-driven Learning' (DDL) was first introduced by Johns (1991) to describe "the use of classroom of computer-generated concordances to get learners to explore regularities of patterning in TL, and the development of activities and exercises and activities based on concordance output" (p. 4). Hadley 2002 further defined DDL is a study of a huge data base of English text (corpora) with software programs called concordance. This means DDL is a leaning approach that implements 'a computer-retrieval collection of texts' to language teaching and learning. The implementation of the computer-retrieval collection of texts refers to the use of concordance-based materials retrieved from a program called a corpus. According to Sripicharn (2002), based on theory of Johns and King (1991), the DDL is also referred to as 'classroom concordancing', which means:

> The use in the classroom of computer-generated concordances to get students to explore the regularities of patterning in the target language, and the development of activities and exercises based on concordance output.
>
> (Johns and King, 1991, p. 3)

In the DDL, learners with a particular problem about language will consult the data retrieved from software to master word usage or grammatical structures by making the conclusion from numerous presented language inputs. With

regard to this approach, language learners have to act as a linguistic researcher investigating the regularities of language through multiple exposures to authentic linguistic data presented in the form of concordance lines. This means the DDL is regarded as an inductive approach to language learning where learners are encouraged to make their own interpretations of the data (Sripicharn, 2002). Sripicharn (2002), however, remarked that DDL is quite different from other inductive approaches in that learners are viewed as the center of language learning and they have to directly learn from the corpus data. Johns (1997) also supported the idea about learners as a language researcher and the center of the DDL by suggesting that:

> The central metaphors embodying the approach are those of learners as 'linguistic researcher', testing and revising hypotheses, or as 'language detective', learning to recognize and interpret clues from context ('Every student a Sherlock Holmes').
>
> (Johns, 1997, p. 101)

Moreover, Bastone (1995) claimed that DDL is a pedagogic continuum from product to process and this process approach toward learning can promote creativity and self-discovery among learners. Rutherford and Smith (1988) also took a view that DDL is a practical way to raise learners' consciousness about the formal properties of target language and language learning should emphasize consciousness-raising activities rather than teaching language rules.

To summarize, DDL is a discovery and exploration-based learning model that applies the use of classroom concordancing to making learners a linguistic researcher whose learning is driven by access to linguistic data. In DDL, as considered an inductive learning approach, learners have to identify the lexical and grammatical patterns of language from the presented data, i.e. concordance lines.

2.9.2 The characteristics of DDL

In respect of its definition, DDL is regarded as a corpus-based data-driven foreign language learning technique allowing learners to generalize language rules by observing a number of corpora concordances. DDL is, therefore, different from traditional language teaching methods in which language rules are directly presented to learners. Apart from its difference from traditional learning method,

Zhen (2005) and Guan (2013) further characterized DDL based on the following three aspects.

2.9.2.1 Autonomous learning and self-discovery

The first aspect that characterizes DDL is learners' autonomy, which is the focus of DDL technique (Zhen, 2005). Unlike traditional language teaching approaches, DDL puts an emphasis on learners' autonomous learning and student-centeredness. That means learners in DDL are not passive learners but they are encouraged to make self-discovery and take responsibility for their own learning. According to Johns (1997), DDL learners have to play a role of a language researcher to discover a particular rule and pattern embedded in massive language data. In other words, a DDL approach can promote learners' autonomy because it allows learners to initiate what language goals they desire for and how to achieve such goals.

2.9.2.2 Authentic language input

According to Zhen (2005), authentic language input is another characteristic of DDL. He mentioned that the primary source of language input of DDL can be extracted from various corpora such as British National Corpus (BNC) and Collins Birmingham University International Language Database (COBUILD), all of which are a large collection of naturally occurring texts. With regard to the nature of such corpora, a DDL method can provide learners with authentic language environment where they can access authentic language and are able to develop and practice their ability to deal with language variation in real contexts.

2.9.2.3 Inductive learning

According to Zhen (2005), DDL is regarded as one of language teaching and learning techniques that emphasize the inductive learning method. In contrast to the traditional deductive learning method, where language theory or principles are presented to learners prior the application of such language rules, the inductive learning only provides learners with a large amount of authentic language data without any explanation about language rules. This means learners by themselves have to inductively generalize the prescriptive grammatical rules or language patterns presented from such language input.

2.9.3 Theoretical framework underpinnings of DDL

Sripicharn (2002) remarked that although the development of DDL cannot be described by a particular framework, there are four aspects that probably

explain the rationale for the application of this practice-oriented or DDL in language classroom.

According to Sripicharn (2002), the four theoretical issues that underpin the DDL approach are as follows:

2.9.3.1 Computer Assisted Language Learning (CALL)

The use of computers in language classroom may be a primary framework for the development of DDL in language teaching and learning. As mentioned in Sripicharn (2002), DDL is an approach that implements a computer-retrieval collection of texts to language teaching and learning. Put differently, DDL is an integration of computer to language learning and teaching or (CALL). As regards the application of CALL, Sripichan (2002) concluded that DDL gives linguistic knowledge to the learners through application of concordances that provide adequate language data to facilitate learners' investigation processes and stimulates inductive learning strategies for constructing language rules and patterns.

2.9.3.2 The use of corpus data in the language classroom

As mentioned earlier, the primary language input of DDL is corpus-based concordances providing many advantages for language learning. Sripichan (2002) regarded the application of corpus data to language classroom as an effective way to raise learners' awareness of some particular aspects of target-like collocations. The prosodies or connotations of words are another language aspect that can be made more salient to learners through the application of corpus-based concordances (Louw 1993; Sinclair 1991; Stubbs, 1996). Because of these potentials, the use of corpus data can be applied to language classrooms through a DDL approach.

2.9.3.3 Attention to language form

According to Sripicharn (2002), putting an emphasis on language form probably facilitates the target language teaching and learning, and the focus on form might help learners improve their language accuracy although the lesson also focuses on meaning. Schmidt (1990) further explained that attention to language form is very crucial because it provides a facilitating condition to allow 'input' to become 'intake'. This probably means learners are likely to acquire the language forms that they have noticed in language input. In respect of attention to language form, the application of DDL in the language classroom is likely to be justified because DDL

can promote noticing through the use of concordances-- a facilitative role in converting input into intake.

2.9.3.4 Grammatical Consciousness-Raising (CR)

The CR is probably another aspect explaining the rationale of the use of DDL in language classrooms (Sripicharn, 2002). According to Rutherford and Smith (1988), CR is "the deliberate attempt to draw the learners' attention specifically to the formal properties of the target language" (p. 107). Rather than teaching grammar as accumulated items, the objective of CR is to encourage learners' awareness of grammar and to develop their data observation and hypothesis testing skills (Ellis 1993; Rutherford 1987; Skehan 1996; Willis and Willis 1996). The CR is also believed to be a practical way to raise learners' attention to an ignored area of grammar teaching like collocation and to develop inductive learning strategies. In this respect, DDL can also be regarded as a strong form of CR as previously mentioned in the definition of DDL in that DDL is the language teaching approach focusing on raising learners' consciousness about the formal properties of target language through consciousness-raising activities (Rutherford and Smith, 1988). DDL also makes learners a linguistic researcher who will test and revise hypotheses about language patterns (Johns, 1997). That is why the learners in DDL are not regarded as simply a recipient of knowledge but a language researcher discovering the regularity of language.

2.9.4 The Procedures of DDL

Johns (1991) introduced the three steps of the use of DDL in language classrooms. He termed these three procedures for concordance-based and data-driven learning as 'Identification-Classification-Generalization'.

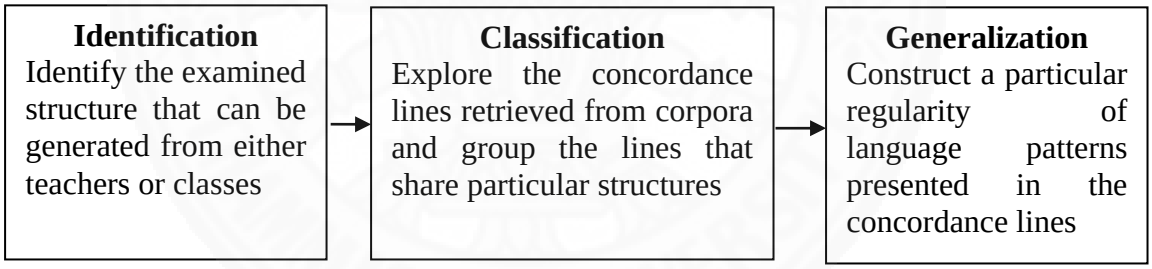
- The *Identification* step refers the process of identify the examined keyword from the inquiries. Johns (1991) suggested that the examined language structures can be generated from either teachers or classes. However, some scholars like Guan (2013) recommended that the use of class-generated areas of inquiry be more effective because these questionable language areas may create an immediate interest with learners and probably respond to learners' questions.

- The second step of DDL procedures recommended by Johns (1191) is *Classification*. The Classification refers to step where the concordance lines are required for learner to explore. In this step, the concordance lines are required for

learners' exploration. The concordance lines can be in a form of paper-based materials made by teachers or retrieved from various corpora like COCA, BNC, and so on. After browsing and skimming through several concordance lines retrieved corpus, DDL learners have to group some concordance lines or corpus-based data that share semantic similarities together. It is revealed that the concordance lines retrieved from corpora are sometimes so overwhelming that learners can probably be easily discouraged. The language teachers, as a result, should sometimes assist learners when the corpus-based data are too difficult and complicated (Guan, 2013).

- *Generalization* is the last step of John's DDL procedures. The generalization step is very important for language learners in DDL approach, as they have to apply their observation and hypothesis testing skills to inductively construct language rules and patterns presented through concordance lines. Guan (2013) mentioned that the generalization may be a dilemma for learners who are familiar with a traditional method that values memorization of language rules rather than the production of generalizations. Thus, the assistance from language teachers may also be required for the first DDL classes.

Figure 2.1: Procedures of DDL



2.9.5 Autonomous DDL and Cooperative DDL

Data-driven learning may offer provide language learners with the opportunity to explore and work directly with corpus data. The corpus data can possibly be retrieved from general corpora such as BNC or COCA, from specifically designed teaching-oriented corpora in a form of paper-based materials or online platform, or even from learner corpora. This mean the corpus data for DDL may be provided by teachers, retrieved by learner from the corpus under teachers' guidance, or accessed by learners autonomously.

2.9.5.1 Autonomous DDL

The 'Autonomous DDL' may be referred to the traditional method of DDL procedures (i.e. Identification, Classification, and Generalization)

proposed by Johns (1991). The learners of the Autonomous DDL have to take responsibility to manage and control their own learning processes without the assistant or guidance of a teacher. The Autonomous DDL puts an emphasis on learners' autonomy and student-centeredness. That means the Autonomous DDL learners are regarded as active learners or active constructors who have to work directly with corpus data to make a self-discovery of the regularity of linguistic patterns (i.e. collocation patterns) and take responsibility for their own learning rather than being passive recipients of knowledge. The fundamental principle of the Autonomous DDL is that the learners have to play a role of a language researcher autonomously accessing the corpus data or concordance lines in order to discover and notice a particular linguistic rule and pattern embedded in such massive corpus (Johns, 1991). In the terms of Autonomous DDL, it is believed that learning is more effective without teacher, i.e. when learners discover a particular rule of language use by themselves (Boulton, 2009). In these cases, DDL learners have to examine the corpus data by themselves in order to inductively notice and discover a particular linguistic structure (i.e. collocation patterns) on their own. Without any help or guidance from teachers, the Autonomous DDL learners need to formulate hypotheses and test such hypotheses against the retrieved concordance lines to arrive at the acceptable linguistic patterns. The Autonomous DDL is, therefore, a learning method that focuses on promoting learners' autonomy and increasing language awareness because it allows learners to take responsibility of their own learning processes by initiate what language goals they desire for and how to achieve such goals without any assistance or guidance of a teacher.

2.9.5.2 Cooperative DDL

The 'Cooperative DDL' is a modified DDL method that integrates and combines the cooperative learning with the corpus consultation. The cooperative learning might refer to the cooperation between learners and teachers or among learners themselves. Unlike the Autonomous DDL learners, the learners of the Cooperative DDL do not autonomously access to the corpus data but the data may be provided by a teacher or accessed by learners under a teacher's guidance and supervision. In Cooperative DDL classrooms, teachers may be regarded as facilitators or guides to assist learners throughout the learning procedures by helping them to formulate hypotheses and questions as well as providing support while they investigate corpus data. Additionally, in some cases of Cooperative DDL, learners

may be provided with the concordance lines that are selected and filtered by teachers before classroom use. This means teachers of Cooperative DDL may select the corpus data which they think is most suitable and practical for learners to easily arrive at descriptions of particular language features (i.e. collocation patterns) rather than letting learners autonomously work with large amounts of corpus data in the form of concordance lines. Despite providing learners with such careful selection of concordance lines, Cooperative DDL teachers may provide leaners with well-designed and learning materials that are carefully selected and edited to facilitate DDL learners. These materials may be suitable for learners who are not familiar and have struggled with the inductive nature of DDL.

Apart from the cooperative with teachers, some cases of Cooperative DDL may refer to data-driven learning activities where learners work in groups to access to the corpus data and obtain concordance lines as their resources in order to discover a particular linguistic pattern. By doing a group work or group consultation during DDL activities, learners are provided with an exposure to corpus consultation and opportunities to interact among group members (Kulsitthiboon & Pongpairoj, 2018). The group interaction is essential in this case of Cooperative DDL because it functions as peer scaffolding. Johnson et al. (2014) supported that the interaction and discussion during cooperative learning allow and encourage learners to construct conceptual understanding and provide supporting feedback for one another. Moreover, the Cooperative DDL among learners provide them with opportunities to develop cognitive learning strategies as well as cooperative learning strategies leading to the construction of their own language learning process in a long term. According to Johns (1991), the application of corpus data and concordance lines in language classrooms can enhance and foster language learning process that promotes and focuses on leaners' ability to enquiry and form assumptions of learners as well as develop the ability to notice some linguistic patterns of the target language in order to form generalizations for language patterns (e.g. word and phrase frequency, collocation tendencies, grammar-lexis links).

2.9.6 The rationale for the use of DDL in language classrooms

Many researchers have conducted several studies to investigate the effectiveness of the use of DDL in language classrooms. These studies have confirmed that DDL seems to provide some benefits for language learners. According to Guan (2013), by allowing learners to induce language patterns and rules from

enormous corpora concordances, the corpus-based data driven is regarded as one of the most efficient language teaching and learning approaches as this method provides learners with various sources of authentic language in real context, creates an appropriate learning environment to attract learners' attention, and promotes learners' autonomous learning ability to take their own responsibility to discover language knowledge. These might be only some good points of DDL to language teaching and learning. The following information is, furthermore, going to illustrate the rationale for the application of DDL in language classrooms.

2.9.6.1 The use of computers in language classrooms (Computer Assisted Language Learning or CALL)

The 21st century educational system emphasizes the integration of computer and technology to language classrooms as a means to develop learners' basic knowledge. This is because the 21st century is considered the digital era when the information technology (IT) becomes one of the academic tools that can be adapted to suit learners' motivation and learning styles (Pennington, 1996). The computer and information technology, as a result, play some crucial roles in language teaching and learning. This means English language teachers should apply a plenty of advanced information technology in their classroom and develop a variety of computer-based and network-based English courses as well as improve the current language learning and teaching methods (Guan, 2013). One of the most practical and beneficial computer technologies is computer technology-based corpus technology because this technology can be applied to language classrooms as a powerful tool for language teaching and learning. Sripichan (2002) also advocated the application of CALL and DDL in language classrooms, claiming that this language learning and teaching approach can attract learners' motivation and provides interactive facilities to language classrooms.

2.9.6.2 Promoting learner autonomy and lifelong learning

One of the main features of DDL is its focus on learner autonomy as the learners in DDL can take responsibility for their own learning. This means learners have an opportunity to initiate language goals and ways to reach such goals by themselves (Sripichan, 2002). Johns (1991) further supported the application of DDL as a means to promote learners' autonomy because he believed that by using the DDL method, learners can rely on their own intelligence to make the language investigation processes. As a result of focusing on learner autonomy, DDL in turn can

lead to learners' lifelong learning. Not only do learners of DDL acquire a particular aspect of language, they also have an opportunity to use their creativity and practice their problem-solving skills to generalize language rules from the presented information. Zhen (2005) stated that unlike traditional language teaching and learning environment where learners are passively instructed by teachers, DDL encourages learners to make self-discovery in order to acquire language rules and patterns.

2.9.6.3 Effective way to raise learners' consciousness to a particular language point

DDL is regarded as a practical approach to raise learners' awareness of particular properties of target language through consciousness-raising activities (Rutherford and Smith, 1988). This advantage of DDL in language classroom is supported by Sripichan (2002) as he advocated the use of DDL as an effective teaching method to make a particular language aspect like collocations more salient to language learners. He further suggested that DDL and the application of concordance lines help learners notice and aware of some patterns of language. This is because the Keyword-In- Context (KWIC) concordance format, where a sorted key word is presented in the middle with the left and the right context, can effectively draw learners' attention to the structures and the patterns of language.

2.9.7 The benefits of DDL in vocabulary teaching and learning

Many studies have reported the potential advantages of the use DDL in language classrooms (e.g. Aston, 1998). Johns (1991) maintained that DDL can "help [students] to become better language learners outside the classroom" (p. 31) because this teaching approach possibly encourages those learners to utilize their noticing ability and raises learners' consciousness, and that results in greater autonomy and better language learning skills in the long run. O' Sullivan (2007) also supported Johns' perspective about these potential benefits of DDL by stating that DDL can promote numerous study skills such as "predicting, observing, noticing, thinking, reasoning, analyzing, interpreting, reflecting, exploring, exploring, making inferences (inductively or deductively), focusing, guessing, comparing, differentiating, theorizing, hypothesizing, and verifying" (p. 277). A number of researchers have also supported the use of concordance or DDL in teaching vocabulary for many reasons. These scholars believe that DDL is an advanced computer-aided teaching approach that allows language learners to inductively discover and generalize vocabulary usage by observing authentic language data in the

form of concordance lines sorted from various sources of corpora. Guan (2013), for instance, advocated the application of DDL to vocabulary teaching for the fact that it can provide learners with authentic data which make them accustomed to target language vocabulary in the real communication use. This helps them acquire the vocabulary usage more naturally and successfully.

Apart from offering authentic vocabulary usage, DDL also provides learners with a large number of various examples of language usage in the form of concordance lines that can broaden learners' knowledge of vocabulary. This is because the sorted vocabulary items are usually presented in the KWIC (keywords in context) format where a keyword is shown with its context, so learners are encouraged to be intentionally exposed to not only the keywords but also thousands of millions of co-occurrence words. Therefore, DDL learners' vocabulary knowledge is probably enhanced and they can acquire the usage of words with collocational context.

Moreover, DDL method is believed to be the innovative application of vocabulary teaching (Guan, 2013). DDL is considered as an extensive application of information technology in language classrooms and this innovative application makes vocabulary teaching and learning more convenient and more practical. Guan (2013) further remarked the convenience of DDL by pointing out that DDL is very innovative thanks to the use of corpora, which equips learners with the examples related to a sorted word or a particular language phenomenon within a few seconds. This means the implementation of the innovative application of DDL brings about advancement to the traditional approach of language teaching and learning. In conclusion, DDL can provide a lot of advantages for vocabulary teaching and learning because it makes learning and teaching vocabulary more authentic, productive, and innovative. As a result, this computer-based teaching mode has been widely applied to English vocabulary teaching in various domains such as collocation, and colligation, i.e. a grouping of words based on the way they function in a syntactic structure, and semantic prosody, i.e. the evaluative meaning or communicative purpose of extended lexical units.

2.10 Limitations of DDL

Apart from its advantages, there have been some controversial issues regarding the limitations or dilemmas of DDL approach as well. That is, DDL is probably too complicated for some students (Willis, Shortall and Johns, 1995). Not only for students, Johns (1991) indicated that some language teachers may lack confidence to apply DDL in their classrooms because they believe that DDL may not be appropriate for all of their students, especially those with low-proficiency:

> Talking about the DDL approach with other language teachers, I am sometimes reproached that while this way of language-teaching by stimulating student questions and by doing linguistic research in classroom on a cooperative basis may be very well for students an intelligent, sophisticated, and well-motivated as ours at Birmingham University, it would not work with students as unintelligent, unsophisticated and poorly-motivated as theirs.
>
> (Johns, 1991, p. 12)

As mentioned by Johns (1991), the concerns about the barriers of DDL approach are not probably due to the nature of the technique itself but it is about the implementation of DDL. Like Johns (1991), Boulton (2010) summarized three potential limitations of DDL as follows:

The first concern is about the investment in time, effort, money, and resources. Some scholars believe DDL cannot yield sufficient good results to classrooms. Kirschner et al. (2006) criticized that DDL does not bring enough payoffs to leaners; however, these researchers primarily make arguments concerning the application of DDL in medical, mathematical, or science classrooms, and there is a little to discuss language learning. With regard to the use of DDL in language classrooms, Boulton (2009) noted that most empirical studies involve small scales of qualitative studies conducted with secondary questions to analyze leaners' reaction to DDL or the application of corpora as a reference tool. This means the analysis of learning outcomes is relatively small and overlooked. Therefore, a study investigating

the effectiveness of DDL in language learning should be focused to allow a broader understanding about the outcomes of DDL (Boulton, 2010).

Some researchers believe that DDL is too complicated for low-level learners and consider this as another concerned limitation of DDL. To support their arguments, these researchers have conducted many studies and concluded that DDL is appropriate only for advanced learners not for low-level learners. However, Boulton (2009) remarked that these academic articles are usually conducted by such researchers working with high-proficiency university students. He explained that based on his survey, it was found that there were only a few empirical DDL studies on low-proficiency students (e.g. Granath, 2009). This might be the reason why there is a common perception that DDL is effective for sophisticated learners. Furthermore, Boulton (2010) remarked that although there have been a few studies conducted with low-proficiency learners, these studies (e.g. Tian, 2005) show some positive results of DDL with low-level learners. Therefore, the conclusion that DDL is effective only for high-proficiency learners may be a controversial issue that needs more comprehensive studies to clarify this argument.

The last limitation of DDL was mentioned by Turnbull and Burston (1998). According to Turnbull and Burston (1998), the effective application of DDL requires considerable training. This limitation is supported by Boulton (2010) -- "DDL is useful only in a computer laboratory and with expert devoting considerable time to training learners in small groups and to developing sophisticated corpora, software, and techniques" (p. 537). Apart from requiring a lot of training, technological considerations are regarded as a significant problem as well (Yoon and Hirvela, 2004). Many language teachers who are interested in using DDL have reported that the regular access to well and sufficiently-equipped computer rooms with technical supports is a dilemma that they have to encounter when deciding to apply DDL to their language classrooms (Tian, 2005). Farr (2008) also reported that teaching language in computer laboratories is apprehensive for some teachers. Like Tian (2005) and Far (2008), Boulton (2010) further pointed out the limitation of DDL and technology in language classrooms by explaining that "Even accepting the potential benefits of a DDL approach, the technology is clearly perceived as a major obstacle to the implementation of DDL in classes around the world" (p.1). As a result of the complicated technology, many language teachers do not recognize DDL as a potential teaching approach (Gabrielatos, 2005).

2.11 Research on Collocation Teaching and Learning through DDL

Several previous studies in both foreign and Thai contexts have outlined the application of DDL or concordance-based to collocation teaching and learning. As seen in previous research on collocation teaching through DDL, most of the researchers have investigated the effects of DDL on teaching and learning collocations.

2.11.1 Research on using DDL to teaching English collocations in EFL and ESL contexts

Jafarpour and Koosha (2006) conducted an experimental study to investigate the effects of concordancing materials presented through DDL approach on the teaching and learning collocation of prepositions with Iranian EFL students. They also needed to find out whether the knowledge of collocation of prepositions was significantly different among different levels of EFL learners' proficiency. The L1 inference on EFL learners' knowledge of collocation of prepositions was another dimension that Jafapour focused on. To shed the light on these inquiries, 200 English-major students at three universities in Shahrekord (including Shahrekord University, Payeme Noor University of Shahrekord, and Islamic Azad University of Shahrekord) served as the participants of the study. These participants were randomly divided into one control group and one experimental group. After taking a pretest on collocation of prepositions, the control group was taught collocations of prepositions through a conventional-based approach, while the experimental group underwent the DDL approach. To examine the effectiveness of such approaches, the posttest, which was the same as the pretest, was administered, and the results revealed that the posttest scores of the experimental group were significantly higher than those of the control group. This means DDL approach provided a highly effective teaching method to teaching and learning collocation of prepositions. The findings also showed that there was a positive correlation between the participants' level of proficiency and their knowledge of collocation of prepositions. As regards the effect of L1 on L2 acquisition of collocation of prepositions, the analysis of collocational errors indicated that Iranian EFL learners transfer their L1 collocational patterns to their L2 productions.

Chao (2010) conducted a research study to investigate the impacts of concordance lines on collocation learning of Taiwanese junior high school students and their attitudes toward this concordance-based learning activity. The 71 junior high school students in Tainan County, Taiwan were the participants of the study and they were randomly assigned to the experimental group of 36 students and the other control group of 37 students. These participants were considered high-proficiency English users based on their academic performance of each semester. Before receiving treatment, both groups had to take the pretest which consisted of both multiple-choice section and fill-in-the-blank section in order to estimate the participants' receptive and productive skills of using 49 target collocations. After the pretest, the experimental group received the collocation instruction through concordance-based learning activity-- the *IWiLL*, which is a concordance program, was served as the primary source of concordance, while the control group underwent the traditional teaching method. The collocation instructions lasted for 15 weeks before the posttest was administered to both control and experimental groups. The scores of the pretest and posttest of the two groups were subjected to Independence Sample T-test in order to examine the effects of concordance learning activities on the participants' knowledge of collocations. The findings of the study showed that the collocational knowledge of the junior high school students in the experimental group was more significantly improved than those in the control group. With regard to the participants' attitudes toward concordance-based learning activity, the closed-ended questionnaire was administered to understand the difficulties the participants encountered during concordance learning and their evaluation of the *IWiLL*, which is a concordance program primarily used in this study. The participants' answers were categorized and frequency was counted and the results indicated that although vocabulary difficulty was the major source of obstacle, they were still capable to complete the activities. They also reported the positive attitude toward concordance-based learning activity and believed that it could improve their knowledge of collocations. In terms of the concordance program, the majority of the participants considered using the concordance program interesting and the format of the program could help them detect the collocations they need easily. In conclusion, these findings reflected concordance-based activities could be incorporated into English curriculum to enhance junior high school students' knowledge of collocations (Chao, 2010).

Binkai (2012) conducted an empirical study to examine Chinese EFL students' attitudes toward corpus-driven English vocabulary learning. The main instrument of the current study was the questionnaires consisting of 19 closed-multiple-choice questions and one open-ended question. The questionnaires aimed at examining the following aspects:

(i) the participants' attitudes toward leaning collocations through corpus-driven learning

(ii) the impacts of corpus-driven learning on the participants' leaning styles and methods

(iii) the participants' assessment on the effectiveness of corpus-driven learning

To obtain the information regarding the above aspects, the 98 participants studying at a college in China had to complete the questionnaires at the end of semester after attending the English classes where they had been taught collocations through *New College English Corpus (NCEC)* and *NEC* for 15 weeks. The findings of the study revealed that the participants had positive attitudes toward learning collocations through concordance. They reported that searching the meaning and usage of collocations through concordance could stimulate their interest in learning new vocabulary. In respect of learning habits, the results were also positive. They indicated that they could be responsible for the outcomes of their learning. This means the participants' prefer autonomous learning method which can be achieved through concordance-driven instructions. They also believed that corpus-driven learning is one of the best appropriate methods to learn English collocations. As regards the effectiveness of corpus-driven learning, the statistics showed that most participants admitted that concordance is an effective way to enhance their knowledge of collocations and accepted the fact that corpus beneficially provided a lot advantages to language acquisition. However, the participants reported some disadvantages and problems regarding the corpus-driven learning. Based on the information obtained from the open-ended questions, some participants informed that they could not complete the assigned tasks in time because of the abundant concordances that could possibly frustrate their initiative to learn. These participants also mentioned that they prefer the learning method that combined concordance lines and dictionary information. This was because they believed that dictionary could better explain the meaning of unknown words. Consequently, Binkai (2012)

concluded that “in spite of the problems, the corpus-driven vocabulary learning approach is favorably rated and proves to be an effective aid” (p. 135).

Like Binkai (2012), Geluso & Yamaguchi (2014) investigated Japanese EFL students’ attitudes toward learning formulaic language through DDL. The 30 Japanese EFL students of a private foreign language university in Japan were purposively selected as the participants of the study. Based on their Test of English for Communication (TOEIC) scores which ranged from 540 to 860 and with a mean of 736, they were roughly classified as intermediate to mid-advanced EFL learners. All of these participants were required to take a 15-week English course where they learned formulaic language through the application of the Corpus of Contemporary American English (COCA). To arrive at a clearer understanding about the participants’ attitudes toward this particular approach to corpus-based learning, they were required to complete the questionnaire consisting of 44 statements which are categorized into the following aspects: (i) difficulty in using corpora, (ii) positive impact of using corpora, (iii) effectiveness of presentation and delivery of coursework, (iv) completing speaking journals and incorporating phrases, and (v) attitudes and beliefs about data-driven learning and its potential. The participants had to indicate their degree of agreement on a 6-point Likert scale, and the participants’ answers from the questionnaire were then triangulated with the information obtained from the follow-up interviews and student reflection logs.

The findings of the study revealed that the participants hold a strong belief about the positive impact of corpus use. The majority of them indicated that the corpus-based learning increased their knowledge of collocations. With regard to the difficulty of using corpus, some participants reported that learning to use COCA was quite difficult and the lack of Internet access was problematic. However, less than half of the participants believed that the abundance of concordance lines was difficult to comprehend. These participants informed that as concordance lines were cut-off, incomplete sentences, they had difficulties in understanding the meaning of such concordances. In addition to the cut-off sentences, an interviewee also claimed that a mismatch of register was one source of the difficulties. In terms of the effectiveness of presentation and delivery of coursework, the majority of the participants thought that although almost entire 90-minute class period was devoted to searching concordance lines and consulting with the teachers and classmates about their findings, they thought that they did not get enough time to complete the tasks.

In regard to participants' attitudes toward DDL, the results from the questionnaire and the interview indicated that most participants had positive perceptions toward DDL and they believed that they would continue to use a corpus as well as recommended this learning approach to other learners of English in Japan. Interestingly, the majority of the participants revealed that they were convinced of the application of corpora and this corpus-based instruction should be taught more frequently in English classes.

Huang (2014) examined the effects of paper-based DDL on the acquisition of lexico-grammatical patterns in L2 writing of Chinese EFL students. The study aimed at giving the comprehensive answers to the following questions:

(i) Can paper-based DDL improve L2 learners' lexical-grammatical use of abstract nouns in their writing?

(ii) Do L2 learners think that paper-based DDL helps their vocabulary use in L2 writing?

To gain the information answering these two questions, the 40 Chinese EFL students majoring in English for Business Purposes at a university in South China served as the participants of the study and, based on their Oxford English Placement Test scores, their English proficiency level was upper-intermediate. These participants were then randomly assigned to a control group or an experimental group. The participants of both groups were provided with a list of five abstract nouns; however, the experimental group was equipped with paper-based concordance lines extracted from the Louvain Corpus of Native English Essays (LOCNESS) for studying the collocations of the words, while the control group had to consult dictionaries (i.e. *Oxford advanced learner's English-Chinese dictionary*) to study the usage of such collocations of the words. To examine the effectiveness of paper-based DDL on the acquisition of lexico-grammatical patterns in L2 writing, the written texts of the pre-test, immediate post-test, and delayed post-test were administered. In the pre-test, the participants were required to write an argumentative essay on *the impact of the tourist industry*, where they had to use the five target words (*controversy*, *criticism*, *objection*, *situation*, and *effect*). As regards the post-test, the participants were asked to write an opinion essay on the *lottery* and required to use the same five target words as those in the pretest for their writing. For the delayed post-test, the participants had to write an opinion essay on *gambling*. After the delayed post-test, the questionnaires were administered to the experimental group to evaluate the DDL

activities. The analysis of participants' essays indicated that the written output of the participants in the experimental group, as compared with the control group, contained a higher variety use of colligational and collocational patterns with fewer linguistic errors in using the target abstract nouns. As regards the participants' perceptions toward the effectiveness of DDL in promoting their effective vocabulary use in L2 writing, the results from the questionnaire showed that concordance lines helped the participants notice both the lexical collocations and the prepositional colligations of the target words. This confirmed that DDL improved the complexity and accuracy of the participants' lexical-grammatical patterns in L2 writing.

Ucar and Yukelir (2015) conducted an experimental study to examine the impacts of corpus-based activities or DDL on verb-noun collocations in EFL classes. The study was conducted with 30 learners of a preparatory class for EFL learners at Osmaiye Korkut Ata University, School of Foreign Language, Turkey. These participants were from different departments such as Turkish language and literature, business administration, electrical and electronical engineering, food engineering, civil engineering, energy systems and chemical engineering. This means the participants of the study were heterogeneous in terms of their majors; however, based on their scores of a proficiency exam, all of them were on the pre-intermediate level. These 30 participants were randomly divided into a control group and an experimental group with 15 participants in each group. After taking a pretest about verb-noun collocations, the participants in the experimental group were taught 15 target verb-noun collocations taken from students' coursebook through corpus-based activities. The control group, on the other hand, went under traditional class activities based on dictionary meanings and activities taken from students' coursebooks. To examine the impacts of such specific treatment, the posttest which was the same as the pretest was administered to both groups of participants. The participants' pre-test scores and post-test scores were analyzed using an Independent t-test to see whether there was a significant difference between the experimental group and control group. The findings of the study demonstrated that the participants undergoing corpus-based activities performed significantly higher than those who studied verb-noun collocations through the traditional approach. This apparently confirms that corpus-based activities or DDL can effectively improve EFL students' knowledge of verb-noun collocations.

2.11.2 Research on using DDL for teaching English collocations in Thai contexts

In the Thai contexts, there have been a few studies related to the application of corpus data to the instruction of English collocations; however, the two most prominent studies were conducted by Sripicharn (2002) and Todd (2001).

Sripicharn (2002) conducted empirical research to investigate the application of DDL approach to language learning by Thai EFL learners. He aimed at examining the three aspects of DDL which were (i) the effects of DDL on language learning, (ii) the learners' views concerning learning language through DDL, and (iii) the learners' performance when using DDL approach. The study of Sripicharn (2002) can be divided into three stages. In the first stage, the participants were divided into two groups including the experimental group working on concordance-based materials and the control group working on non concordance-based materials. The results of the first stage indicated that the scores of the experimental group using DDL were slightly higher than those of the control group. In the second stage, Sripicharn would like to examine the participants' attitudes toward DDL. The questionnaires and in-depth interviews were administered to obtain the data about the participants' attitudes and the results showed that they had positive attitudes towards concordance-based materials. The majority of the participants reported that concordance-based materials could be used as a means of drawing attention to words in context. In the last stage, he conducted one-on-one discussions of concordance-based materials with six participants from the experimental group. The findings revealed that the participants could adapt DDL strategies like generalization in dealing with the concordance lines. Sripicharn (2002) concluded that DDL could be used as an effective approach to teach English for Thai EFL students; however, there should be an adaptation of DDL tasks to meet Thai EFL students' specific needs.

Todd (2001) conducted a study to investigate learners' induction ability arising from concordance-based activities. The 25 students at a Thai university were selected as the participants of the study. These participants had to consult concordance lines in order to complete their self-correction of the errors in their writing after such errors being identified the teacher. The findings of the study indicated that the participants could derive correct patterns from their self-selected concordances and were able to successfully complete their self-correction of their errors.

Apart from the two major studies conducted by Sripicharn (2002) and Todd (2001), the most current study related to the application of DDL to language teaching and learning in the Thai context was conducted by Chatpunnarangsee (2013). Chatpunnarangsee (2013) conducted a mixed-method study to explore ways of incorporating corpus technology to facilitate learning of English collocations in EFL writing course of a Thai university. The four aspects related to the application of web-based concordancers to collocation learning that Chatpunnarangsee (2013) examined were (i) differences in learners' performance in collocation use and recognition, (ii) learners' problem-solving processes during analyzing concordance lines, (iii) learners' perspectives toward the application of corpus data as language reference, and (iv) teachers' views about the application of corpus data as a tool to improve learners' editing abilities. To arrive at the clearer understanding about these four dimensions, 24 university students enrolling a writing course and 2 teachers were purposively selected as the participants of the study. The 24 students' English proficiency levels were classified into an upper-intermediate level, an intermediate level and a lower-intermediate level according to an evaluation of three factors: (i) the students' English Entrance Examination scores, (ii) their grades in a mandatory English course, and (iii) the teachers' evaluation of the students' English competencies.

The data collection procedures were conducted after the implementation of corpus-based lessons where the participants had an opportunity to consult a web-concordancer from Compleat Lexical Tutor website in order to edit their writings focusing on mis-collocated words highlighted by the teachers. In respect of the differences in learners' performance, the pretest and posttest were administered to investigate the development of the participants' collocational performance and the results showed that the majority of participants significantly improved their collocational performance based on the analysis of their pretest scores and post test scores. Interestingly, the scores of the lower-intermediate group improved the most, while the upper-intermediate improved the least. This was because some members of upper-intermediate group had very high pretest scores so there was a little room for them to improve their posttest scores (Chatpunnarangsee, 2013).

As regards the participants' problem-solving processes during analyzing corpus data, the data were collected through a think-aloud task and a focus group interview session. Two participants from each English proficiency level (i.e. the

lower-intermediate level, the intermediate level, and the upper intermediate level) were randomly selected to participate in the 30-minute think-aloud task and the 60-minute focus group interview session. The findings from the interview session and the think-aloud task indicated that the participants' problem-solving processes during analyzing corpus data were influenced by several factors including English proficiency levels, personalities, and emotional conditions; however, the participants' English proficiency level was the most significant factor leading to the success in utilizing corpus data as a linguistic resource to solve collocation problems. Unlike low-proficiency participants, the upper-intermediate group demonstrated several problem-solving techniques including focusing on meaning, comparing contexts between the provided sentences and their specific concordance lines, planning or hypothesizing of the possible answers, and selecting good keywords and staying clam when handling a lot of data. This could be concluded that the participants with a higher English proficiency level could more effectively handle with collocation problems. To arrive at a clearer understanding about the participants' perspectives toward the application of corpus data as language reference, the data were collected through the post-project questionnaire, interview transcriptions, and students' written reflections. The findings demonstrated that the participants had positive opinions concerning the benefits of corpus consultations. All of the participants informed in the post-project questionnaire that the application of corpus was useful for learning collocations. This could be confirmed with the information collected from the written reflections revealing positive comments toward corpus-based learning. The participants also reported positive attitudes toward the use of concordance for learning English collocations in the focus group interviews.

Regarding teachers' opinions about the application of corpus data as a tool to improve learners' editing abilities, the data were collected through the thematic analysis of teacher interviews. Most teachers informed that despite some drawbacks, the use of corpus data could effectively improve students' editing abilities and provide them with several advantages. These advantages included promoting learners' autonomy, providing learners with convenience to learn collocations at their own time, and giving learners an opportunity to learn English in different registers and styles.

CHAPTER 3
METHODOLOGY

This chapter mainly discusses the research methodology applied in the present study. The first part of the chapter concerns the research design, the processes involved in the subject selection, and the data collection procedures. The second section explains the data analysis procedures utilized for both the quantitative and qualitative analysis.

3.1 Research Design

The research design utilized for the present study was a One Group Pre-test Post-test Design, which is a kind of experimental research design or quasi-experimental research design. However, as the present study did not utilize a random sampling technique to select the participants the study is considered a quasi-experimental study rather than a true experimental one. By utilizing a One Group Pre-test Post-test Design, some threats to the validity of the study resulting from the potential influence of external variables, such as intervening variables and extraneous variables, are eliminated to ensure both the validity and reliability of the study (Creswell, 2002). Additionally, the presence of a pre-test and post-test makes the present study more efficient and practical because comparing the pre-test and post-test scores allows the researcher to determine a participant's improvement through the gain or developed scores (Creswell, 2002). In other words, if the post-test scores of the participants are significantly higher than their pre-test scores after they have received a specific treatment or intervention, the researcher could conclude that the participants' collocational knowledge has improved and that the difference in their test scores could possibly be attributed to the effects of the treatment or intervention, which in this case is the application of DDL. In addition to the presence of a pre-test and post-test, the researcher purposively selected the participants according to specific criteria, i.e., participants must: (i) be a first-year Thai student studying in a Thai program, (ii) be studying in the same discipline, which in the present case was the

sciences, (iii) have at least 12 years' experience in learning English as a Foreign Language, (iv) have no background knowledge regarding learning English collocation through DDL or through the use of corpora. These criteria also allowed the researcher to claim that, despite their English language proficiency, the participants in both proficiency groups were almost identical and the internal validity of the study was therefore high. Additionally, the moderator variables, such as sex, age, and culture, which may affect the relationship between the independent and dependent variables but were not the focus of the present study, were held constant, neutralized, and balanced, so that they would not have an effect on the other variables.

3.2 Population and Participants

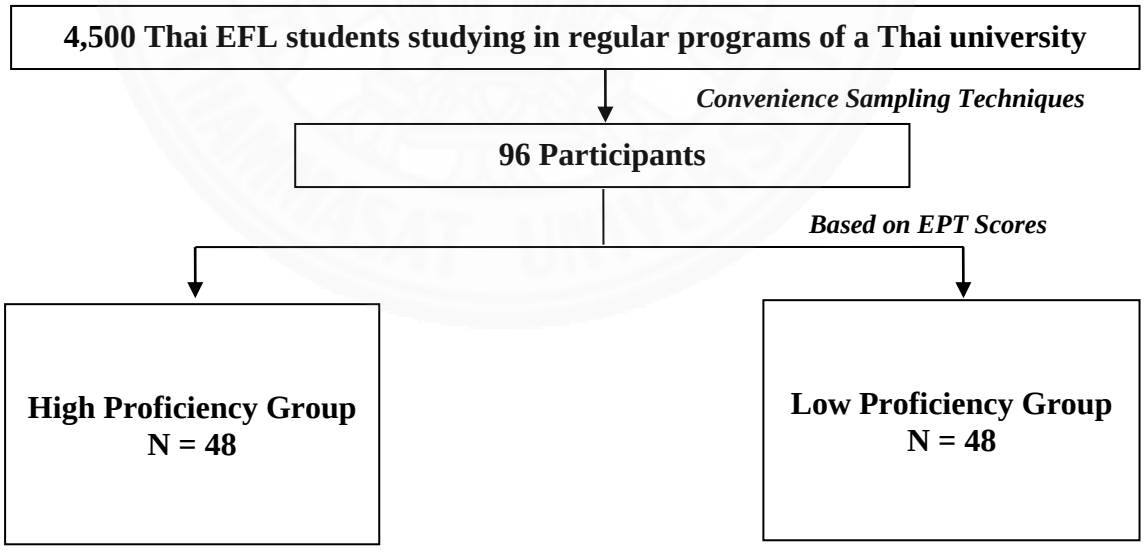
The population of the present study was taken from undergraduate Thai EFL students who were studying English in Thai programs at a single government-sponsored Thai university located in Bangkok, Thailand. In total, 96 undergraduate Thai EFL students were selected from about 4,500 undergraduate Thai EFL students to serve as the study participants. The 96 participants were selected through a convenience sampling technique from the classes that the researcher was assigned to teach during the second semester of academic year 2016, with the researcher thus taking advantage of their convenient accessibility and proximity. Additionally, the major criteria for selecting the participants were that the participants' first language must be Thai and they must have been learning English as a Foreign Language (EFL) for at least 12 years. Based on their English proficiency test (EPT) cut-off scores in accordance with Common European Framework of Reference (CEFR) levels, the participants were divided into two proficiency groups of equal numbers: a high-proficiency group and a low-proficiency group. The participants who had an EPT cut-off score of B1 and above were placed in the high-proficiency group, whereas the participants whose EPT cut-off score was A2 and below were placed in the low-proficiency group. There were thus 48 participants in the high-proficiency group, with all of them majoring in Dentistry at the Faculty of Dentistry in the chosen Thai university. All of the high-proficiency participants reported that they had been studying English as a Foreign Language for more than 12 years. The other 48 study participants who were placed in the low-proficiency group studied at the Faculty of Agricultural Product Innovation and majored in Food Science and Nutrition. Like the

participants in the high-proficiency group, all of the low-proficiency participants informed that they had studied English as a Foreign Language for at least 12 years. In spite of their experience in learning English as a Foreign Language, none of the participants in both groups (i.e., the high-proficiency group and the low-proficiency group) had any experience in learning English through DDL, nor were they familiar with using corpora to facilitate their English language learning, especially learning English collocations, prior to participating in the present study.

Table 3.1 Schematic Representation of the Participants

Group	English Proficiency Level	No	English Proficiency Level	No	Total
Experimental	High Proficiency	48	Low Proficiency	48	96

Figure 3.1 Participant Selection Process



3.3 Materials and Instruments

3.3.1 English Proficiency Test (EPT)

The English Proficiency Test (EPT) was used in the first phase of the study as a research instrument to classify the participants into two different proficiency groups, namely a low-proficiency group and a high-proficiency group. The EPT is a standardized test constructed by an academic services center of the university where the participants are studying. The EPT aims to measure an EFL student's proficiency and ability using English in general and academic contexts. The test consists of 100 items, divided into 5 main sections, which are (i) *Listening*, (ii) *Vocabulary*, (iii) *Usage and Functional Language*, (iv) *Structure*, and (v) *Reading*. The test is paper-and-pencil based and has a multiple-choice format with four options. The students must choose only one correct answer in response to each question, with each item worth one mark. There is no penalty for a wrong answer, and the total score possible is 100. The results are reported in terms of both overall scores and individual scores for each section. Also, the scores are interpreted and reported aligned with the CEFR level.

3.3.2 Pre-test and Post-test

The pre-test on collocations was administered to the participants to determine the participants' English collocational competence before receiving the study treatment (DDL). After the specific treatment (DDL) was given to the participants of each proficiency group, the same test was administered again as a post-test in order to investigate the impact of the specific instruction (DDL) the participants received (See APPENDIX A for the pre-test and APPENDIX B for the post-test). Both tests (i.e., the pre-test and post-test) were almost identical, except that some items in the post-test were recorded. The tests consisted of 50 items, including 35 multiple-choice items and 15 translation items. Consisting of both multiple-choice tasks and translation tasks, the tests aimed to assess the participants' knowledge of grammatical collocations for 22 items and knowledge of lexical collocations for 28 items in terms of both their receptive skills and productive skills.

To ensure the quality of the tests in terms of test validity and test reliability, the tests were validated by three experts to assess the test validity after first determining the reliability of the test using the Kuder–Richardson formula 21 (KR-21). The experts agreed that the tests consisted of high-validity items that were

suitable for accurately measuring the test takers' collocational knowledge. In terms of the reliability, after first being piloted, the tests reliability were estimated using the Kr-21 formula, with the result indicating that the reliability coefficient of the tests was acceptable. Specifically, the reliability of the tests was valued at 0.75, meaning the test scores were 75% consistent or reliable.

3.3.3 Questionnaire

A questionnaire was developed consisting questions in three parts: (i) participants' background information (age, sex, and so on), (ii) attitudes toward learning English collocations through DDL, and (iii) additional suggestions and comments (See APPENDIX C for the questionnaire). The items in the second part of the questionnaire were 15 closed-ended items. Items 1, 2, and 3 were intended to elicit the participants' attitudes toward the importance and perceived goals of learning English collocations. Items 4, 5, 6, 7, and 8 were related to the effectiveness of DDL in learning English collocations. The participants' attitudes toward some of the difficulties they encountered in learning English collocations through DDL were investigated through questions 9, 10, 11, 12, and 13. The overall evaluation of the effectiveness of DDL in learning English collocations was obtained through the responses to items 14 and 15. To answer questions 1–15 in the second part of the questionnaire, the participants or respondents had to select one of 5 responses based on a Likert scale (i.e., 5: Absolutely Agree, 4: Agree, 3: Neither Agree nor Disagree, 2: Disagree, 1: Absolutely Disagree) that most corresponded to their perceived believes and attitudes toward each question. The third part of the questionnaire aimed to encourage the respondents to provide some additional comments about their experiences of learning English collocations through DDL. The question in the third part of the questionnaire was an open-ended question, which allowed the participants to freely describe their attitudes toward this learning method in the form of a comprehensive detailed description.

To ensure the quality of the questionnaire, the questionnaire was validated by three experts to evaluate its content validity and then piloted to find its reliability and practicality before actual use. According to results from the Index of Item-objective Congruence (IOC) from the experts' agreement, the questionnaire was confirmed to consist of high-validity items with comprehensiveness that could accurately measure the participants' attitudes toward learning English collocations through DDL. In terms of the reliability, after being piloted, the questionnaire

reliability was estimated using Cronbach's Alpha and the result indicated that the reliability coefficient of the questionnaire was acceptable. In other words, the reliability of the tests was valued at 0.96, meaning the scores were 96% consistent or reliable.

3.3.4 Students' Reflections

The *Students' Reflection* exercise was utilized as one of the main instruments of the present study to elicit qualitative data regarding the participants' attitudes and perceptions toward learning English collocations through DDL and in order to obtain in-depth information regarding the participants' DDL learning processes and their problem-solving strategies while learning English collocations through DDL. The participants were required to write this reflection after completing the 15-week collocation classes and they were allowed to do this at home. The reflection form consisted of 4 guided questions, which the participants had to answer (See APPENDIX D for the *Students' Reflection*). The first question aimed to elicit information regarding the problems and difficulties they had experienced with DDL. The second question emphasized the DDL learning procedures (i.e., identification, classification, and generalization). The third question focused on how the participants learned lexical collocations and grammatical collocations through DDL. The last question was intended to obtain data about the effectiveness of DDL. All the questions were written in Thai and the participants were allowed to write their reflections in Thai to avoid any language barriers. To ascertain the quality of the guided questions in terms of the content validity, the *Students' Reflection* was validated by some experts.

3.3.5 Can-do Statement Checklist

The *Can-do Statement Checklist* allowed the participants to self-evaluate their own understanding and ability in using DDL to learn English collocations at three periods of time (i.e., the 5th week, 9th week, and 15th week of the collocation classes). The primary focus of the checklist was to provide an opportunity for the participants to reflect on their own ability and performance in the overall DDL learning procedures, including in the identification, classification, and generalization stages. The participants were requested to observe and evaluate their understanding and ability to follow these three steps of DDL and to report their perceived ability in the form of a 5-level rating scale, specifically: 5 meaning 'Completely Understand', 4 meaning 'Understand', 3 meaning 'Moderately

Understand', 2 meaning 'Not Really Understand', and 1 meaning 'Don't Understand.' Further, all the questions were written in Thai (See APPENDIX E for the *Can-do Statement Checklist*). To ensure the quality of the *Can-do Statement Checklist,* the checklist was validated by some experts to confirm the content validity in accordance with DDL learning procedures and was piloted with some respondents to find the practicality and the feasibility of the checklist. The data obtained from the checklist of each round were then computed to find the mean (*M*) and standard deviation (*SD*). The t-test and one-way ANOVA were utilized in order to examine and compare the self-evaluation scores between the high-proficiency participants and low-proficiency participants.

3.3.6 Interview session and think-aloud task

The interview session was employed in the present study for the purpose of eliciting more detailed information and qualitative data regarding the participants' learning processes based on DDL procedures, and their attitudes toward learning English collocations through DDL. The interview session was divided into two main sections: (i) a semi-structured interview to explore the participants' attitudes and perceptions about learning English collocations through DDL and (ii) a think-aloud task to investigate the participants' learning processes based on DDL procedures as well as their problem-solving strategies. The semi-structured interview and the think-aloud task are considered an effective way to elicit in-depth qualitative information because these methods allow the participants to express their attitudes and describe their learning process in a form of a talk. The data from the semi-structured interview and the think-aloud task were triangulate with the data collected from the questionnaires and the Can-do Statement Checklist for an in-depth and comprehensive analysis of the research findings. For the sake of practicality and feasibility, the semi-structured interview and the think-aloud task were conducted in Thai so that the selected participants could express their opinions and attitudes comfortably and fluently without any language barrier. The interview questions were also examined by some experts before their actual use in order to ascertain the content validity of the interview questions (See APPENDIX F for the interview questions). For the think-aloud task, the participants were presented with a collocation exercise consisting of 5 multiple-choice questions and 5 True/False questions (See APPENDIX G for the collocation exercise). While doing the collocation exercise, the participants were asked to articulate their thinking. The think-aloud task was recorded

using a tape-recorder and transcribed by the researcher at a later time. The transcriptions were then sent to the participants to ensure the validity of the content and the authenticity of the work before they were translated into English by the researcher. The overall interview session, which included both the semi-structured interview and the think-aloud task, took about 30 minutes for each participants.

The six participants from the high-proficiency group and another six participants from the low-proficiency group were purposively selected to participate in the semi-structured interviews. The selected participants were purposively chosen from those who got the highest developed scores from the collocation test and those who got the lowest developed scores from the same test. There were 6 participants (3 participants from the high-proficiency group and 3 participants from the low-proficiency group) representing those who got the highest developed score and another 6 participants (3 participants from the high-proficiency group and 3 participants from the low-proficiency group) representing those who got the lowest developed score. Therefore, 12 participants in total participated in the semi-structured interview and in the think-aloud task.

3.3.7 Supplementary material: target collocation worksheets

The target collocations studied in the present study were both lexical collocations and grammatical collocations selected from various corpora, i.e., *Corpus of Contemporary American English* (*COCA*), *Cambridge International Corpus*, and *British National Corpus* (*BNC*) and from collocation dictionaries, e.g., *OXFORD Collocations Dictionary for Students of English* (2009), *The BBI Dictionary of English Word Combinations (1997)*, *The LTP Dictionary of Selected Collocations (1997)*, and *Macmillan Collocations Dictionary (2010)*. However, the primary source of the target collocations utilized in the collocation worksheets in the present study were those selected from *Collocations in Use* (McCarthy & O' Dell, 2005) and *Collocations in Use: Advanced* (McCarthy & O' Dell, 2008). According to these two main books, the collocations were all selected from those identified as significant wordlists by the Cambridge International Corpus of written and spoken English and the CANCODE corpus of spoken English, which was developed by the University of Nottingham in collaboration with Cambridge University Press. The Cambridge International Corpus is considered a huge database and include over 750 million words selected from a variety of sources, such as books, newspapers, advertising, letters, e-mails, websites, conversations and speeches, radio, and television. This

means the collocations in these two books represent real English used in various contexts of daily life. In addition to the target collocations, the collocation exercises and worksheets utilized in this study were also selected and adapted from *Collocations in Use* (McCarthy & O' Dell, 2005) and *Collocations in Use: Advanced* (McCarthy & O' Dell, 2008). The participants were assigned to study the target collocations through these exercises under DDL learning conditions (See APPENDIX I for the collocation worksheets).

3.3.8 Corpus of Contemporary American English (COCA)

The Corpus of Contemporary American English (COCA) was the primary data source of the concordance lines used in the study. The COCA is one of the most efficient corpora of English, with a large database and a balanced corpus of American English created by Mark Davies of Brigham Young University. The COCA is probably the most widely-used corpus of English, and it is related to many other corpora of English and offers unparalleled insight into variations in English. The corpus contains more than 560 million words of text (20 million words are added each year 1990–2017) and it is equally divided among spoken, fiction, popular magazines, newspapers, and academic texts. The URL for this corpus is https://corpus.byu.edu/coca/. The input page of COCA provides users with the capability to retrieve the information through five main options (i.e., 'List,' 'Chart,' Collocates,' 'Compare,' and 'KWIC'). The participants in the present study were allowed to choose the options they believed would most probably facilitate their learning English collocations the most; however, they were advised to utilize the options 'List,' 'Collocates,' and 'KWIC' to obtain the data about English collocations most frequently during the training session because the researcher believed that these three options were the most practical and efficient ways to gather adequate data for learning English collocations through DDL.

The 'List' option provided participants with the opportunity to find words in either a single word or a phrase in a term of words matching certain patterns. The participants could also search by synonyms and customize wordlists to facilitate their enquiries. The participants could also see each individual matching string in the output page as well.

Figure 3.2 Input Page from the 'List' Option of the Corpus of Contemporary American English (COCA)

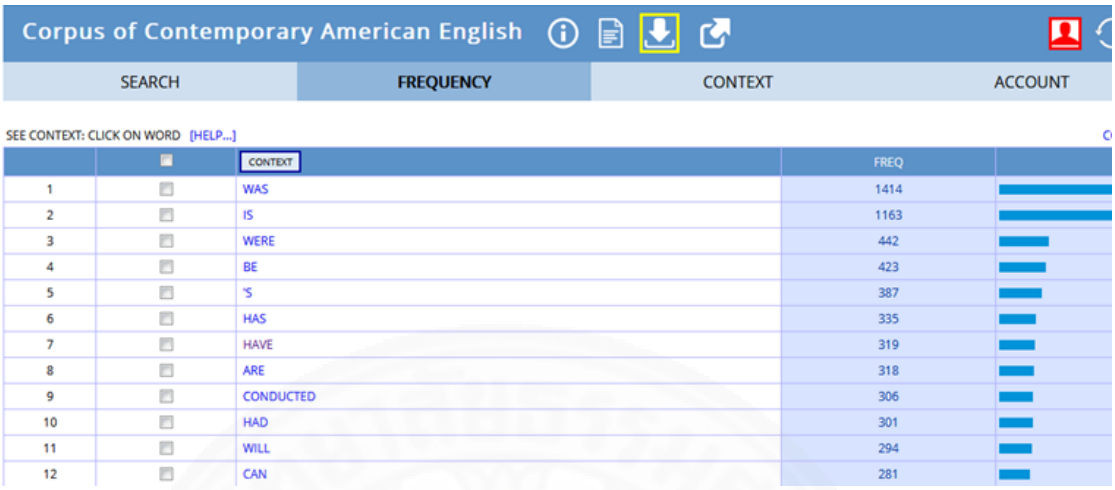
Figure 3.3 Example of an Output Page from the 'List' Option of the Corpus of Contemporary American English (COCA)

1	2017 MAG	(US$14,400) to any human who could beat the **mysterious** player. # Although AlphaGo was rumoured to be behind the bot, many
2	2017 MAG	report. " But the placebo effect isn't some **mysterious** response to a sugar pill. It is the robust and measurable effect of
3	2017 MAG	chaos, with a shot of a hallway from a **mysterious** character's POV.? Ia a first-person video game. A man appears
4	2017 MAG	revealed that it's partially in the shape of the **mysterious** eye logo -- is Monty in league with Olaf? As if on cue
5	2017 MAG	" Lucy will visit a target-rich environment of Jupiter's **mysterious** Trojan asteroids, while Psyche will study a unique metal asteroid that's never
6	2017 MAG	a world without Net Neutrality is scary, or a **mysterious** government organization spying on our phone calls is scary. He's that feeling
7	2017 MAG	, but their isolation can't protect them from a **mysterious** fungus spreading across the eastern... # Researchers have developed a faster and more
8	2017 MAG	vibrant-yet-muted palette to transform the ordinary into something that feels **mysterious**, new, and also familiar, her ability to evoke tension with
9	2017 MAG	story is similar to Angel's. But after a **mysterious** trip to Haiti made by his father, it turned in the other direction
10	2017 MAG	couple on the run from a drug lord. The **mysterious** drama premieres on Netflix on July 21. # Prison Break # Will this
11	2017 MAG	of the film's June 23 opening to discuss its **mysterious** characters and challenging themes and plans for a Bad Batch TV series that will
12	2017 MAG	Exploring fan reaction to a candid pop star with a **mysterious** public persona # " Breaking through the atmosphere/ Things are pretty good from
13	2017 MAG	it pays off as the device needed to defeat the **mysterious** alien race and force them to leave Earth. But the Monks were only
14	2017 MAG	the most weirdly emotional moment of all -- one last **mysterious** encounter between human intelligence and nature's randomness. With doves, d
16	2017 MAG	he invites his son to visit him at a **mysterious** cryogenics facility, where pseudo-science meets spiritual practice. 15. Black Wave
17	2017 MAG	more secure and has better battery life due to some **mysterious** optimizations, but based on my experience using it with Windows 10 Pro,
18	2017 MAG	diplomatic personnel to leave the United States after months of **mysterious** " attacks " that have damaged the health of U.S. embassy staff in Hav
19	2017 MAG	for one of the new Star Wars saga's most **mysterious** characters. # While Phasma fills out its title character's background a great
20	2017 MAG	NASA-led and NASA-sponsored study of potential future missions to the **mysterious** " ice giant " planets Uranus and Neptune has been released
21	2017 MAG	Aidan Gillen partially pulled back the curtain on this ever **mysterious** character to let fans in on what makes Littlefinger so damn villainous. Accor

The ‘Collocates’ option provided the participants with the information about what words typically occur near other words as well as a great insight into the meaning and usage of each searched keyword. This option is probably more useful and practical to find information about English collocation usage. It was very convenient because the participants could navigate and arrange the output page to show only collocates that they were looking for by selecting certain types of words (e.g., adjectives, nouns, verbs) from the dropdown list. After the output page provided a list of the words that could be collocates with a keyword, the participants were able to see some examples of the concordance lines or its context by clicking on a particular word.

Figure 3.4 Input Page from the ‘Collocates’ Option of the Corpus of Contemporary American English (COCA)

Figure 3.5 Example of the Output Page from the 'Collocates' Option of the Corpus of Contemporary American English (COCA)



The 'KWIC' option is another useful function of COCA as it provided the participants with useful examples of concordance lines with the keyword and highlighted its collocates and put them in the middle of the concordance lines. Like the 'Collocates' option, the participants could navigate the output page to show only the collocates that they were looking for by selecting the type of words to display from the dropdown list. They could also navigate the output page to sort the collocates either to the left or right of the keyword within a preferred range. For example, the users could navigate and arrange the output page to show the collocates to the right of the keyword within the range of 3 words after the keyword.

Figure 3.6 Input Page from the 'KWIC' Option of the Corpus of Contemporary American English (COCA)

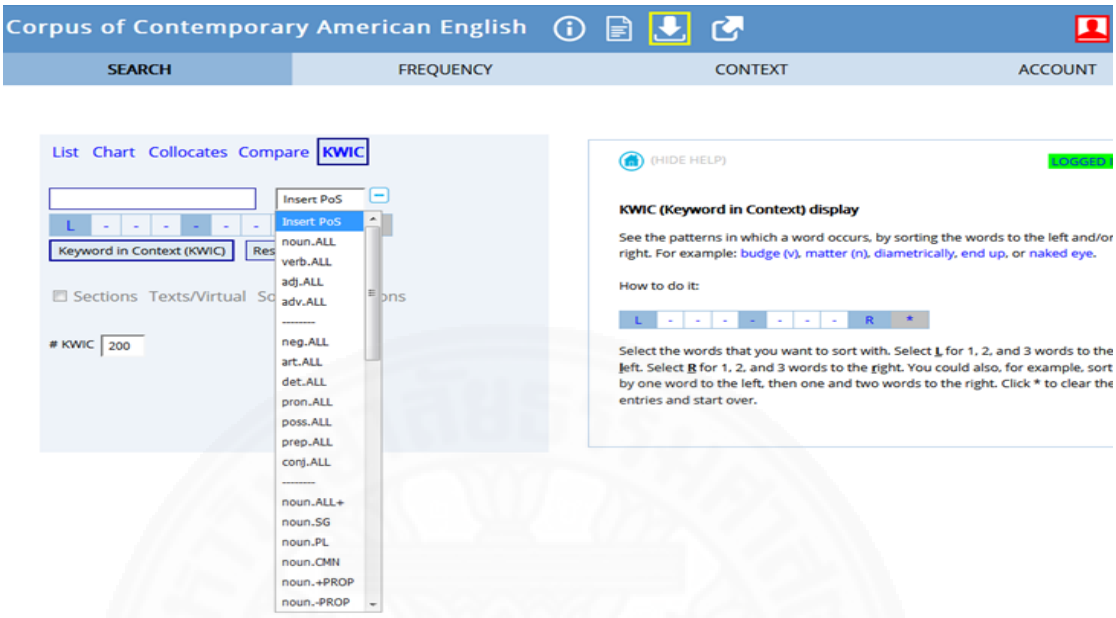


Figure 3.7 Example of the Output Page from the 'KWIC' Option of the Corpus of Contemporary American English (COCA)

3.4 Data Collection Procedures

The data were collected in four consecutive sessions as follows:

1) The permission for conducting the study with Thai EFL students at a Thai university was asked from the head of the institution before collecting any data.

2) The 96 participants were conveniently sampled from about 4,500 Thai EFL first-year students studying in Thai programs. In other words, the researcher selected the participants who had been assigned to study those courses with the researcher because the sample was easier to manage and the participants were more accessible. The participants of the present study were conveniently selected from the classes where the researcher was assigned to teach during the 2nd semester of 2016 (one section of English Foundation I classes and another section from English Foundation II classes). Although the first-year students were requested to submit their English scores (i.e., O-NET and GAT) to the university in order to be assigned to appropriate English courses, the students whose English scores were higher than 60% were assigned to English Foundation II classes, while those who got less than 60% were assigned to English Foundation I classes, so the researcher decided they would to ascertain their English language proficiency by using a more accurate test, which was the English Proficiency Test (EPT). In order to accurately and precisely assign participants to the appropriate English-proficiency groups (i.e., the high-proficiency group and the low-proficiency group), the selected participants were asked to take an EPT test. Those participants whose EPT cutting scores were A2 and below were placed into the low-proficiency group, while the participants with EPT cutting scores at B1 and above were placed in the high-proficiency group. There were 48 participants in the high-proficiency group and another 48 participants in the low-proficiency group.

3) The participants were asked to complete the pre-test to measure their collocational competence before receiving the study treatment, i.e., DDL.

4) After completing the pre-test, the participants were required to attend the 15-week classes where the target collocations were taught through the application of DDL. These collocation classes took an hour each week so the total class time was 15 hours. The 15-week classes were conducted after the English Foundation I and II regular classes, meaning the 15-week collocation classes were

extra classes. The detailed information of each class is as follows (See APPENDIX H for the collocation lesson plans of the 15-week collocation classes):

i) The first week of the 15-week collocation classes involved a tutorial, where the participants were taught the general knowledge about English collocations, i.e., the definition of collocations, properties of collocations, and classifications of collocations.

ii) The second week involved a training session where the participants were trained how to use the corpus.

iii) From the third week to the fifteenth week, the participants were required to learn the target collocations. They were assigned to do collocation exercises, including multiple-choice tasks, matching tasks, and gap-filling tasks. These exercises were selected and adapted from *Collocations in Use* (McCarthy & O' Dell, 2005). The participants were asked to follow DDL procedures and to consult the *Corpus of Contemporary American English* (*COCA*) in order to complete the tasks. In this way, the application of DDL in learning English collocations served as the specific treatment of the present study.

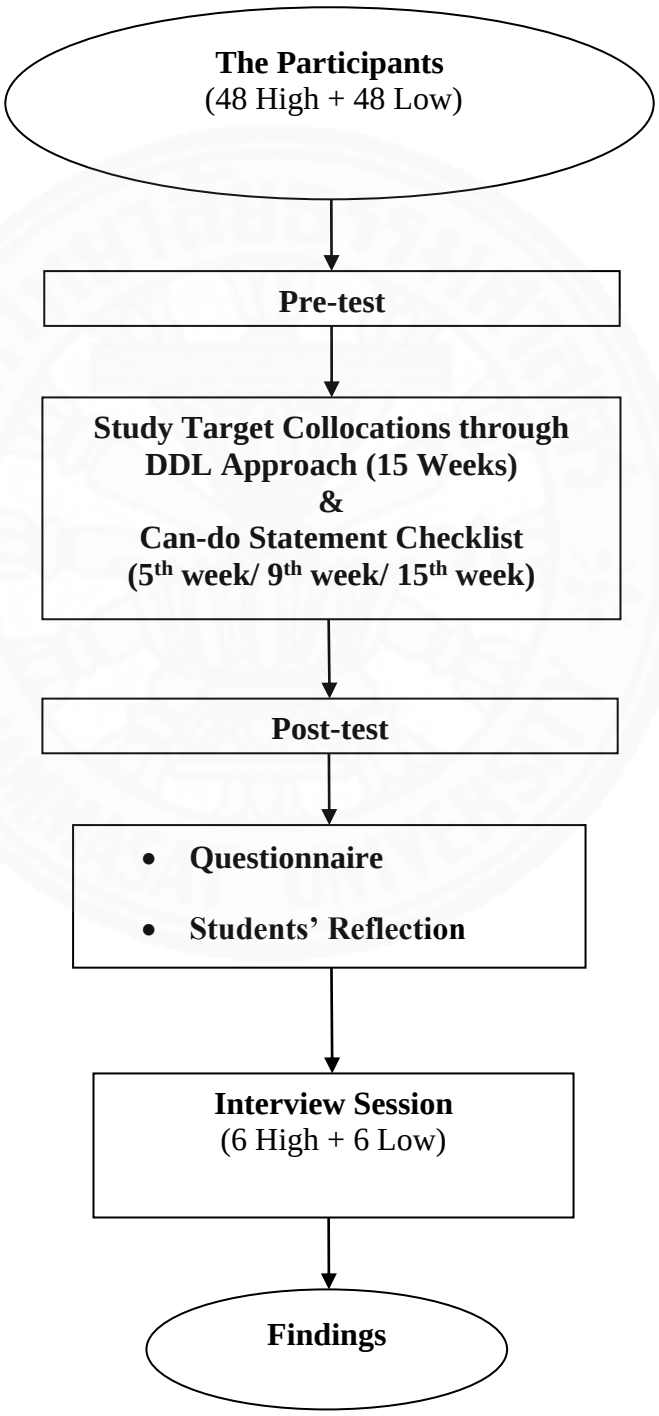
5) The 'Can-do Statement Checklist' was distributed during the 5th, 9th, and 15th weeks in order to provide the opportunity for the participants to evaluate their understanding of DDL and their ability to follow the DDL learning processes.

6) After learning collocations for 15 weeks, the participants were required to take the post-test. The participants' post-test scores were compared with their pre-test scores to determine the improvement of their collocational competence.

7) The data about participants' attitudes toward the application of DDL in teaching English collocations was collected thorough a questionnaire and semi-structured interview. After the end of the 15-week collocation classes, the questionnaire was distributed to the participants in order to investigate their attitudes toward DDL. Additionally, the participants had to provide more qualitative data regarding their attitudes toward DDL as well as their learning processes according DDL and the problem-solving strategies they had adopted by writing such information in the 'Students' Reflection.' The reflection was assigned as the participants' home assignment and they were allowed to submit the reflection form a week later. For the interview session, only the selected participants were asked to provide in-depth information regarding their attitudes toward DDL and their learning processes with DDL and the problem-solving strategies they utilized while learning

English collocations through DDL. The interview session took place at the researcher's office and it took about 6 hours to interview all of the 12 selected participants. The interview session was done a week later after the end of the 15-week collocation classes.

Figure 3.8 Data Collection Procedure



3.5 Data Analysis

The present study employed both quantitative and qualitative analyses in order to investigate the effects of DDL on the English collocation learning of Thai EFL students and to explore their attitudes toward the application of DDL in learning English collocations.

3.5.1 Quantitative data analysis

Quantitative data analysis was conducted to obtain comprehensive answers to research questions 1–3. Table 3.1 summarizes the research questions and the analytical methods utilized.

Table 3.2 Summary of the Quantitative Data Analysis

Research Questions	Data Sources	Data Analysis
Research Question 1: To what extent does DDL contribute to the development of English collocational knowledge of high-proficiency and low-proficiency Thai EFL students?	Pretest scores and Posttest scores	t-test
Research Question 2: Is there any significant correlation between learners' English proficiency and their collocational competence development?	SWU-SET scores and Developed scores	Pearson's correlation coefficient (*r*)
Research Question 3: How do Thai EFL students with different proficiency levels follow DDL learning processes during learning English collocations through DDL?	Can-do Statement Checklist	t-test and one-way ANOVA
Research Question 4: What are Thai EFL students' attitudes toward teaching and learning collocations through DDL?	Questionnaire	• $\overline{X}$ / *SD* • t-test

3.5.2 Qualitative data analysis

The data collected from the semi-structured interview, Students' Reflection, and think-aloud data were qualitatively analyzed to obtain comprehensive findings about the participants' attitudes toward DDL and to triangulate with the results from the questionnaire.

Table 3.3 Summary of Qualitative Data Analysis

Research Questions	Data Sources	Data Analysis
Research Question 3: How do Thai EFL students with different proficiency levels follow DDL learning processes during learning English collocations through DDL?	• Students' Reflection • Think-aloud transcription	• Emerging themes from the reflections • Narrative description of the think-aloud tasks
Research Question 4: What are Thai EFL students' attitudes toward teaching and learning collocations through DDL?	• Semi-structured interview • Students' Reflection	• Emerging themes from the interview • Emerging themes from the reflections

CHAPTER 4
RESULTS

This chapter presents the findings to provide significant data and information for answering the research questions of the current study (i.e. "To what extent does DDL contribute to the development of English collocational knowledge of high-proficiency and low-proficiency Thai EFL students?", "Is there any significant correlation between Thai EFL students' English proficiency and their collocational knowledge development?", "How do Thai EFL students with different proficiency levels follow DDL learning processes during learning English collocations through DDL?", and "What are high-proficiency and low-proficiency Thai EFL students' attitudes towards learning English collocations through DDL?". The data sources and results of each research question will be discussed in detail in the following sections.

4.1 The Contribution of DDL on the English Collocational Knowledge Development of High-proficiency and Low-proficiency Thai EFL Students

This part of the findings aims at investigating the effects of DDL on the collocational knowledge development of high-proficiency and low-proficiency Thai EFL students. Therefore, the results from the pre-test and post-test scores will be systematically presented and statistically compared in order to evaluate the changes in the test scores or gain scores (G Score) after the participants receiving the treatment which is the DDL method. The participants' collocation test results collected from 96 students are classified into two different proficiency groups (i.e. 48 in the low-proficiency group and 48 in the high-proficiency group). The pre-test and post-test scores are presented as the total score of 50 points and divided into two main tasks which are multiple-choice scores aiming at measuring the participants' receptive skill (35 points) and translation scores intending to evaluate the participants' productive skill (15 points). The scores are also reported and categorized according to types of collocations which are lexical collocations for 28 items (i.e.20 items in multiple-choice task and 8 items in translation task) and grammatical collocations for 22 items (i.e. 15 items in multiple-choice task and 7 items in translation task).

The descriptive statistics including minimum scores, maximum scores, mean ($\overline{X}$) and standard deviation (SD) of the scores in each section are presented as well. In order to determine and evaluate the development of English collocational knowledge of high-proficiency and low-proficiency participants the t- test is utilized and the results are presented in Table 4.1 to Table 4.28.

Table 4.1: The Overall Pre-test Scores and Post-test Score of the High-proficiency Participants and the Low-proficiency Participants

(N=96)

Score Section		Participant English Proficiency	Minimum Score		Maximum Score		Mean ($\overline{X}$)		SD.	
			Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Multiple-choice Task	Lexical (20 Points)	High Proficiency	5.00	10.00	16.00	19.00	10.94	13.75	2.88	2.39
		Low Proficiency	3.00	0.00	12.00	14.00	6.67	7.21	2.50	2.63
	Grammatical (15 Points)	High Proficiency	2.00	4.00	12.00	16.00	8.23	9.54	2.15	2.25
		Low Proficiency	0.00	0.00	9.00	10.00	4.94	5.22	1.98	2.14
Total Score Multiple-choice (35 Points)		High Proficiency	7.00	16.00	28.00	33.00	19.17	23.29	4.44	4.20
		Low Proficiency	3.00	3.00	20.00	20.00	11.60	12.40	3.45	3.89
Translation Task	Lexical (8 Points)	High Proficiency	0.00	1.00	5.00	8.00	2.54	4.04	1.40	1.58
		Low Proficiency	0.00	0.00	1.00	4.00	0.25	1.81	0.44	0.89
	Grammatical (7 Points)	High Proficiency	0.00	1.00	6.00	7.00	3.46	4.48	1.52	1.60
		Low Proficiency	0.00	0.00	3.00	5.00	0.75	2.48	1.04	1.62
Total Score Translation Task (15 Points)		High Proficiency	0.00	2.00	11.00	15.00	6.00	8.25	2.37	2.80
		Low Proficiency	0.00	0.00	4.00	8.00	1.00	4.29	1.25	2.08
Overall Score (50 Points)		High Proficiency	8.00	20.00	38.00	50.00	25.17	32.00	6.10	6.30
		Low Proficiency	3.00	8.00	22.00	24.00	12.60	16.69	4.03	4.33

Table 4.2: The Comparison between the Overall Pre-test Score and the Overall Post-test Score of High-proficiency Participants

N= 48

Overall Score of the High-proficiency Participants	***Total***	$\overline{X}$	***SD***	***t***	ρ
Pre-test	50	25.17	6.10	6.36*	.000
Post-test	50	32.00	6.30		

Table 4.2 shows the comparison between the overall pre-test and the overall post-test score of the high-proficiency participants. The result of *t*-test run on the overall pre-test score of the high-proficiency participants ($\overline{X}$ = 25.17 and *SD* = 6.10) and that score in the post-test ($\overline{X}$ = 32.00 and *SD* = 6.30) with *t* (6.36) shows the p-value of 0.000 which is lower than the 0.05 level of significance. This indicates that for the high-proficiency participants, the overall post-test score is significantly higher than the overall pre-test score (the average scores 32.00 and 25.17 respectively).

Table 4.3: The Comparison between the Overall Pre-test Score and the Overall Post-test Score of the Low-proficiency Participants

N= 48

Overall Score of the Low-proficiency Participants	***Total***	$\overline{X}$	***SD***	***t***	ρ
Pre-test	50	12.60	4.03	5.32*	.000
Post-test	50	16.69	4.33		

Table 4.3 shows the comparison between the overall the pre-test score and the overall post-test score of the low-proficiency participants. The result of *t*-test computed on the overall pre-test score of the low-proficiency participants ($\overline{X}$ = 12.60 and *SD* = 4.03) and that score in the post-test ($\overline{X}$ = 16.69 and *SD* = 4.33) with *t* (5.32) shows the p-value of 0.000 which is lower than the 0.05 level of significance. This indicates that for the low-proficiency participants, the overall post-test score is significantly higher than the overall pre-test score (the average score is 16.69 and 12.60 respectively).

Table 4.4: The Comparison between Overall Gain Score of the High-proficiency Participants and the Low-proficiency Participants

N=96

Overall Gain Score of the Participants	*Total*	$\overline{X}$	*SD*	*t*	ρ
High-proficiency Participants	50	6.65	4.88	2.51*	.016
Low-proficiency Participants	50	4.08	5.12		

Table 4.4 shows the comparison between the overall gain score of the high-proficiency participants and the overall gain score of the low-proficiency participants. The result of *t*-test run on the overall gain score of the high-proficiency participants ($\overline{X}$ = 6.65 and *SD* = 4.88) and that score of the low-proficiency participants ($\overline{X}$ = 4.08 and *SD* = 5.12) with *t* (2.51) shows the p-value of 0.016 which is lower than the 0.05 level of significance. This indicates that the overall gain score of the high-proficiency participants is significantly higher than the overall gain score of the low-proficiency participants (the average score is 6.65 and 4.08 respectively).

4.1.1 The summary of the findings regarding the contribution of DDL on the overall English collocational knowledge development of high-proficiency and low-proficiency Thai EFL students

The findings of the present study regarding the effectiveness of DDL on Thai EFL students' overall collocational knowledge development reveal that both high-proficiency and low-proficiency Thai EFL students demonstrate an improvement in their test scores after learning English collocation through the application of DDL. In other words, the overall post-test scores of both high-proficiency participants ($\overline{X}$ = 25.17) and low-proficiency participants ($\overline{X}$ = 16.69) are significantly higher than their overall pre-test scores ($\overline{X}$ = 25.17 and $\overline{X}$ = 12.60 respectively). When comparing the gain scores (G Scores) between the high-proficiency participants and the low-proficiency participants, however, a significant difference between these two sets of the gain scores is also exhibited. According to comparison data between the overall G Scores of the high-proficiency participants and the overall G Scores of the low-proficiency participants, the overall G Scores of the high-proficiency participants ($\overline{X}$ = 6.65) is significantly higher than the overall G Scores of the low-proficiency participants ($\overline{X}$ = 4.08).

Table 4.5: The Comparison between Pre-test Score and Post-test Score in the Grammatical Section of the High-proficiency Participants

N=48

The High-proficiency Participants' Scores in the Grammatical Section	***Total***	$\overline{X}$	***SD***	***t***	ρ
Pre-test	22	11.69	3.11	5.24*	.000
Post-test	22	14.02	2.99		

Table 4.5 shows the comparison between the pre-test score in grammatical section and the post-test score in the same section of high-proficiency participants. The result of *t*-test computed on the pre-test score ($\overline{X}$ = 11.69 and *SD* = 3.11) and the post-test score ($\overline{X}$ = 14.02 and *SD* = 2.99) in this section of high-proficiency participants with *t* (5.24) shows the p-value of 0.000 which is lower than the 0.05 level of significance. This indicates that the post-test score in grammatical section of the high-proficiency participants is significantly higher than their pre-test score in this section (the average score is 14.02 and 11.69 respectively).

Table 4.6: The Comparison between Pre-test Score and Post-test Score in the Grammatical Section of the Low-proficiency Participants

N=48

The Low-proficiency Participants' Scores in the Grammatical Section	***Total***	$\overline{X}$	***SD***	***t***	ρ
Pre-test	22	5.69	2.47	4.31*	.000
Post-test	22	7.71	2.71		

Table 4.6 shows the comparison between the pre-test score in grammatical section and the post-test score in the same section of low-proficiency participants. The result of *t*-test run on the pre-test score ($\overline{X}$ = 5.69 and *SD* = 2.47) and the post-test score ($\overline{X}$ = 7.71 and *SD* = 2.71) in the grammatical section of the low-proficiency participants with *t* (4.31) shows the p-value of 0.000 which is lower than the 0.05 level of significance. This indicates that for the low-proficiency participants, the post-test score in grammatical section is significantly higher than the pre-test score in the grammatical section (the average score is 7.71 and 5.69 respectively).

Table 4.7: The Comparison between Gain Score in the Grammatical Section of High-proficiency Participants and Low-proficiency Participants

N=96

The Participants' Gain Scores in the Grammatical Section	*Total*	$\overline{X}$	*SD*	*t*	ρ
High-proficiency Participants	22	2.33	3.08	0.46	.645
Low-proficiency Participants	22	2.02	3.25		

Table 4.7 shows the comparison between the gain score in grammatical section of the high-proficiency participants and the gain score in the same section of the low-proficiency participants. The result of *t*-test run on the developed score in grammatical section of the high-proficiency participants ($\overline{X}$ = 2.23 and *SD* = 3.08) and that score of the low-proficiency participants ($\overline{X}$ = 2.02 and *SD* = 3.25) with *t* (0.46) shows the p-value of 0.645 which is higher than the 0.05 level of significance. This indicates that the developed score in grammatical section of the high-proficiency participants is not significantly different from the developed score in the grammatical section of the low-proficiency participants (the average score is 2.23 and 2.02 respectively).

4.1.2 The summary of the findings regarding the contribution of DDL on the overall English collocational knowledge development in grammatical section of high-proficiency and low-proficiency Thai EFL students

The findings of the current study about the contribution of DDL on the overall development in English grammatical collocational knowledge of Thai EFL students reveal that both high-proficiency and low-proficiency Thai EFL students demonstrate an improvement in their test scores in the grammatical section after learning English collocation through the application of DDL. This means the post-test scores in the grammatical section of both high-proficiency participants ($\overline{X}$ = 14.02) and low-proficiency participants ($\overline{X}$ = 7.71) are significantly higher than their pre-test scores in the same section ($\overline{X}$ = 11.69 and $\overline{X}$ = 5.69 respectively). Additionally, when comparing the gain scores (G Scores) in the grammatical section, a significant difference between the gain scores in the grammatical section of the high-proficiency

participants ($\overline{X}$ = 2.23) and the gain scores in the same section of the low-proficiency participants ($\overline{X}$ = 2.02) is not exhibited.

Table 4.8: The Comparison between Pre-test Score and Post-test Score in the Lexical Section of the High-proficiency Participants

N=48

The High-proficiency Participants' Scores in the Lexical Section	***Total***	$\overline{X}$	***SD***	***t***	ρ
Pre-test	28	13.48	3.63	9.57*	.000
Post-test	28	17.79	3.38		

Table 4.8 shows the comparison between the pre-test score in lexical section and the post-test score in the same section of high-proficiency participants. The result of *t*-test computed on the pre-test score ($\overline{X}$ = 13.48 and *SD* = 3.63) and the post-test score ($\overline{X}$ = 17.79 and *SD* = 3.38) in the lexical section of high-proficiency participants with *t* (9.57) yields the p-value of 0.000 which is lower than the 0.05 level of significance. This indicates that the post-test score in the lexical section of the high-proficiency participants is significantly higher than the pre-test score in this section (the average score is 17.79 and 13.48 respectively).

Table 4.9: The Comparison between Pre-test Score and Post-test Score in the Lexical Section of the Low-proficiency Participants

N=48

The Low-proficiency Participants' Scores in the Lexical Section	***Total***	$\overline{X}$	***SD***	***t***	ρ
Pre-test	28	6.92	2.54	4.24*	.000
Post-test	28	9.02	2.79		

Table 4.9 shows the comparison between the pre-test score in the lexical section and post-test score in the same section of the low-proficiency participants. The result of *t*-test run on the pre-test score ($\overline{X}$ = 6.92 and *SD* = 2.54) and the post-test score ($\overline{X}$ = 9.02 and *SD* = 2.79) in the lexical section of low-proficiency participants with *t* (4.24) shows the p-value of 0.000 which is lower than the 0.05 level of significance. This

indicates that for the low-proficiency participants, the post-test score in the lexical section is significantly higher than the pre-test score in the same section (the average score is 6.92 and 9.02 respectively).

Table 4.10: The Comparison between Gain Score in the Lexical Section of the High-proficiency Participants and the Low-proficiency Participants

N=96

The Participants' Gain Scores in the Lexical Section	*Total*	$\overline{X}$	*SD*	*t*	ρ
High-proficiency Participants	28	4.31	3.12	3.40*	.001
Low-proficiency Participants	28	2.02	3.25		

Table 4.10 shows the comparison between the gain score in the lexical section of the high-proficiency participants and the gain score in the lexical section of the low-proficiency participants. The result of *t*-test computed on the gain score in lexical section of the high-proficiency participants ($\overline{X}$ = 4.31 and *SD* = 3.12) and that score of the low-proficiency participants ($\overline{X}$ = 2.02 and *SD* = 3.44) with *t* (3.40) shows the p-value of 0.001 which is lower than the 0.05 level of significance. This indicates that the gain score in the lexical section of the high-proficiency participants is significantly higher than the gain score in the lexical section of the low-proficiency participants (the average score is 4.31 and 2.02 respectively).

4.1.3 The summary of the findings regarding the contribution of DDL on the overall English collocational knowledge development in lexical section of high-proficiency and low-proficiency Thai EFL students

The findings of the present study concerning the effectiveness of DDL on the overall development in English lexical collocational knowledge of Thai EFL students demonstrate that both high-proficiency and low-proficiency Thai EFL students show an improvement in their test scores in the lexical section after learning English collocation through the application of DDL. In other words, the post-test scores in the lexical section of both high-proficiency participants ($\overline{X}$ = 17.79) and low-proficiency participants ($\overline{X}$ = 9.02) are significantly higher than their pre-test scores in the same section ($\overline{X}$ = 13.48 and $\overline{X}$ = 6.92 respectively). Apart from the

significant difference between the pretest scores and the posttest scores in the lexical section, when comparing between the gain scores (G Scores) in the lexical section of the high-proficiency participants and that score of the low-proficiency participants, a significant difference between these two sets of the gain scores is also demonstrated. With reference to the comparison data between the G Scores in the lexical section of the high-proficiency participants and the G Scores in the same section of the low-proficiency participants, the G Scores of the high-proficiency participants ($\overline{X}$ = 4.31) is significantly higher than the overall G Scores of the low-proficiency participants ($\overline{X}$ = 2.02).

Table 4.11: The Comparison between the Overall Pre-test Score in the Translation Task and the Overall Post-test Score in the Translation Task of the High-proficiency Participants

N=48

The Overall Score of Translation Task of High-proficiency Participants	***Total***	$\overline{X}$	***SD***	***t***	ρ
Pre-test	15	6.00	2.37	7.06*	.000
Post-test	15	8.52	2.80		

Table 4.11 shows the comparison between the overall pre-test score and the overall post-test score in translation task of the high-proficiency participants. The result of *t*-test run on the overall pre-test score in translation task of high-proficiency participants ($\overline{X}$ = 6.00 and *SD* = 2.37) and that score of the post-test ($\overline{X}$ = 8.52 and *SD* = 2.80) with *t* (7.06) shows the p-value of 0.000 which is lower than the 0.05 level of significance. This indicates that the overall post-test score in the translation task of the high-proficiency participants is significantly higher than their overall pre-test score in the same task (the average score is 8.52 and 6.00 respectively).

Table 4.12: The Comparison between the Overall Pre-test Score in the Translation Task and the Overall Post-test Score in the Translation Task of the Low-proficiency Participants

N=48

The Overall Score of Translation Task of Low-proficiency Participants	***Total***	$\overline{X}$	***SD***	***t***	ρ
Pre-test	15	1.00	1.25	10.05*	.000
Post-test	15	4.29	2.08		

Table 4.12 shows the comparison between the overall pre-test score and the overall post-test score in the translation task of the low-proficiency participants. The result of *t*-test computed on the overall pre-test score in the translation task of the low-proficiency participants ($\overline{X}$ = 1.00 and *SD* = 1.25) and that score of the post-test ($\overline{X}$ = 4.29 and *SD* = 2.08) with *t* (10.05) yields the p-value of 0.000 which is lower than the 0.05 level of significance. This indicates that for the low-proficiency participants, the overall post-test in the translation task is significantly higher than the overall pre-test score in the same task (the average score is 4.29 and 1.00 respectively).

Table 4.13: The Comparison between the Overall Gain Score in the Translation Task of the High-proficiency Participants and the Low-proficiency Participants

N=96

The Participants' Overall Gain Score in the Translation Task	***Total***	$\overline{X}$	***SD***	***t***	ρ
High-proficiency Participants	15	3.29	2.27	1.75	.086
Low-proficiency Participants	15	2.52	2.48		

Table 4.13 shows the comparison between the overall gain score in the translation task of the high-proficiency participants and the overall gain score in the translation task of the low-proficiency participants. The result of *t*-test run on the overall gain score in the translation task of the high-proficiency participants ($\overline{X}$ = 3.29 and *SD* = 2.27) and that score of the low-proficiency participants ($\overline{X}$ = 2.52 and *SD* = 2.48) with *t* (1.75) shows the p-value of 0.086 which is higher than the 0.05 level of significance. This indicates that the overall gain score in the translation task of the high-proficiency

participants is not significantly different from the overall gain score in the translation task of the low-proficiency participants (the average score is 3.29 and 2.52 respectively).

4.1.4 The summary of the findings regarding the contribution of DDL on the overall English collocational knowledge development in the translation task of high-proficiency and low-proficiency Thai EFL students

The results of the present study about the effectiveness of DDL on the overall English collocational knowledge development in the translation task of Thai EFL students reveal that both high-proficiency and low-proficiency Thai EFL students demonstrate an improvement in their test scores in the translation task after learning English collocation through the application of DDL. This means the post-test scores in the translation task of both high-proficiency participants ($\overline{X}$ = 8.52) and low-proficiency participants ($\overline{X}$ = 4.29) are significantly higher than their pre-test scores in the same section ($\overline{X}$ = 6.00 and $\overline{X}$ = 1.00 respectively). In addition to the difference between the pretest scores and the posttest scores in the translation task, a significant difference between the gain scores in the translation task of the high-proficiency participants ($\overline{X}$ = 3.29) and the gain scores in the same task of the low-proficiency participants ($\overline{X}$ = 2.52) is not exhibited.

Table 4.14: The Comparison between the Pre-test Score and the Post-test Score of the Translation Task in the Grammatical Section of the High-proficiency Participants

N=48

The Score of Translation Task in Grammatical Section of the High-proficiency Participants	***Total***	$\overline{X}$	***SD***	***t***	ρ
Pre-test	7	3.46	1.16	4.65*	.000
Post-test	7	4.48	1.60		

Table 4.14 shows the comparison between the pre-test score and the post-test score of the translation task in the grammatical section of the high-proficiency participants. The result of *t*-test run on the pre-test score of the translation task in the grammatical

section of the high-proficiency participants ($\overline{X}$ = 3.46 and *SD* = 1.16) and that score of the post-test in the same section ($\overline{X}$ = 4.48 and *SD* = 1.60) with *t* (4.65) shows the p-value of 0.000 which is lower than the 0.05 level of significance. This indicates that for the high-proficiency participants, the post-test score of the translation task in the grammatical section is significantly higher than the pre-test score of the translation task in the same section (the average score is 4.48 and 3.46 respectively).

Table 4.15: The Comparison between the Pre-test Score and the Post-test Score of the Translation Task in the Grammatical Section of the Low-proficiency Participants

N=48

The Score of Translation Task in Grammatical Section of the Low-proficiency Participants	***Total***	$\overline{X}$	***SD***	***t***	ρ
Pre-test	7	0.75	1.04	6.81*	.000
Post-test	7	2.48	1.62		

Table 4.15 shows the comparison between the pre-test score and the post-test score of the translation task in the translation task of the low-proficiency participants. The result of *t*-test computed on the pre-test score of the translation task in the grammatical section of the low-proficiency participants ($\overline{X}$ = 0.75 and *SD* = 1.04) and that score of the post-test in the same section ($\overline{X}$ = 2.48 and *SD* = 1.62) with *t* (6.81) yields the p-value of 0.000 which is lower than the 0.05 level of significance. This indicates that for the low-proficiency participants the post-test score of the translation task in the grammatical section is significantly higher than the pre-test score of the translation task in the grammatical section (the average score is 2.48 and 0.75 respectively).

Table 4.16: The Comparison between the Gain Score of the Translation Task in the Grammatical Section of the High-proficiency Participants and the Low-proficiency Participants

N=96

The Gain Score of the Translation Task in the Grammatical Section	*Total*	$\overline{X}$	*SD*	*t*	ρ
High-proficiency Participants	7	1.02	1.76	2.19*	.033
Low-proficiency Participants	7	1.72	1.52		

Table 4.16 shows the comparison between the gain score of translation task in grammatical section of the high-proficiency participants and the gain score of translation task in grammatical section of the low-proficiency participants. The result of *t*-test run on the gain score of the translation task in the grammatical section of the high-proficiency participants ($\overline{X}$ = 1.02 and *SD* = 1.76) and that score of the low-proficiency participants ($\overline{X}$ = 1.72 and *SD* = 1.52) with *t* (2.19) shows the p-value of 0.033 which is lower than the 0.05 level of significance. This indicates that the gain score of the translation task in the grammatical section of the low-proficiency participants is significantly higher than the gain score of the translation task in the grammatical section of the high-proficiency participants (the average score is 1.72 and 1.02 respectively).

4.1.5 The summary of the findings regarding the contribution of DDL on the English collocational knowledge development in the grammatical section of the translation task of high-proficiency and low-proficiency Thai EFL students

The findings of the current study regarding the effectiveness of DDL on the English collocational knowledge development in the grammatical section of the translation task of Thai EFL students show that both high-proficiency and low-proficiency Thai EFL students demonstrate an improvement in their test scores in the grammatical section of the translation task after learning English collocation through the application of DDL. In other words, the post-test scores in the grammatical section of the translation task of both high-proficiency participants ($\overline{X}$ = 4.48) and low-proficiency participants ($\overline{X}$ = 2.48) are significantly higher than their pre-test scores

in the same section and the same task ($\overline{X}$ = 3.46 and $\overline{X}$ = 0.75 respectively). In spite of the significant difference between the pretest scores and the posttest scores in the grammatical section of the translation task, when comparing between the gain scores (G Scores) in the grammatical section of the translation task of the high-proficiency participants and that score of the low-proficiency participants, a significant difference between these two sets of the gain scores is also demonstrated. According to the comparison data between the G Scores in the grammatical section of the translation task of the high-proficiency participants and the G Scores in the same section and task of the low-proficiency participants, the G Scores of the high-proficiency participants ($\overline{X}$ = 1.02) is significantly lower than the overall G Scores of the low-proficiency participants ($\overline{X}$ = 1.72).

Table 4.17: The Comparison between the Pre-test Score and the Post-test Score of the Translation Task in the Lexical Section of the High-proficiency Participants

N=48

The Score of Translation Task in Lexical Section of the High-proficiency Participants	***Total***	$\overline{X}$	***SD***	***t***	ρ
Pre-test	8	2.54	1.40	6.45*	.000
Post-test	8	4.04	1.58		

Table 4.17 shows the comparison between the pre-test score and the post-test score of the translation task in the lexical section of the high-proficiency participants. The result of *t*-test run on the pre-test score of the productive skill in the lexical section of the high-proficiency participants ($\overline{X}$ = 2.54 and *SD* = 1.40) and that score of the post-test in the same section ($\overline{X}$ = 4.04 and *SD* = 1.58) with *t* (6.45) shows the p-value of 0.000 which is lower than the 0.05 level of significance. This indicates that for the high-proficiency participants, the post-test score of the productive skill in the lexical section is significantly higher than the pre-test score of the productive skill in the lexical section (the average score is 4.04 and 2.54 respectively).

Table 4.18: The Comparison between the Pre-test Score and the Post-test Score of the Translation Task in the Lexical Section of the Low-proficiency Participants

N=48

The Score of Translation Task in Lexical Section of the Low-proficiency Participants	*Total*	$\overline{X}$	*SD*	*t*	ρ
Pre-test	8	0.25	0.44	10.31*	.000
Post-test	8	1.81	0.89		

Table 4.18 shows the comparison between the pre-test score and the post-test score of the translation task in the lexical section of the low-proficiency participants. The result of *t*-test computed on the pre-test score of the translation task in the lexical section of the low-proficiency participants ($\overline{X}$ = 0.25 and *SD* = 0.44) and that score of the post-test in the same section ($\overline{X}$ = 1.81 and *SD* = 0.89) with *t* (10.31) shows the p-value of 0.000 which is lower than the 0.05 level of significance. This indicates that the post-test score of the translation task in the lexical section of the low-proficiency participants is significantly higher than the pre-test score of the translation task in the lexical section (the average score is 1.81 and 0.25 respectively).

Table 4.19: The Comparison between the Gain Score of the Translation Task in the Lexical Section of the High-proficiency Participants and the Low-proficiency Participants

N=96

The Gain Score of the Translation Task in the Lexical Section	*Total*	$\overline{X}$	*SD*	*t*	ρ
High-proficiency Participants	8	1.50	2.60	0.39	.700
Low-proficiency Participants	8	1.56	1.13		

Table 4.19 shows the comparison between the gain score of the translation task in the lexical section of the high-proficiency participants and the gain score of the translation task in the lexical section of the low-proficiency participants. The result of *t*-test run on the gain score of the translation task in the lexical section of the high-

proficiency participants ($\overline{X}$ = 1.50 and *SD* = 2.60) and that score of the low-proficiency participants ($\overline{X}$ = 1.56 and *SD* = 1.13) with *t* (0.39) shows the p-value of 0.700 which is higher than the 0.05 level of significance. This indicates that the gain score of the translation task in the lexical section of the high-proficiency participants is not significantly different from the gain score of the translation task in the same section of the low-proficiency participants (the average score is 1.50 and 1.56 respectively).

4.1.6 The summary of the findings regarding the contribution of DDL on the English collocational knowledge development in the lexical section of the translation task of high-proficiency and low-proficiency Thai EFL students

The results of the present study regarding the contribution of DDL on the English collocational knowledge development in the lexical section of the translation task of Thai EFL students reveal that both high-proficiency and low-proficiency Thai EFL students demonstrate an improvement in their test scores in the lexical section of the translation task after learning English collocation through the application of DDL. In a similar vein, the post-test scores in the lexical section of the translation task of both high-proficiency participants ($\overline{X}$ = 4.04) and low-proficiency participants ($\overline{X}$ = 1.81) are significantly higher than their pre-test scores in the same section and the same task ($\overline{X}$ = 2.54and $\overline{X}$ = 0.25 respectively). In addition to the significant difference between the pretest scores and the posttest scores in the lexical section of the translation task, when comparing between the gain scores (G Scores) in the lexical section of the translation task of the high-proficiency participants and that score of the low-proficiency participants, a significant difference between these two sets of the gain scores is not demonstrated. Based on the comparison data between the G Scores in the lexical section of the translation task of the high-proficiency participants and the G Scores in the same section and task of the low-proficiency participants, the G Scores of the high-proficiency participants ($\overline{X}$ = 1.50) is not significantly different from the overall G Scores of the low-proficiency participants ($\overline{X}$ =1.56).

Table 4.20: The Comparison between Overall Pre-test Score and Overall Post-test Score in Multiple-choice Task of High-proficiency Participants

N=48

The Overall Score in the Multiple-choice Task of the High-proficiency Participants	*Total*	$\overline{X}$	*SD*	*t*	ρ
Pre-test	35	19.17	4.44	6.68*	.000
Post-test	35	23.29	4.20		

Table 4.20 shows the comparison between the overall pre-test score and the overall post-test score in the multiple-choice task of the high-proficiency participants. The result of *t*-test computed on the overall pre-test score in the multiple-choice task of the high-proficiency participants ($\overline{X}$ = 19.17 and *SD* = 4.44) and that score in the post-test ($\overline{X}$ = 23.29 and *SD* = 4.20) with *t* (6.68) shows the p-value of 0.000 which is lower than the 0.00 level of significance. This indicates that for the high-proficiency participants, the overall post-test score in the multiple-choice task is significantly higher than the overall pre-test score in the same task (the average score is 23.29 and 19.17 respectively).

Table 4.21: The Comparison between Overall Pre-test Score and Overall Post-test Score in Multiple-choice Task of Low-proficiency Participants

N=48

The Overall Score in the Multiple-choice Task of the Low-proficiency Participants	*Total*	$\overline{X}$	*SD*	*t*	ρ
Pre-test	35	11.60	3.45	1.21	.234
Post-test	35	12.40	3.89		

Table 4.21 shows the comparison between the overall pre-test score and the overall post-test score in the multiple-choice task of the low-proficiency participants. The result of *t*-test run on the overall pre-test score in the multiple-choice task of the low-proficiency participants ($\overline{X}$ = 11.60 and *SD* = 3.45) and that score of the post-test ($\overline{X}$ = 12.40 and *SD* = 3.89) with *t* (1.28) shows the p-value of 0.234 which is higher

than the 0.00 level of significance. This indicates that the overall post-test score in the multiple-choice task of the low-proficiency participants is not significantly different from their overall pre-test score in the same task (the average score is 12.40 and 11.60 respectively).

Table 4.22: The Comparison between Overall Gain Score in the Multiple-choice Task of the High-proficiency Participants and the Low-proficiency Participants

N=96

The Overall Gain Score in the Multiple-choice Task	***Total***	$\overline{X}$	***SD***	***t***	ρ
High-proficiency Participants	35	4.13	4.55	3.62*	.001
Low-proficiency Participants	35	0.79	4.28		

Table 4.22 shows the comparison between the overall gain score in the multiple-choice task of the high-proficiency participants and the overall gain score in the multiple-choice task of the low-proficiency participants. The result of *t*-test run on the overall gain score in the multiple-choice task of high-proficiency participants ($\overline{X}$ = 4.13 and *SD* = 4.55) and that score of the low-proficiency participants ($\overline{X}$ = 0.79 and *SD* = 4.28) with *t* (3.62) shows the p-value of 0.001 which is lower than the 0.05 level of significance. This indicates that the overall gain score in the multiple-choice task of the high-proficiency participants is significantly higher than the overall gain score in the multiple-choice task of the low-proficiency participants (the average score is 4.13 and 0.79 respectively).

4.1.7 The summary of the findings regarding the contribution of DDL on the overall English collocational knowledge development in the multiple-choice task of high-proficiency and low-proficiency Thai EFL students

The results of the current study about the effectiveness of DDL on the overall English collocational knowledge development in the multiple-choice task of Thai EFL students reveal that high-proficiency Thai EFL students demonstrate an improvement in their test scores in the multiple-choice task after learning English collocation through the application of DDL. In other quarters, the post-test scores in the multiple-choice task of high-proficiency participants ($\overline{X}$ = 23.29) is significantly

higher than their pre-test scores in the same task ($\overline{X}$ =19.17). This improvement, however, is not demonstrated among the low-proficiency participants because the post-test scores in the multiple-choice task of low-proficiency participants ($\overline{X}$ = 12.40) is not significantly different from their pre-test scores in the same task ($\overline{X}$ = 11.60). Additionally, when comparing between the gain scores (G Scores) in the multiple-choice task of the high-proficiency participants and that score of the low-proficiency participants, a significant difference between these two sets of the gain scores is also demonstrated. According to the comparison data between the G Scores in the multiple-choice task of the high-proficiency participants and the G Scores in the same task of the low-proficiency participants, the G Scores of the high-proficiency participants ($\overline{X}$ = 4.13) is significantly higher than the G Scores of the low-proficiency participants ($\overline{X}$ = 0.79).

Table 4.23: The Comparison between the Pre-test Score of the Multiple-choice Task in the Grammatical Section and the Post-test Score of the Multiple-choice Task in the Grammatical Section of the High-proficiency Participants

N=48

The Score of the Multiple-choice Task in Grammatical Section of the High-proficiency Participants	***Total***	$\overline{X}$	***SD***	***t***	ρ
Pre-test	15	8.23	2.15	3.35*	.002
Post-test	15	9.54	2.25		

Table 4.23 shows the comparison between the pre-test score and the post-test score of the multiple-choice task in the grammatical section of the high-proficiency participants. The result of *t*-test run on the pre-test score of the multiple-choice task in the grammatical section of the high-proficiency participants ($\overline{X}$ = 8.23 and *SD* = 2.15) and that the post-test score in the same task and same section ($\overline{X}$ = 9.45 and *SD* = 2.25) with *t* (3.35) shows the p-value of 0.002 which is lower than the 0.05 level of significance. This indicates that for the high-proficiency participants, the post-test score of the multiple-choice task in the grammatical section is significantly higher than the pre-test score of the multiple-choice task in grammatical section (the average score is 9.54 and 8.23 respectively).

Table 4.24 The Comparison between the Pre-test Score of the Multiple-choice Task in the Grammatical Section and the Post-test Score of the Multiple-choice Task in the Grammatical Section of the Low-proficiency Participants

N=48

The Score of the Multiple-choice Task in Grammatical Section of the Low-proficiency Participants	*Total*	$\overline{X}$	*SD*	*t*	ρ
Pre-test	15	4.94	1.98	0.75	.455
Post-test	15	5.23	2.14		

Table 4.24 shows the comparison between the pre-test score and the post-test score of the multiple-choice task in the grammatical section of the low-proficiency participants. The result of *t*-test run on the pre-test score of receptive skill in grammatical section of the low-proficiency participants ($\overline{X}$ = 4.94 and *SD* = 1.98) and that score of the post-test in the same section ($\overline{X}$ = 5.23 and *SD* = 2.14) with *t* (0.75) shows the p-value of 0.455 which is higher than the 0.05 level of significance. This indicates that for the low-proficiency participants, the post-test score of the receptive skill in the section is not significantly different from the pre-test score of the receptive skill in the same section (the average score is 5.23 and 4.94 respectively).

Table 4.25 The Comparison between the Gain Score of the Multiple-choice Task in Grammatical Section of the High-proficiency Participants and the Low-proficiency Participants

N=96

The Gain Score of the Multiple-choice Task in Grammatical Section	*Total*	$\overline{X}$	*SD*	*t*	ρ
High-proficiency Participants	15	1.31	2.68	1.79	.081
Low-proficiency Participants	15	0.29	2.71		

Table 4.25 shows the comparison between the gain score of the multiple-choice task in the grammatical section of the high-proficiency participants and the gain score of the multiple-choice task in the grammatical section of the low-proficiency participants. The result of *t*-test run on the gain score of the multiple-choice task in the grammatical section of high-proficiency participants ($\overline{X}$ = 1.31 and *SD* = 2.68) and

that score of the low-proficiency participants ($\overline{X}$ = 0.29 and *SD* = 2.71) with *t* (1.79) shows the p-value of 0.081 which is higher than the 0.05 level of significance. This indicates that the gain score of the multiple-choice task in the grammatical section of the high-proficiency participants is not significantly different from the gain score of the multiple-choice task in the grammatical section of the low-proficiency participants (the average score is 1.31 and 0.29 respectively).

4.1.8 The summary of the findings regarding the contribution of DDL on the English collocational knowledge development in the grammatical section of the multiple-choice task of high-proficiency and low-proficiency Thai EFL students

The findings of the present study about the effectiveness of DDL on the English collocational knowledge development in the grammatical section of the multiple-choice task of Thai EFL students reveal that high-proficiency Thai EFL students demonstrate an improvement in their test scores in the grammatical section of the multiple-choice task after learning English collocation through the application of DDL. In other words, the post-test scores in the grammatical section of the multiple-choice task of high-proficiency participants ($\overline{X}$ = 9.54) is significantly higher than their pre-test scores in the same section and task ($\overline{X}$ = 8.23). This improvement, on the other hand, is not demonstrated among the low-proficiency participants because the post-test scores in the grammatical section of the multiple-choice task of the low-proficiency participants ($\overline{X}$ =5.23) is not significantly different from their pre-test scores in the same section and task ($\overline{X}$ = 4.94). However, when comparing between the gain scores (G Scores) in the grammatical section of the multiple-choice task between the high-proficiency participants and that score of the low-proficiency participants, a significant difference between these two sets of the gain scores is not demonstrated. According to the comparison data between the G Scores in the grammatical section of the multiple-choice task of the high-proficiency participants and the G Scores in the same section and task of the low-proficiency participants, the G Scores of the high-proficiency participants ($\overline{X}$ = 1.31) is significantly different from the G Scores of the low-proficiency participants ($\overline{X}$ = 0.29).

Table 4.26 The Comparison between the Pre-test Score and the Post-test Score of the Multiple-choice Task in the Lexical Section of the High-proficiency Participants

N=48

The Score of the Multiple-choice Task in Lexical Section of the High-proficiency Participants	***Total***	$\overline{X}$	***SD***	***t***	ρ
Pre-test	20	10.94	2.88	7.60*	.000
Post-test	20	13.75	2.39		

Table 4.26 shows the comparison between the pre-test score and the post-test score of the multiple-choice task in the lexical section of the high-proficiency participants. The result of *t*-test run on the pre-test score of the multiple-choice task in the lexical section of the high-proficiency participants ($\overline{X}$ = 10.94 and *SD* = 2.88) and that score of the post-test in the same section ($\overline{X}$ = 13.75 and *SD* = 2.39) with *t* (7.60) shows the p-value of 0.000 which is lower than the 0.05 level of significance. This indicates that for the high-proficiency participants, the post-test score of the multiple-choice task in the lexical section is significantly higher than the pre-test score of the multiple-choice task in the lexical section (the average score is 13.75 and 10.94 respectively).

Table 4.27 The Comparison between the Pre-test Score and the Post-test Score of the Multiple-choice Task in the Lexical Section of the Low-proficiency Participants

N=48

The Score of the Multiple-choice Task in Lexical Section of the Low-proficiency Participants	***Total***	$\overline{X}$	***SD***	***t***	ρ
Pre-test	20	6.67	2.50	1.17	.245
Post-test	20	7.21	2.63		

Table 4.27 shows the comparison between the pre-test score and the post-test score of the multiple-choice task in the lexical section of the low-proficiency participants. The result of *t*-test run on the pre-test score of the multiple-choice task in the lexical section of the low-proficiency participants ($\overline{X}$ = 6.67 and *SD* = 2.50) and that score of

the post-test in the same task and section ($\overline{X}$ = 7.21 and *SD* = 2.63) with *t* (1.17) shows the p-value of 0.245 which is higher than the 0.05 level of significance. This indicates that the post-test score of the multiple-choice task in lexical section of the low-proficiency participants is not significantly different from their pre-test score of the multiple-choice task in the lexical section (the average score is 7.21 and 6.67 respectively).

Table 4.28 The Comparison between the Gain Score of the Multiple-choice Task in Lexical Section of the High-proficiency Participants and the Low-proficiency Participants

N=96

The Gain Score of the Multiple-choice Task in Lexical Section	***Total***	$\overline{X}$	***SD***	***t***	ρ
High-proficiency Participants	20	2.81	3.19	3.74*	.000
Low-proficiency Participants	20	0.54	3.19		

Table 4.28 shows the comparison between the gain score of the multiple-choice task in the lexical section of the high-proficiency participants and the gain score of the multiple-choice task in the lexical section of the low-proficiency participants. The result of *t*-test run on the gain score of the multiple-choice task in the lexical section of the high-proficiency participants ($\overline{X}$ = 2.81 and *SD* = 3.19) and that score of the low-proficiency participants ($\overline{X}$ = 0.54 and *SD* = 2.56) with *t* (3.74) shows the p-value of 0.000 which is lower than the 0.05 level of significance. This indicates that the gain score of the multiple-choice task in the lexical section of the high-proficiency participants is significantly higher than the gain score of the multiple-choice task in the lexical section of the low-proficiency participants (the average score is 2.81 and 0.54 respectively).

4.1.9 The summary of the findings regarding the contribution of DDL on the English collocational knowledge development in the lexical section of the multiple-choice task of high-proficiency and low-proficiency Thai EFL students

The findings of the current study regarding the effectiveness of DDL on the English collocational knowledge development in the lexical section of the multiple-choice task of Thai EFL students reveal that high-proficiency Thai EFL students demonstrate an improvement in their test scores in the lexical section of the multiple-choice task after learning English collocation through the application of DDL. That is, the post-test scores in the lexical section of the multiple-choice task of high-proficiency participants ($\overline{X}$ = 13.75) is significantly higher than their pre-test scores in the same section and task ($\overline{X}$ = 10.94). This improvement, however, is not exhibited among the low-proficiency participants because the post-test scores in the lexical section of the multiple-choice task of the low-proficiency participants ($\overline{X}$ = 7.21) is not significantly different from their pre-test scores in the same section and task ($\overline{X}$ = 6.67). Additionally, when comparing between the gain scores (G Scores) in the lexical section of the multiple-choice task between the high-proficiency participants and that score of the low-proficiency participants, a significant difference between these two sets of the gain scores is demonstrated. According to the comparison data between the G Scores in the lexical section of the multiple-choice task of the high-proficiency participants and the G Scores in the same section and task of the low-proficiency participants, the G Scores of the high-proficiency participants ($\overline{X}$ = 2.81) is significantly higher than the G Scores of the low-proficiency participants ($\overline{X}$ = 0.54).

4.2 The Correlation between Thai EFL Students' English Proficiency and Their Collocational Knowledge Development

This part of findings aims at answering the second research question "Is there any significant correlation between Thai EFL students' English proficiency and their collocational knowledge development" by measuring the linear correlation between the participants' English Proficiency Test (EPT) scores and their gain scores of the collocation test (G Scores). To measure the strength of the association of these two variables, the change between the collocation pre-test score

and the collocation post-test score (i.e. the gain score) of the participants in each proficiency group are compared with their English Proficiency Test (EPT) scores through the application of the Pearson's correlation coefficient (*r*). The information regarding the correlation is presented and illustrated in the following tables and figures.

Table 4.29 The Correlation between the Gain Score (G Scores) and English Proficiency Test (EPT) Score of the High-proficiency Participants

EPT Score of High-proficiency Participants	*r*	*ρ* Sig.(2-tailed)
Gain Score of High-proficiency Participants (G Scores)	-0.093	0.532

**correlation is significant at 0.05 level (2-tailed*)

Table 4.29 shows the correlation between the gain scores (G Scores) and English Proficiency Test (EPT) scores of the high-proficiency participants. The result of the Pearson's correlation coefficient computed on the association between the high-proficiency EPT scores and their G Scores (with *r* = -0.093) shows the p-value (Sig 2-tailed) of 0.523, which is higher than the level of significance. This indicates there is no statistically significant linear correlation or a zero correlation between the G Scores and the EPT scores of the high-proficiency participants.

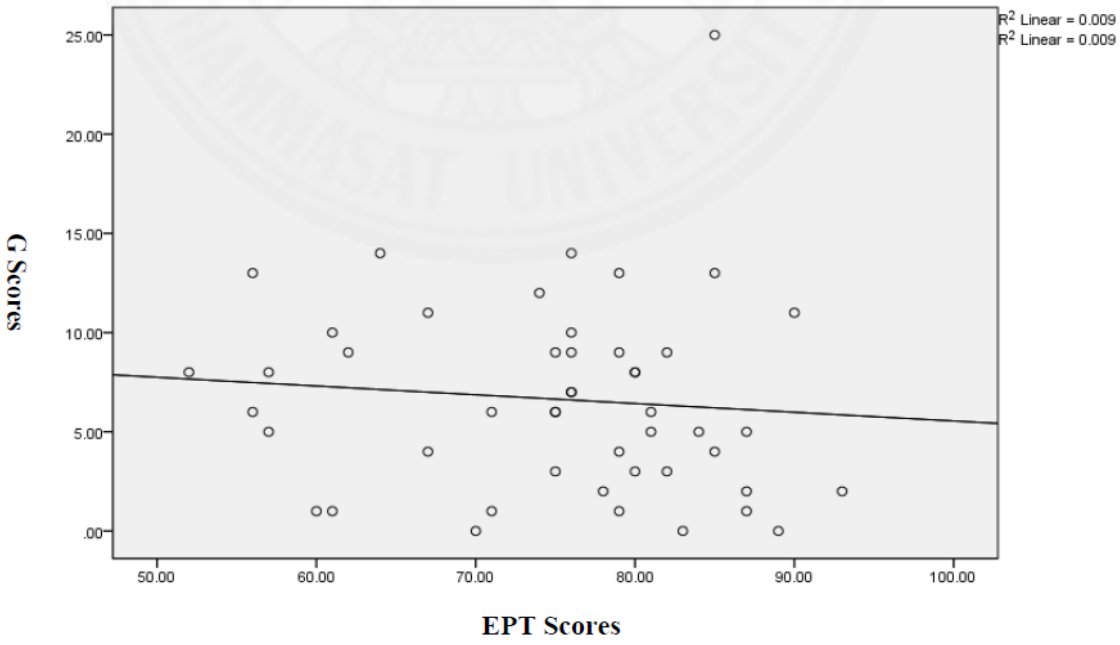


Figure 4.1 The Scatter Plot of Correlation between the Gain Scores and English Proficiency Test (EPT) Scores of High-proficiency Participants

Figure 4.1 illustrates the scatter plot of the linear correlation between the gain scores and EPT scores of the high proficiency participants. According to the scatter plot, the strength of the association between these two variables is very weak (with $r^2 = 0.009$). This confirms that there is no liner correlation between these two variables because the EPT scores and the G Scores of the high proficiency participants are moderately scatted without the direction of linear relationship. The EPT scores of the high-proficiency participants are moderately spread out in the ranges of 60-70. The G Scores of the high-proficiency participants, however, are moderately grouped, especially in the ranges between 0-7. In other words, EPT scores and G Scores of the high-proficiency participants are not related to one another. That is to say, for the high-proficiency participants the increases or decreases in EPT scores have no effect on increases or decreases in G Scores.

Table 4.30 The Correlation between the Gain Score (G Scores) and English Proficiency Test (EPT) Score of the Low-proficiency Participants

EPT Score of Low-proficiency Participants	*r*	*ρ* Sig.(2-tailed)
Gain Scores of Low-proficiency Participants (G Scores)	-0.110	0.434

**correlation is significant at 0.05 level (2-tailed*)

Table 4.30 shows the correlation between the gain scores (G Scores) and English Proficiency Test (EPT) scores of the low-proficiency participants. The result of the Pearson's correlation coefficient computed on the association between the low-proficiency EPT scores and their G Scores (with $r = -0.110$) shows the p-value (Sig 2-tailed) of 0.434, which is higher than the level of significance. This indicates there is no statistically significant linear correlation or a zero correlation between the G Scores and the EPT scores of the low-proficiency participants.

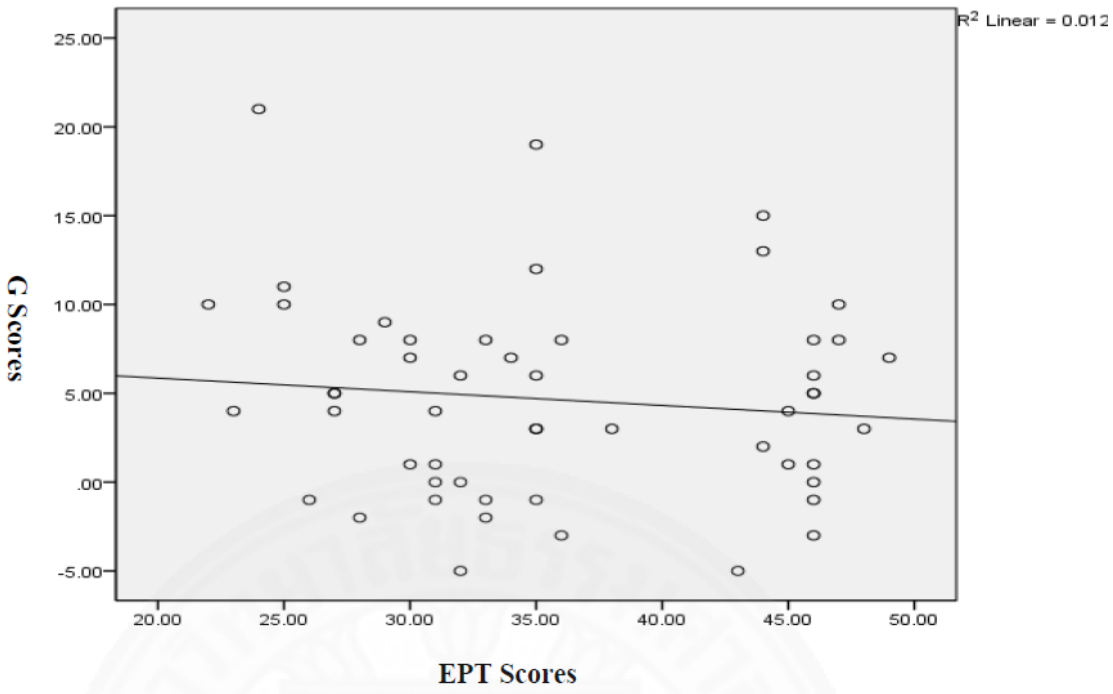


Figure 4.2 The Scatter Plot of Correlation between the Gain Scores and English Proficiency Test (EPT) Scores of Low-proficiency Participants

Figure 4.2 shows the scatter plot of the linear correlation between the gain scores and EPT scores of the low-proficiency participants. According to the scatter plot, the strength of the association between these two variables is very weak (with $r^2 = 0.012$). This confirms that there is no linear correlation between these two variables because the EPT scores and the G scores of the low-proficiency participants are moderately scatted without the direction of linear relationship. The EPT scores of the low-proficiency participants are moderately spread out in the ranges of 25-35. The G Scores of the high-proficiency participants, however, are moderately grouped, especially in the ranges between 1-5 and 6-10. In other words, EPT scores and G Scores of the low-proficiency participants are not related to one another. That is to say, for the low-proficiency participants the increases or decreases in EPT scores have no effect on increases or decreases in G Scores.

4.2.1 The summary of the findings about the correlation between Thai EFL students' English Proficiency and their collocational knowledge development

The results of the current study regarding the correlation between Thai EFL students' English Proficiency and their collocational knowledge development reveal that the strength of the relations between the gain scores (G Scores) of the collocation test and English Proficiency Test (EPT) scores of both low-proficiency participants and high-proficiency participants are very weak. In a similar vein, EPT scores and G Scores of the both low-proficiency participants and high-proficiency participants are not related to one another. This means the increases or decreases in EPT scores have no effect on increases or decreases in G Scores of both low-proficiency and high-proficiency participants.

4.3 Thai EFL Students' DDL Learning Strategies and Problem-solving Strategies Utilized during Learning English Collocations through DDL (Quantitative Data Elicited from Can-do Statement Checklist)

This section of the findings aims at providing information to answer the third research question "How do Thai EFL students with different proficiency levels follow DDL learning processes during learning English collocations through DDL?" by analyzing and comparing the DDL learning processes (i.e. Identification, Classification, and Generalization) of the participants divided into high-proficiency group and low-proficiency group. To provide a comprehensive answer regarding this question, both quantitative and qualitative information was integrated. The quantitative data was collected from the results of the Can-do Statement Checklist which the participants had to provide the self-evaluation on their DDL learning performance for three times.

The data from the Can-do Statement Checklist which is categorized into three steps of DDL learning processes in each round were computed to find mean ($\overline{X}$) and standard deviation (*SD*). In order to examine and compare the self-evaluation score of high-proficiency and low-proficiency participants, the t- test and one-way ANOVA were utilized and the results are presented in Table 4.32 to Table 4.63.

In addition to the quantitative data from the participants' self-evaluation, the qualitative data collected through the Students' Reflection, Think-aloud task, and Semi-structured Interview sessions were analyzed to triangulate with the information from the Can-do Statement Checklist in order to provide a more comprehensive understanding about the participants' DDL learning processes. Apart from the DDL learning procedures, the qualitative data elicited from Students' Reflection, Think-aloud task, and Semi-structured Interview also provide information regarding the learning and problem-solving strategies utilized during learning English collocations through DDL. To analyze the data collected from these sources, an interpretive approach to parse through and examine the various data that reflect the participants' DDL learning processes and problem solving strategies. The data, then, were coded separately by the researcher.

Table 4.31 Description of Reported Ability Regarding DDL Processes through Can-do Statement Checklist

Mean (*M*)	**Description of Ability**
4.21- 5.00	Completely Understand
3.41 - 4.20	Understand
2.61 - 3.40	Moderately Understand
1.81- 2.60	Don't Understand
1.00 - 1.80	Completely Don't Understand

Table 4.32 The Overall Self-evaluation Scores from Can-do Statement Checklist of the Low-proficiency Participants and the High-proficiency Participants

N=96

DDL Process	**Group**	$\overline{X}$			***SD***		
		1st Round	**2nd Round**	**3rd Round**	**1st Round**	**2nd Round**	**3rd Round**
Identification	Low	3.63	3.83	3.90	0.57	0.69	0.75
	High	3.50	3.58	3.79	0.97	0.99	1.01
Classification	Low	3.67	3.83	4.02	0.66	0.72	0.79
	High	3.25	3.31	3.63	1.10	1.04	1.02
Generalization	Low	3.56	3.60	3.75	0.85	0.67	0.76
	High	2.85	3.29	3.85	1.09	1.09	1.03

Table 4.32 shows the overall self-evaluation score elicited from the Can-do Statement Checklist of the low-proficiency participants and the high-proficiency participants. According to Table 4.32, both of the low-proficiency participants and the high-proficiency participants report their understanding of the Identification process at the level of 'Understand' throughout the three times of the evaluations. Like the Identification step, the high-proficiency participants and the low-proficiency participants evaluate their ability in the Classification step at the level of 'Understand' throughout the three times of the evaluations. Interestingly, for the Generalization step, only the low-proficiency participants report their understanding at the level of 'Understand' throughout the three times of the evaluations. The high-proficiency participants, on the other hand, evaluate their ability regarding the Generalization at the level of 'Understand' only in the 2nd and 3rd evaluations. As shown in Table 4.32 the self-evaluation score of the 1st round elicited from the Can-do Statement Checklist regarding the Generalization step of the high-proficiency participants, the evaluation score indicates that the high-proficiency participants evaluate their understanding of this DDL step at the level of 'Moderately Understand'.

Table 4.33 The Comparison of Self-evaluation Score between the 1st round and the 2nd round of Can-do Statement Checklist in Identification Process of High-proficiency Participants

N=48

DDL: Identification Self-evaluation Round	$\overline{X}$	***SD***	***t***	ρ
1st Round	3.50	0.97	0.78	.439
2nd Round	3.58	0.99		

Table 4.33 illustrates the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Identification process of high-proficiency participations. The result of *t*-test computed on the high-proficiency participations' self-evaluation score comparing the 1st round ($\overline{X}$ = 3.50 and *SD* = 0.97) and the 2nd round ($\overline{X}$ = 3.58 and *SD* = 0.99) regarding Identification process with *t* (0.78) shows the p-value 0.439 which is higher than 0.05 level of significance. This indicates that for the high-proficiency participants, the 1st round self-evaluation score of

Identification process is not significantly different from the 2nd round self-evaluation score of the same process (the average score is 3.50 and 3.58 respectively).

Table 4.34 The Comparison of Self-evaluation Score between the 2nd round and the 3rd round of Can-do Statement Checklist in Identification Process of High-proficiency Participants

N=48

DDL: Identification Self-evaluation Round	$\overline{X}$	*SD*	*t*	ρ
2nd Round	3.58	0.99	2.02*	.049
3rd Round	3.79	1.01		

Table 4.34 shows the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Identification process of high-proficiency participations. The result of *t*-test computed on the high-proficiency participations' self-evaluation score comparing the 2nd round ($\overline{X}$ = 3.58 and *SD* = 0.99) and the 3rd round ($\overline{X}$ = 3.78 and *SD* = 1.01) regarding Identification process with *t* (2.02) shows the p-value 0.049 which is lower than 0.05 level of significance. This indicates that for the high-proficiency participants, the 3rd round self-evaluation score of Identification process is significantly higher than the 2nd round self-evaluation of the same process (the average score is 3.79 and 3.58 respectively).

Table 4.35 The Comparison of Self-evaluation Score between the 1st round and the 3rd round of Can-do Statement Checklist in Identification Process of the High-proficiency Participants

N=48

DDL: Identification Self-evaluation Round	$\overline{X}$	*SD*	*t*	ρ
1st Round	3.50	0.97	1.92	.061
3rd Round	3.79	1.01		

Table 4.35 illustrates the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Identification process of high-proficiency participations. The result of *t*-test computed on the high-proficiency participations'

self-evaluation score comparing the 1st round ($\overline{X}$ = 3.50 and *SD* = 0.97) and the 3rd round ($\overline{X}$ = 3.79 and *SD* = 1.01) regarding Identification process with *t* (1.92) shows the p-value 0.061which is higher than 0.05 level of significance. This indicates that for the high-proficiency participants, the 1st round self-evaluation score of Identification process is not significantly different from the 3rd round self-evaluation of the same process (the average score is 3.50 and 3.79 respectively).

Table 4.36 The Comparison of 1st round, 2nd round, and 3rd round Self-evaluation Score from Can-do Statement Checklist in Identification Process of the High-proficiency Participants

Self-Evaluation Can-do Statement	Source of Variances	df	SS	MS	F	ρ
Identification	Between Groups	2	2.167	1.08	1.11	.33
	Within Group	141	137.583	0.97		
	Total	143	139.750			

Table 4.36 illustrates the comparison of the 1st, 2nd, 3rd round of the self-evaluation score reported through Can-do Statement Checklist in Identification Process of the high-proficiency participants. The result of one-way ANOVA determined the self-evaluation scores among these three rounds (with F = 1.110) shows the p-value of 0.332 which is higher than the level of significance (p = 0.05). This suggests that there is no statistically significant difference among the 1st, 2nd, and 3rd round of self-evaluation scores obtained from Can-do Statement Checklist in Identification Process of the high-proficiency participants.

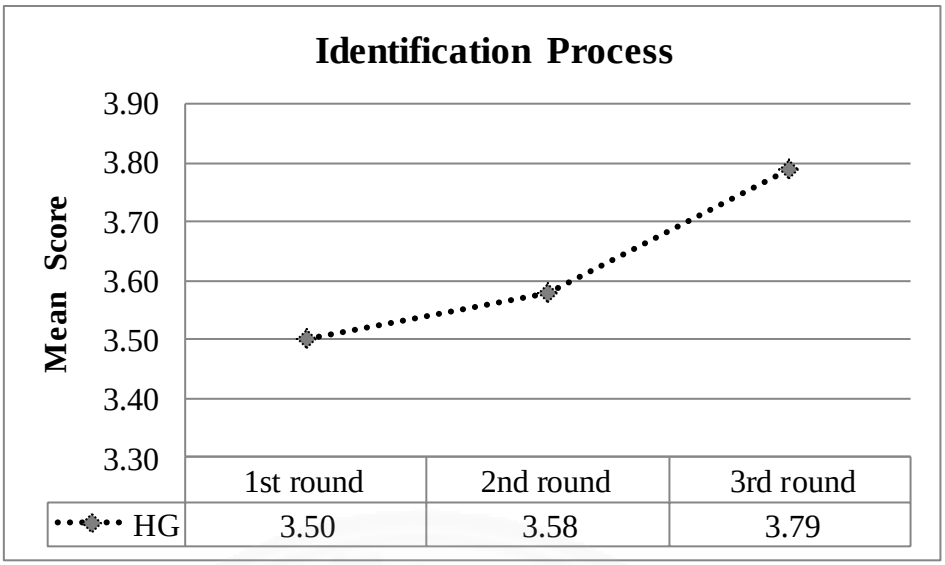


Figure 4.3: The Comparison of the 1st round, the 2nd round, and the 3rd round Self-evaluation Score from Can-do Statement Checklist in Identification Process of High-proficiency Participants

The Figure 4.3 illustrates the comparison of the average score among the 1st round, the 2nd round, and the 3rd round of the self-evaluation score from Can-do Statement Checklist regarding Identification process of the high-proficiency participants. According to the line graph shown in Figure 4.3, the average scores of the self-evaluation in 'Identification' process of the high-proficiency participants have slightly risen over the three times of evaluations. The average score of the 1st self-evaluation is 3.50 and this score slightly increased in the second round of the self-evaluation ($\overline{X}$ = 3.58). In the 3rd round of the self-evaluation, the average score ($\overline{X}$ = 3.79) is a little bit higher and it is the highest average score when compared to those scores in the 1st round and the 2nd round of the self-evaluations. Despite the increase in the average score over the three times of the evaluation, all of these average scores (i.e. $\overline{X}$ = 3.50, $\overline{X}$ = 3.58, and $\overline{X}$ = 3.79) are categorized in the level of 'Understand' based on the DDL description of ability from the Can-do Statement Checklist. This means the high-proficiency participants only informed that they understand the 'Identification' step of DDL over the three times of evaluations.

4.3.1 The summary of the findings about high-proficiency Thai EFL students' self-evaluation on their ability to follow Identification step of DDL

The findings elicited from Can-do Statement Checklist of Thai EFL students' self-evaluation on their ability to follow Identification step of DDL reveal that the high-proficiency participants evaluate their understanding about Identification step of DDL at the level of 'Understand' ($\overline{X}$ = 3.50) at the 1st round of the self-evaluation, and when compared the 1st self-evaluation score to the 2nd self-evaluation score ($\overline{X}$ = 3.58), the comparison data show that there is no significant difference between these two average scores and both of them are in the level of 'Understand'. The average score of the 3rd round of self-evaluation ($\overline{X}$ = 3.79) is sharply increased and it is significantly higher than the average self-evaluation score of the 2nd round; however, they are in the same level of understanding which is 'Understand'. Additionally, the comparison of the average score among the 1st round ($\overline{X}$ = 3.50), the 2nd round ($\overline{X}$ = 3.58), and the 3rd round ($\overline{X}$ = 3.79) of the self-evaluation score regarding Identification step of the high-proficiency participants through the application of one-way ANOVA reveals that there is no statistically significant difference among the 1st, 2nd, and 3rd round of self-evaluation scores and all of them are in the same level of understanding which is 'Understand'.

Table 4.37 The Comparison of Self-evaluation Score between the 1st round and the 2nd round of Can-do Statement Checklist in Identification Process of the Low-proficiency Participants

N=48

DDL: Identification Self-evaluation Round	$\overline{X}$	*SD*	*t*	ρ
1st Round	3.63	0.57	1.70	.096
2nd Round	3.83	0.69		

Table 4.37 illustrates the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Identification process of the low-proficiency participations. The result of *t*-test computed on the low-proficiency participations' self-evaluation score comparing the 1st round ($\overline{X}$ = 3.63 and *SD* = 0.57) and the 2nd round ($\overline{X}$ = 3.83 and *SD* = 0.69) regarding Identification process with *t* (1.70) shows

the p-value 0.096 which is higher than 0.05 level of significance. This indicates that for the low-proficiency participants, the 1st round self-evaluation score of Identification process is not significantly different from the 2nd round self-evaluation of the same process (the average score is 3.63 and 3.83 respectively).

Table 4.38 The Comparison of Self-evaluation Score between the 2nd round and the 3rd round of Can-do Statement Checklist in Identification Process of the Low-proficiency Participants

N=48

DDL: Identification Self-evaluation Round	$\overline{X}$	*SD*	*t*	ρ
2nd Round	3.83	1.02	0.65	.518
3rd Round	3.99	1.08		

Table 4.38 shows the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Identification process of low-proficiency participations. The result of *t*-test computed on the low-proficiency participations' self-evaluation score comparing the 2nd round ($\overline{X}$ = 3.83 and *SD* = 1.02) and the 3rd round ($\overline{X}$ = 3.99 and *SD* = 1.08) regarding Identification process with *t* (0.65) shows the p-value 0.518 which is higher than 0.05 level of significance. This indicates that for the low-proficiency participants, the 2nd round self-evaluation score of Identification process is not significantly different from the 3rd round self-evaluation of the same process (the average score is 3.83 and 3.99 respectively).

Table 4.39 The Comparison of Self-evaluation Score between the 1st round and the 3rd round of Can-do Statement Checklist in Identification Process of the Low-proficiency Participants

N=48

DDL: Identification Self-evaluation Round	$\overline{X}$	*SD*	*t*	ρ
1st Round	3.63	0.57	1.91	.063
3rd Round	3.90	0.75		

Table 4.39 illustrates the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Identification process of high-proficiency participations. The result of *t*-test computed on the low-proficiency participations' self-evaluation score comparing the 1st round ($\overline{X}$ = 3.63 and *SD* = 0.57) and the 3rd round ($\overline{X}$ = 3.90 and *SD* = 0.75) regarding Identification process with *t* (1.91) shows the p-value 0.063 which is higher than 0.05 level of significance. This indicates that for the low-proficiency participants, the 1st round self-evaluation score of Identification process is not significantly different from the 3rd round self-evaluation of the same process (the average score is 3.63 and 3.90 respectively).

Table 4.40 The Comparison of the 1st round, the 2nd round, and the 3rd round Self-evaluation Score from Can-do Statement Checklist in Identification Process of the Low-proficiency Participants

Self-Evaluation Can-do Statement	Source of Variances	df	SS	MS	F	ρ
Identification	Between Groups	2	1.931	0.965	2.14	0.13
	Within Group	141	64.396	0.457		
	Total	143	66.326			

Table 4.40 illustrates the comparison of the 1st, 2nd, 3rd round of the self-evaluation score reported through Can-do Statement Checklist in Identification Process of the low-proficiency participants. The result of one-way ANOVA determined the self-evaluation scores among these three rounds (with F = 2.14) shows the p-value of 0.13 which is higher than the level of significance (p = 0.05). This suggests that there are no statistically significant differences among the 1st, 2nd, and 3rd round of self-evaluation scores obtained from Can-do Statement Checklist in Identification Process of the low-proficiency participants.

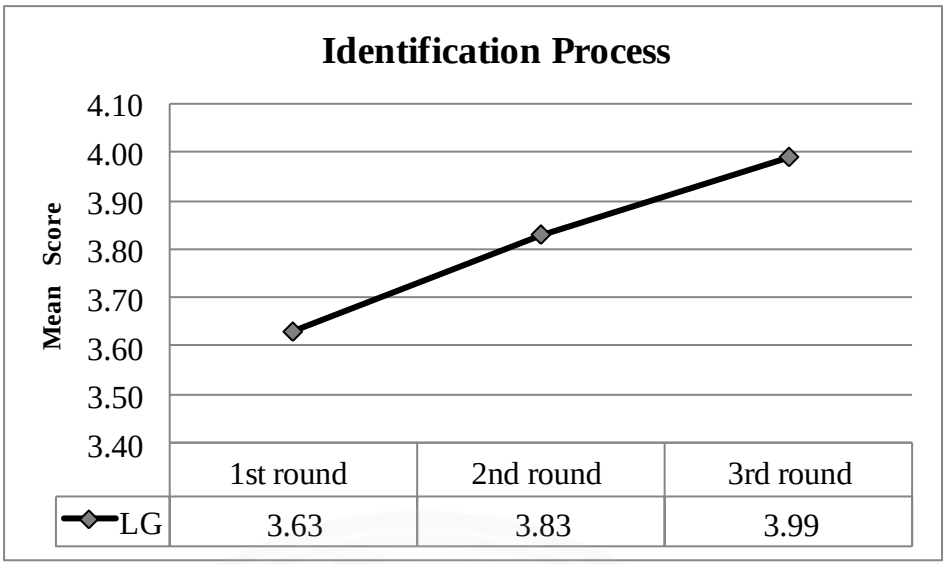


Figure 4.4: The Comparison of 1st round, 2nd round, and 3rd round Self-evaluation Score from Can-do Statement Checklist in Identification Process of the Low-proficiency Participants

The Figure 4.4 illustrates the comparison of the average score among the 1st round, the 2nd round, and the 3rd round of the self-evaluation from Can-do Statement Checklist regarding 'Identification' process of the low-proficiency participants. Based on the line graph, the average scores of the self-evaluation in 'Identification' process of the low-proficiency participants have continuously risen over the three times of evaluations. The average score of the 1st round of the self-evaluation is 3.63 and this score highly increased in the second time of the self-evaluation ($\overline{X}$ = 3.83). In the 3rd round of the self-evaluation, the average score ($\overline{X}$ = 3.99) is a little bit higher and this average score is the highest when compare to those scores in the 1st round and the 2nd round of the self-evaluations. In spite of the increase in the average score over the three times of the evaluation, all of these average scores (i.e. $\overline{X}$ = 3.63, $\overline{X}$ = 3.83, and $\overline{X}$ = 3.99) are categorized in the level of 'Understand' based on the DDL description of ability from the Can-do Statement Checklist. That is to say the low-proficiency participants only reported that they understand the 'Identification' step of DDL over the three times of evaluations.

4.3.2 The summary of the findings about low-proficiency Thai EFL students' self-evaluation on their ability to follow Identification step of DDL

The findings collected from Can-do Statement Checklist of Thai EFL students' self-evaluation on their ability to follow Identification step of DDL reveal that the low-proficiency participants evaluate their understanding about Identification step of DDL at the level of 'Understand' ($\overline{X}$ = 3.63) at the 1st round of the self-evaluation, and when compared the 1st self-evaluation score to the 2nd self-evaluation score ($\overline{X}$ = 3.83), the comparison data show no significant difference between these two average scores and both of them are in the level of 'Understand'. The average score of the 3rd round of self-evaluation ($\overline{X}$ = 3.99) is slightly increased from the 2nd round of self-evaluation but it is not significantly different from the average self-evaluation score of the 2nd round, and they are in the same level of understanding which is 'Understand'. Additionally, the comparison of the average score among the 1st round ($\overline{X}$ = 3.63), the 2nd round ($\overline{X}$ = 3.83), and the 3rd round ($\overline{X}$ = 3.99) of the self-evaluation score regarding Identification step of the low-proficiency participants through the application of one-way ANOVA reveals that there is no statistically significant difference among the 1st, 2nd, and 3rd round of self-evaluation scores and all of them indicate the same level of understanding which is 'Understand'.

Table 4.41 The Comparison of the 1st Round of the Self-evaluation Score from Can-do Statement Checklist in Identification between the High-proficiency Participants and the Low Proficiency Participants

N=48

1st Round Self-evaluation DDL: Identification	$\overline{X}$	***SD***	***t***	ρ
High-proficiency Participations	3.50	0.97	0.83	.411
Low-proficiency Participations	3.63	0.57		

Table 4.41 illustrates the comparison of the 1st round of the self-evaluation score reported through Can-do Statement Checklist in DDL: Identification process of the high-proficiency participations and the low-proficiency participations. The result of *t*-test computed on the high-proficiency participations' 1st round self-evaluation score in Identification process ($\overline{X}$ = 3.50 and *SD* = 0.97) and that score of the low-proficiency

participations ($\overline{X}$ = 3.63 and *SD* = 0.57) with *t* (0.83) shows the p-value 0.411 which is higher than 0.05 level of significance. This indicates that 1st round self-evaluation score in Identification process of the high-proficiency participants is not significantly different from 1st round self-evaluation score in Identification process of the low-proficiency participants (the average score is 3.50 and 3.63 respectively).

Table 4.42 The Comparison of the 2nd Round of the Self-evaluation Score from Can-do Statement Checklist in Identification between the High-proficiency Participants and the Low Proficiency Participants

N=48

2nd Round Self-evaluation DDL: Identification	$\overline{X}$	***SD***	***t***	ρ
High-proficiency Participations	3.58	0.99	1.57	.122
Low-proficiency Participations	3.83	0.69		

Table 4.42 illustrates the comparison of 2nd round of the self-evaluation score reported through Can-do Statement Checklist in DDL: Identification process of the high-proficiency participations and the low-proficiency participations. The result of *t*-test computed on the high-proficiency participations' 2nd round self-evaluation score in Identification process ($\overline{X}$ = 3.58 and *SD* = 0.99) and that score of the low-proficiency participations ($\overline{X}$ = 3.83 and *SD* = 0.69) with *t* (1.57) shows the p-value 0.122 which is higher than 0.05 level of significance. This indicates that the 2nd round self-evaluation score in Identification process of the high-proficiency participants is not significantly different from the 2nd round self-evaluation score of the low-proficiency participants (the average score is 3.58 and 3.83 respectively).

Table 4.43 The Comparison of the 3rd Round of the Self-evaluation Score from Can-do Statement Checklist in Identification between the High-proficiency Participants and the Low Proficiency Participants

N=48

3rd Round Self-evaluation DDL: Identification	$\overline{X}$	*SD*	*t*	ρ
High-proficiency Participations	3.79	1.01	0.64	.528
Low-proficiency Participations	3.90	0.75		

Table 4.43 illustrates the comparison of the 3rd round of the self-evaluation score reported through Can-do Statement Checklist in DDL: Identification process of the high-proficiency participations and the low-proficiency participations. The result of *t*-test computed on the 3rd round of the self-evaluation score in Identification process of the high-proficiency participants ($\overline{X}$ = 3.79 and *SD* = 1.01) and that score of the low-proficiency participations ($\overline{X}$ = 3.90 and *SD* = 0.79) with *t* (0.64) shows the p-value 0.528 which is higher than 0.05 level of significance. This indicates that the 3rd round of the self-evaluation score in Identification process of the high-proficiency participants is not significantly different from the 3rd round of the self-evaluation score of the low-proficiency participants (the average score is 3.79 and 3.90 respectively).

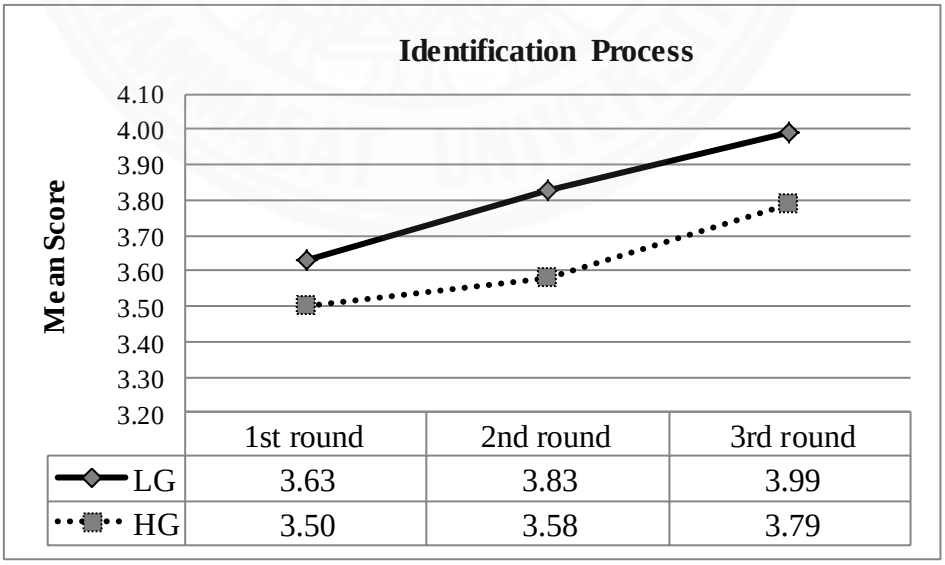


Figure 4.5 The Comparison of the 1st round, the 2nd round, and the 3rd round Self-evaluation Average Score from Can-do Statement Checklist in Identification Process of Low-proficiency Participants and High-proficiency Participants

The Figure 4.5 shows the comparison of the average self-evaluation score collected from the Can-do Statement Checklist regarding the 'Identification' process of DDL between the high-proficiency participants and the low-proficiency participants over the three rounds of the self-evaluation. According to the line graph shown in Figure 4.5, all of average scores of the low-proficiency participants (i.e. the 1st round = 3.63, the 2nd round = 3.83, and the 3rd round = 3.99) are slightly higher than those score of the high-proficiency participants (i.e. the 1st round = 3.50, the 2nd round = 3.58, and the 3rd round = 3.79). However, these scores are not significantly different and all of them are categorized in the same level which is 'Understand'. This means both high-proficiency participants and low-proficiency participants reported that they understand the Identification step of DDL over the three times of evaluations.

4.3.3 The summary of the findings regarding the comparison between low-proficiency and high-proficiency Thai EFL students' self-evaluation on their ability to follow Identification step of DDL

The findings elicited from Can-do Statement Checklist the comparison between low-proficiency and high-proficiency Thai EFL students' self-evaluation on their ability to follow Identification step of DDL show that the average score of the 1st self-evaluation of the high-proficiency participants ($\overline{X}$ = 3.50) is not significantly different from that score of the low-proficiency participants ($\overline{X}$ = 3.63) and both of them are in the level of 'Understand'. Like in the first round of self-evaluation, there is no significant difference between the 2nd round self-evaluation score in Identification step of the high-proficiency ($\overline{X}$ = 3.58) and that score of the low-proficiency ($\overline{X}$ = 3.83) and they all indicate the same level of 'Understand'. The comparison data between the 3rd round self-evaluation score in Identification step of the high-proficiency participants ($\overline{X}$ = 3.79) and that score of the low-proficiency participants ($\overline{X}$ = 3.99) shows that these two average evaluation scores are not significantly different and both of them are in the level of 'Understand'.

Table 4.44 The Comparison of Self-evaluation Score between the 1st round and the 2nd round of Can-do Statement Checklist in Classifications Process of the High-proficiency Participants

N=48

DDL: Classification Self-evaluation Round	$\overline{X}$	*SD*	*t*	ρ
1st Round	3.25	1.10	0.43	.673
2nd Round	3.31	1.04		

Table 4.44 illustrates the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Classification process of the high-proficiency participations during the 1st round and the 2nd round evaluation. The result of *t*-test computed on the high-proficiency participations' self-evaluation score comparing the 1st round ($\overline{X}$ = 3.25 and *SD* = 1.10) and the 2nd round ($\overline{X}$ = 3.31 and *SD* = 1.04) regarding Classification process with *t* (0.43) shows the p-value 0.673 which is higher than 0.05 level of significance. This indicates that for the high-proficiency participants, the 1st round self-evaluation score of Classification process is not significantly different from the 2nd round self-evaluation of the same process (the average score is 3.25 and 3.31 respectively).

Table 4.45 The Comparison of Self-evaluation Score between the 2nd round and the 3rd round of Can-do Statement Checklist in Classification Process of the High-proficiency Participants

N=48

DDL: Classification Self-evaluation Round	$\overline{X}$	*SD*	*t*	ρ
2nd Round	3.31	1.04	2.61*	0.012
3rd Round	3.63	1.02		

Table 4.45 shows the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Classification process of the high-proficiency participations during the 2nd round and the 3rd round evaluation. The result of *t*-test computed on the high-proficiency participations' self-evaluation score comparing the 2nd round ($\overline{X}$ = 3.31 and *SD* = 1.04) and the 3rd round ($\overline{X}$ = 3.63 and *SD* = 1.02)

regarding Classification process with *t* (2.61) shows the p-value 0.012 which is lower than 0.05 level of significance. This indicates that for the high-proficiency participants, the self-evaluation score of Classification process in the 3rd round is significantly higher than the self-evaluation score of the same process in the 2nd round (the average score is 3.63 and 3.31 respectively).

Table 4.46 The Comparison of the Self-evaluation Score between the 1st round and the 3rd round of Can-do Statement Checklist in Classification Process of the High-proficiency Participants

N=48

DDL: Classification Self-evaluation Round	$\overline{X}$	*SD*	*t*	ρ
1st Round	3.25	1.01	2.49*	0.016
3rd Round	3.63	1.02		

Table 4.46 illustrates the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Classification process of the high-proficiency participations during the 1st round and the 3rd round evaluation. The result of *t*-test computed on the high-proficiency participations' self-evaluation score comparing the 1st round ($\overline{X}$ = 3.25 and *SD* = 1.01) and the 3rd round ($\overline{X}$ = 3.63 and *SD* = 1.02) regarding Classification process with *t* (2.49) shows the p-value 0.016 which is lower than 0.05 level of significance. This indicates that for the high-proficiency participants, self-evaluation score of Classification process in the 3rd round is significantly higher than the self-evaluation score of the same process in the 1st round (the average score is 3.63 and 3.25 respectively).

Table 4.47 The Comparison of 1st round, 2nd round, and 3rd round Self-evaluation Score from Can-do Statement Checklist in Classification Process of the High-proficiency Participants

Self-Evaluation Can-do Statement	Source of Variances	df	SS	MS	F	ρ
Classification	Between Groups	2	3.875	1.938	1.74	0.18
	Within Group	141	156.563	1.110		
	Total	143	160.438			

Table 4.47 illustrates the comparison of the 1st, 2nd, 3rd round of the self-evaluation score reported through Can-do Statement Checklist in Classification Process of the high-proficiency participants. The result of one-way ANOVA determined the self-evaluation scores among these three rounds (with F = 1.74) shows the p-value of 0.18 which is higher than the level of significance (p = 0.05). This suggests that there are no statistically significant differences among the 1st, 2nd, and 3rd round of self-evaluation scores obtained from Can-do Statement Checklist in Classification Process of the high-proficiency participants.

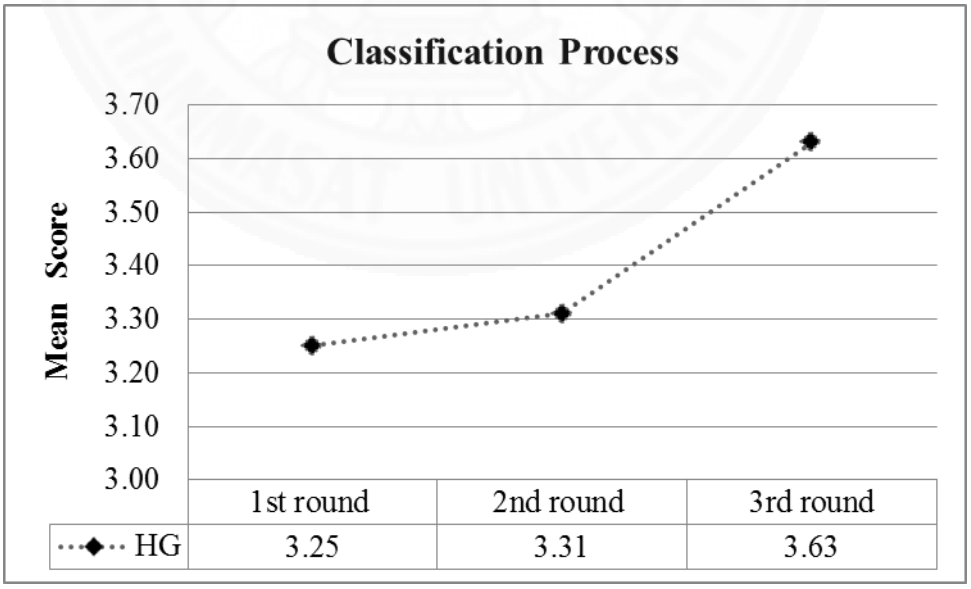


Figure 4.6: The Comparison of the Self-evaluation Score among 1st round, 2nd round, and 3rd round of Can-do Statement Checklist in Classification Process of the High-proficiency Participants

The Figure 4.6 illustrates the comparison of the average score among the 1st round, the 2nd round, and the 3rd round of the self-evaluation from Can-do Statement Checklist regarding 'Classification' process of the high-proficiency participants. Based on the line graph shown in Figure 4.6, the average scores of the self-evaluation in 'Classification' process of the high-proficiency participants are continuously increased over the three times of evaluations. The average score of the 1st round of the self-evaluation is 3.25 and this score slightly risen in the second time of the self-evaluation ($\overline{X}$ = 3.31). In the 3rd round of the self-evaluation, the average score ($\overline{X}$ = 3.63) is a lot higher and this average score is the highest score among the three times of the self-evaluations. In spite of the increase in the average score over the three times of the evaluation, all of these average scores (i.e. $\overline{X}$ = 3.25, $\overline{X}$ = 3.31, and $\overline{X}$ = 3.63) are classified in the level of 'Understand' based on the DDL description of ability from the Can-do Statement Checklist. That is to say, the high-proficiency participants only reported that they understand the 'Classification' step of DDL over the three times of evaluations.

4.3.4 The summary of the findings about high-proficiency Thai EFL students' self-evaluation on their ability to follow Classification step of DDL

The findings elicited from Can-do Statement Checklist of high-proficiency Thai EFL students' self-evaluation on their ability to follow Classification step of DDL reveal that they evaluate their understanding about Classification step of DDL at the level of 'Understand' ($\overline{X}$ = 3.25) at the 1st round of the self-evaluation, and when compared the 1st self-evaluation score to the 2nd self-evaluation score ($\overline{X}$ = 3.31), the comparison data show no significant difference between these two average scores and both of them are in the level of 'Understand'. The average score of the 3rd round of self-evaluation ($\overline{X}$ = 3.63) is sharply increased from the 2nd round of self-evaluation and it is significantly higher than the average self-evaluation score of the 2nd round; however, both of these average scores are in the same level of understanding which is 'Understand'. Additionally, the comparison of the average score among the 1st round ($\overline{X}$ = 3.25), the 2nd round ($\overline{X}$ = 3.31), and the 3rd round ($\overline{X}$ = 3.63) of the self-evaluation score regarding Classification step of the high-proficiency participants through the application of one-way ANOVA reveals that there is no

statistically significant difference among the 1st, 2nd, and 3rd round of self-evaluation scores and all of them indicate the same level of understanding which is 'Understand'.

Table 4.48 The Comparison of Self-evaluation Score between the 1st round and the 2nd Round of Can-do Statement Checklist in Classification Process of the Low-proficiency Participants

N=48

DDL: Classification Self-evaluation Round	$\overline{X}$	*SD*	*t*	ρ
1st Round	3.67	0.66	1.24	0.221
2nd Round	3.83	0.72		

Table 4.48 illustrates the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Classification process of low-proficiency participations during the 1st round and the 2nd round evaluation. The result of *t*-test computed on the low-proficiency participations' self-evaluation score comparing the 1st round ($\overline{X}$ = 3.67 and *SD* = 0.66) and the 2nd round ($\overline{X}$ = 3.83 and *SD* = 0.72) regarding Classification process with *t* (1.24) shows the p-value 0.221 which is higher than 0.05 level of significance. This indicates that for the low-proficiency participants, the 1st round self-evaluation score of Classification process is not significantly different from the 2nd round self-evaluation score of the same process (the average score is 3.67 and 3.83 respectively).

Table 4.49 The Comparison of Self-evaluation Score between the 2nd round and the 3rd round of Can-do Statement Checklist in Classification Process of the Low-proficiency Participants

N=48

DDL: Classification Self-evaluation Round	$\overline{X}$	*SD*	*t*	ρ
2nd Round	3.83	0.72	1.543	0.130
3rd Round	4.02	0.79		

Table 4.47 shows the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Classification process of the low-proficiency

participations during the 2nd round and the 3rd round evaluation. The result of *t*-test computed on the low-proficiency participations' self-evaluation score comparing the 2nd round ($\overline{X}$ = 3.83 and *SD* = 0.72) and the 3rd round ($\overline{X}$ = 4.02 and *SD* = 0.79) regarding Classification process with *t* (1.54) shows the p-value 0.130 which is higher than 0.05 level of significance. This indicates that for the low-proficiency participants, the 2nd round self-evaluation score of Classification process is not significantly different from the 3rd round self-evaluation score of the same process (the average score is 3.83 and 4.02 respectively).

Table 4.50 The Comparison of Self-evaluation Score between the 1st round and 3rd round of Can-do Statement Checklist in Classification Process of the Low-proficiency Participants

N=48

DDL: Classification Self-evaluation Round	$\overline{X}$	***SD***	***t***	ρ
1st Round	3.67	0.66	2.51*	0.016
3rd Round	4.02	0.79		

Table 4.50 illustrates shows the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Classification process of the low-proficiency participations during the 1st round and the 3rd round evaluation. The result of *t*-test computed on the low-proficiency participations' self-evaluation score comparing the 1st round ($\overline{X}$ = 3.67 and *SD* = 0.66) and the 3rd round ($\overline{X}$ = 4.02 and *SD* = 0.79) regarding Classification process with *t* (2.51) shows the p-value 0.016 which is lower than 0.05 level of significance. This indicates that for the low-proficiency participants, the self-evaluation score of Classification process in the 3rd round is significantly higher than the self-evaluation of the same process in t he 1st round (the average score is 4.02 and 3.67 respectively).

Table 4.51 The Comparison of 1st round, 2nd round, and 3rd round Self-evaluation Score from Can-do Statement Checklist in Classification Process of the Low-proficiency Participants

Self-Evaluation Can-do Statement	Source of Variances	df	SS	MS	F	ρ
Classification	Between Groups	2	3.014	1.507	2.86	0.06
	Within Group	141	74.313	0.527		
	Total	143	77.326			

Table 4.51 illustrates the comparison of the 1st, 2nd, 3rd round of the self-evaluation score reported through Can-do Statement Checklist in Classification Process of the low-proficiency participants. The result of one-way ANOVA determined the self-evaluation scores among these three rounds (with F = 2.86) shows the p-value of 0.06 which is higher than the level of significance (p = 0.05). This suggests that there are no statistically significant differences among the 1st, 2nd, and 3rd round of self-evaluation scores obtained from Can-do Statement Checklist in Classification Process of the low-proficiency participants.

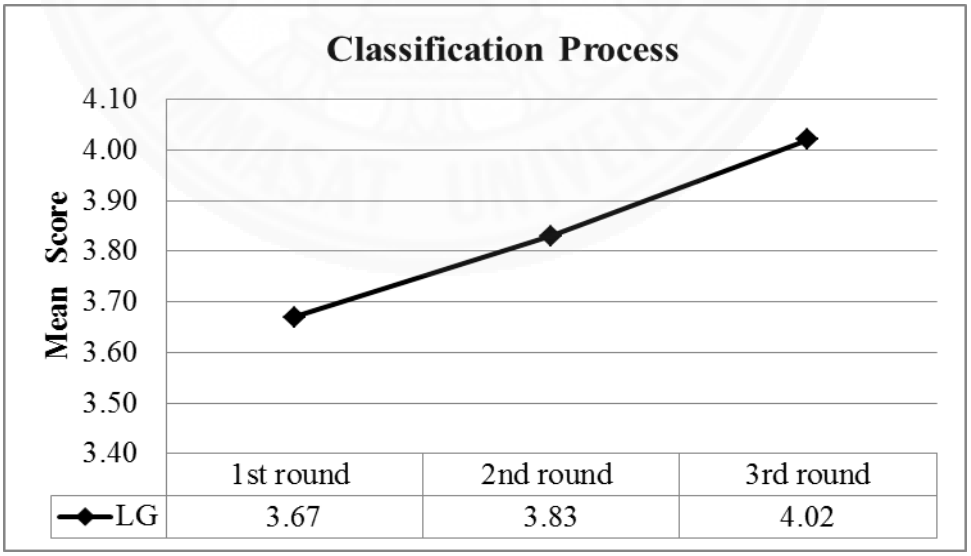


Figure 4.7: The Comparison of the Self-evaluation Score among 1st round, 2nd round, and 3rd round of Can-do Statement Checklist in Classification Process of the Low-proficiency Participants

The Figure 4.7 illustrates the comparison of the average score among the 1st round, the 2nd round, and the 3rd round of the self-evaluation from Can-do Statement Checklist regarding 'Classification' process of the low-proficiency participants. According to the line graph shown in Figure 4.7, the average scores of the self-evaluation in 'Classification' process of the low-proficiency participants have continuously risen over the three times of evaluations. The average score of the 1st round of the self-evaluation is 3.67 and this score slightly risen in the second time of the self-evaluation ($\overline{X}$ = 3.82). In the 3rd round of the self-evaluation, the average score ($\overline{X}$ = 4.02) is a lot higher and this average score is the highest score when compared to the scores from the 1st round and the 2nd round of self-evaluation. Despite the increase in the average score over the three times of the evaluation, all of these average scores (i.e. $\overline{X}$ = 3.67, $\overline{X}$ = 3.82, and $\overline{X}$ = 4.02) are classified in the level of 'Understand' based on the DDL description of ability from the Can-do Statement Checklist. That means the low-proficiency participants only reported that they understand the 'Classification' step of DDL over the three times of evaluations.

4.3.5 The summary of the findings about low-proficiency Thai EFL students' self-evaluation on their ability to follow Classification step of DDL

The findings elicited from Can-do Statement Checklist of Thai EFL students' self-evaluation on their ability to follow Classification step of DDL reveal that the low-proficiency participants evaluate their understanding about Classification step of DDL at the level of 'Understand' ($\overline{X}$ = 3.67) at the 1st round of the self-evaluation, and when compared the 1st self-evaluation score to the 2nd self-evaluation score ($\overline{X}$ = 3.82), the comparison data show no significant difference between these two average scores and both of them are in the level of 'Understand'. The average score of the 3rd round of self-evaluation ($\overline{X}$ = 4.02) is slightly increased from the 2nd round of self-evaluation but it is not significantly different from the average self-evaluation score of the 2nd round, and both of these average scores are in the same level of understanding which is 'Understand'. Additionally, the comparison of the average score among the 1st round ($\overline{X}$ = 3.67), the 2nd round ($\overline{X}$ = 3.82), and the 3rd round ($\overline{X}$ = 4.02) of the self-evaluation score regarding Classification step of the low-proficiency participants through the application of one-way ANOVA shows that there is no statistically significant difference among the 1st, 2nd, and 3rd round of self-

evaluation scores and all of them indicate the same level of understanding which is 'Understand'.

Table 4.52 The Comparison of the 1st Round Self-evaluation Score from Can-do Statement Checklist in Classification Process between the High-proficiency Participants and the Low Proficiency Participants

N=48

1st Round Self-evaluation DDL: Classification	$\overline{X}$	*SD*	*t*	ρ
High-proficiency Participations	3.25	1.10	2.48*	.017
Low-proficiency Participations	3.67	0.66		

Table 4.52 illustrates the comparison of the 1st round self-evaluation score reported through Can-do Statement Checklist in DDL: Classification process of the high-proficiency participations and the low-proficiency participations. The result of *t*-test computed on the high-proficiency participations' 1st round self-evaluation score in Classification process ($\overline{X}$ = 3.25 and *SD* = 1.10) and that score of the low-proficiency participations ($\overline{X}$ = 3.67 and *SD* = 0.66) with *t* (2.48) shows the p-value 0.017 which is lower than 0.05 level of significance. This indicates that the high-proficiency participations' 1st round self-evaluation score in classification process is significantly lower than the low-proficiency participations' 1st round self-evaluation score in the same process (the average score is 3.25 and 3.67 respectively).

Table 4.53 The Comparison of the 2nd Round Self-evaluation Score from Can-do Statement Checklist in Classification between the High-proficiency Participants and the Low Proficiency Participants

N=48

2nd Round Self-evaluation DDL: Classification	*M*	*SD*	*t*	ρ
High-proficiency Participations	3.31	1.04	2.88*	.006
Low-proficiency Participations	3.83	0.72		

Table 4.53 illustrates the comparison of the 2nd round self-evaluation score reported through Can-do Statement Checklist in DDL: Classification process of the high-

proficiency participations and the low-proficiency participations. The result of *t*-test computed on the high-proficiency participations' 2nd round self-evaluation score in Classification process ($\overline{X}$ = 3.31 and *SD* = 1.04) and that score of the low-proficiency participations ($\overline{X}$ = 3.83 and *SD* = 0.72) with *t* (2.88) shows the p-value 0.006 which is lower than 0.05 level of significance. This indicates that the high-proficiency participations' 2nd round self-evaluation score in Classification process is significantly lower than the low-proficiency participations' 2nd round self-evaluation score (the average score is 3.31 and 3.83 respectively).

Table 4.54 The Comparison of the 3rd Round Self-evaluation Score from Can-do Statement Checklist in Classification between the High-proficiency Participants and the Low Proficiency Participants

N=48

3rd Round Self-evaluation DDL: Classification	$\overline{X}$	***SD***	***t***	ρ
High-proficiency Participations	3.63	1.02	2.14*	.038
Low-proficiency Participations	4.02	0.79		

Table 4.54 illustrates the comparison of the 3rd round self-evaluation score reported through Can-do Statement Checklist in DDL: Classification process of the high-proficiency participations and the low-proficiency participations. The result of *t*-test computed on the high-proficiency participations' 3rd round self-evaluation score in Classification process ($\overline{X}$ = 3.63 and *SD* = 1.02) and that score of the low-proficiency participations ($\overline{X}$ = 4.02 and *SD* = 0.79) with *t* (2.14) shows the p-value 0.038 which is lower than 0.05 level of significance. This indicates that the 3rd round self-evaluation score in Classification process of the high-proficiency participants is significantly lower than the 3rd round self-evaluation score of the low-proficiency participants (the average score is 3.63 and 4.02 respectively).

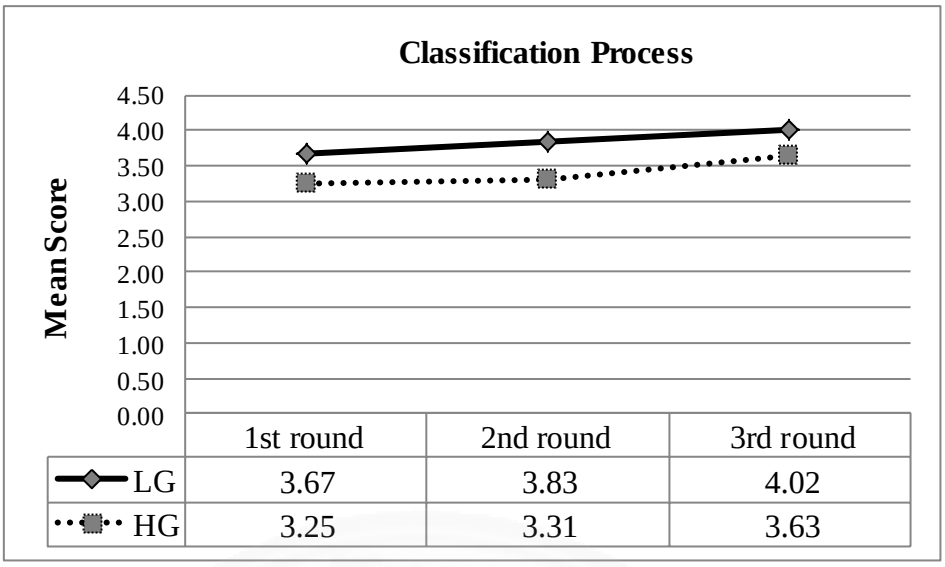


Figure 4.8 The Comparison of the 1st round, the 2nd round, and the 3rd round Self-evaluation Average Score from Can-do Statement Checklist in Classification Process of the Low-proficiency Participants and the High-proficiency Participants

The Figure 4.8 shows the comparison of the average score collected from the Can-do Statement Checklist regarding the Classification process of DDL between the high-proficiency participants and the low-proficiency participants over the three rounds of the self-evaluation. According to the line graph shown in Figure 4.8, all of average scores of the low-proficiency participants (i.e. the 1st round = 3.67, the 2nd round = 3.83, and the 3rd round = 4.02) are slightly higher than those score of the high-proficiency participants (i.e. the 1st round = 3.25, the 2nd round = 3.31, and the 3rd round = 4.63). However, these scores are not significantly different, and all of them are categorized in the level of 'Understand'. That is to say both high-proficiency participants and low-proficiency participants reported that they understand the Classification step of DDL over the three times of evaluations.

4.3.6 The summary of the findings regarding the comparison between low-proficiency and high-proficiency Thai EFL students' self-evaluation on their ability to follow Classification step of DDL

The findings elicited from Can-do Statement Checklist the comparison between low-proficiency and high-proficiency Thai EFL students' self-

evaluation on their ability to follow Classification step of DDL show that the average score of the 1st self-evaluation of the high-proficiency participants ($\overline{X}$ = 3.25) is significantly lower than that score of the low-proficiency participants ($\overline{X}$ = 3.67) but both of them are in the level of 'Understand'. Similar to the first round of self-evaluation, there is a significant difference between the 2nd round self-evaluation score in classification step of the high-proficiency ($\overline{X}$ = 3.31) and that score of the low-proficiency ($\overline{X}$ = 3.83). That is the self-evaluation score of the high-proficiency participants is significantly lower than that score of the low-proficiency participants, but both of these evaluation scores indicate the same level of 'Understand'. The comparison data between the 3rd round self-evaluation score in Classification step of the high-proficiency participants ($\overline{X}$ = 3.63) and that score of the low-proficiency participants ($\overline{X}$ = 4.02) also shows that the evaluation score of the high-proficiency participants are significantly lower than the evaluation score of the low-proficiency participants, but both of them are in the level of 'Understand'.

Table 4.55 The Comparison of the Self-evaluation Score between the 1st round and the 2nd round of Can-do Statement Checklist in Generalization Process of the High-proficiency Participants

N=48

DDL: Generalization Self-evaluation Round	$\overline{X}$	***SD***	***t***	ρ
1st Round	2.85	1.09	4.26*	.000
2nd Round	3.29	1.09		

Table 4.55 illustrates the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Generalization process of the high-proficiency participations during the 1st round and the 2nd round evaluation. The result of *t*-test computed on the high-proficiency participations' self-evaluation score comparing the 1st round ($\overline{X}$ = 2.85 and *SD* = 1.09) and the 2nd round ($\overline{X}$ = 3.29 and *SD* = 1.09) regarding Generalization process with *t* (4.26) shows the p-value 0.000 which is lower than 0.05 level of significance. This indicates that for the high-proficiency participants, the self-evaluation score of Generalization process in the 2nd round is

significantly higher than the self-evaluation of the same process in the 1st round (the average score is 3.29 and 2.85 respectively).

Table 4.56 The Comparison of the Self-evaluation Score between the 2nd round and the 3rd round of Can-do Statement Checklist in Generalization Process of the High-proficiency Participants

N=48

DDL: Generalization Self-evaluation Round	$\overline{X}$	*SD*	*t*	ρ
2nd Round	3.29	1.09	7.19*	.000
3rd Round	3.85	1.03		

Table 4.56 shows the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Generalization process of the high-proficiency participations during the 2nd round and the 3rd round evaluation. The result of *t*-test computed on the high-proficiency participations' self-evaluation score comparing the 2nd round ($\overline{X}$ = 3.29 and *SD* = 1.09) and the 3rd round ($\overline{X}$ = 3.85 and *SD* = 1.03) regarding Generalization process with *t* (7.19) shows the p-value 0.000 which is lower than 0.05 level of significance. This indicates that for the high-proficiency participants, the self-evaluation score of Generalization process in the 3rd round is significantly higher than the self-evaluation of the same process in the 2nd round (the average score is 3.85 and 3.29 respectively).

Table 4.57 The Comparison of Self-evaluation Score between the 1st round and the 3rd round of Can-do Statement Checklist in Generalization Process of the High-proficiency Participants

N=48

DDL: Generalization Self-evaluation Round	$\overline{X}$	*SD*	*t*	ρ
1st Round	2.85	1.09	10.62*	.000
3rd Round	3.85	1.03		

Table 4.57 illustrates the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Generalization process of the high-proficiency

participations during the 1st round and the 2nd round evaluation. The result of *t*-test computed on the high-proficiency participations' self-evaluation score comparing the 1st round ($\overline{X}$ = 2.85 and *SD* = 1.09) and the 2nd round ($\overline{X}$ = 3.85 and *SD* = 1.03) regarding Generalization process with *t* (10.61) shows the p-value 0.000 which is lower than 0.05 level of significance. This indicates that for the high-proficiency participants, the self-evaluation score of Generalization process in the 3rd round is significantly higher than the self-evaluation of the same process in the 1st round (the average score is 3.85 and 2.85 respectively).

Table 4.58 The Comparison of the Self-evaluation Score among 1st round, 2nd round, and 3rd round of Can-do Statement Checklist in Generalization Process of the High-proficiency Participants

Self-Evaluation Can-do Statement	Source of Variances	df	SS	MS	F	ρ
Identification	Between Groups	2	24.125	12.06	10.51*	0.00
	Within Group	141	161.875	1.15		
	Total	143	186.00			

Table 4.58 illustrates the comparison of the 1st, 2nd, 3rd round of the self-evaluation score reported through Can-do Statement Checklist in Generalization Process of the high-proficiency participants. The result of one-way ANOVA determined the self-evaluation scores among these three rounds of the evaluations (with F = 10.51) shows the p-value of 0.00 which is lower than the level of significance (p = 0.05). This suggests that there are statistically significant differences among the 1st, 2nd, and 3rd round of the self-evaluation scores obtained from Can-do Statement Checklist in Generalization Process of the high-proficiency participants. Therefore, the multiple comparison test (Scheffe's method) needs to be utilized to comprehensively determine such differences.

Table 4.59 The Pair Comparison of Average Score of Self-evaluation Score among 1st round, 2nd round, and 3rd round of Can-do Statement Checklist in Generalization Process of High-proficiency Participants (Scheffe's method)

Can-do Statement Checklist	2nd Round (M =3.29)	3rd Round (M =3.85)
1st Round (M = 2.85)	-.438	-1.00*
2nd Round		-.563*

Table 4.59 reveals that the average score of the 3rd round of Can-do Statement Checklist in Generalization of the high-proficiency participants is significantly higher than that score of the 1st round (the average score is 3.85 and 2.85 respectively). Additionally when comparing the average score of the 3rd round of Can-do Statement Checklist in Generalization of the high-proficiency participants to that score of the 2nd round utilizing the Scheffe's method, the statistic shows that the 3rd round of Can-do Statement Checklist in Generalization of the high-proficiency participants is also significantly higher than that score of the 2nd round (the average score is 3.85 and 3.29 respectively).

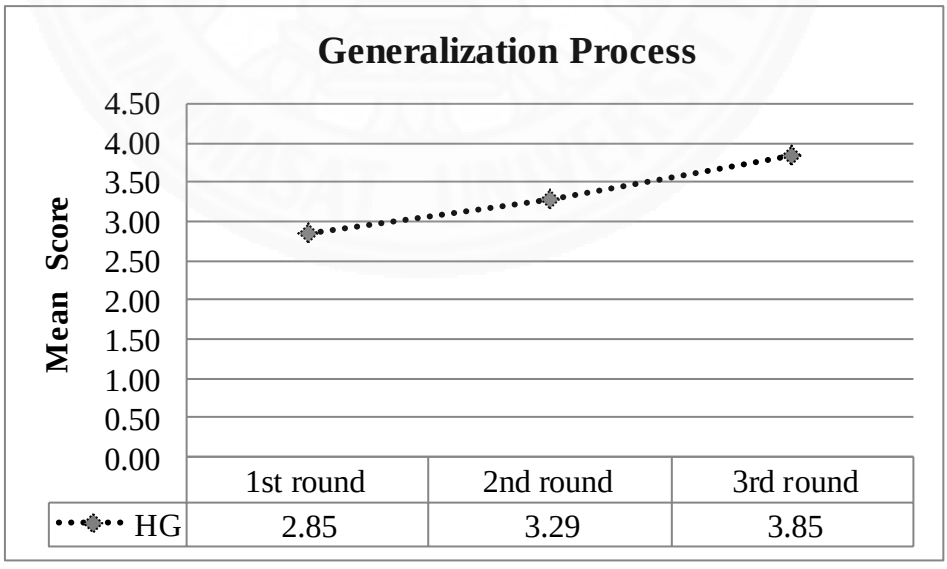


Figure 4.9: The Comparison of Self-evaluation Score among 1st round, 2nd round, and 3rd round of Can-do Statement Checklist in Generalization Process of High-proficiency Participants

The Figure 4.9 illustrates the comparison of the average score among the 1st round, the 2nd round, and the 3rd round of the self-evaluation from Can-do Statement Checklist regarding Generalization step of the high-proficiency participants. According to the line graph show in the Figure 4.9, the average scores of the self-evaluation in Generalization step of the high-proficiency participants are continuously risen over the three times of evaluations. The average score of the 1st round of the self-evaluation is 2.85 and this score significantly increased in the second time of the self-evaluation ($\overline{X}$ = 3.25). In the 3rd round of the self-evaluation, the average score ($\overline{X}$ = 3.85) is higher than that scores in 2nd and 3rd round and this average score is the highest among the three times of the self-evaluations. Interestingly, the average score of the first evaluation only reports that the high-proficiency participants moderately understand the Generalization step of DDL; however, this score significantly increases to 3.25 in the second evaluation and it indicates that they understand more about the Generalization step. In the third evaluation, the high-proficiency the average score is still risen, but it is classified in the level of Understand. In other words, the high-proficiency participants reported that their ability in the Generalization step of DDL is significantly developed over the three times of their self-evaluation.

4.3.7 The summary of the findings about high-proficiency Thai EFL students' self-evaluation on their ability to follow Generalization step of DDL

The findings elicited from Can-do Statement Checklist of high-proficiency Thai EFL students' self-evaluation on their ability to follow Generalization step of DDL reveal that the 1st round of the self-evaluation score ($\overline{X}$ = 2.85) is significantly lower than that score of 2nd evaluation ($\overline{X}$ = 3.29) and these two averages scores do not indicate the same level of understanding. That is the 1st self-evaluation score is in the level of 'Moderately Understand', while the 2nd self-evaluation score indicates the level of 'Understand'. Like the comparison between the 1st self-evaluation score and the 2nd self-evaluation score, the comparison between the 2nd self-evaluation score ($\overline{X}$ = 3.29) and the 3rd self-evaluation score ($\overline{X}$ = 3.85) also demonstrates a significant difference. In other words, the average score in the 3rd round of the evaluation is significantly higher than that score in the 2nd evaluation; however, both of the average scores in the 2nd and the 3rd self-evaluation are in the same level of understanding which is 'Understand'.

Table 4.60 The Comparison of the Self-evaluation Score between the 1st round and the 2nd Round of Can-do Statement Checklist in Generalization Process of the Low-proficiency Participants

N=48

DDL: Generalization Self-evaluation Round	$\overline{X}$	*SD*	*t*	ρ
1st Round	3.56	0.85	0.275	.785
2nd Round	3.60	0.68		

Table 4.60 illustrates the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Generalization process of the low-proficiency participations during the 1st round and the 2nd round evaluation. The result of *t*-test computed on the low-proficiency participations' self-evaluation score comparing the 1st round ($\overline{X}$ = 3.56 and *SD* = 0.85) and the 2nd round ($\overline{X}$ = 3.83 and *SD* = 0.68) regarding Generalization process with *t* (0.26) shows the p-value 0.785 which is higher than 0.05 level of significance. This indicates that for the low-proficiency participants, the self-evaluation score of Generalization process in the 1st round is not significantly different from the self-evaluation score of the same process in the 2nd round (the average score is 3.56 and 3.60 respectively).

Table 4.61 The Comparison of the Self-evaluation Score between the 2nd round and the 3rd round of Can-do Statement Checklist in Generalization Process of Low-proficiency Participants

N=48

DDL: Generalization Self-evaluation Round	$\overline{X}$	*SD*	*t*	ρ
2nd Round	3.60	0.68	1.36	.181
3rd Round	3.75	0.76		

Table 4.61 shows the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Generalization process of the low-proficiency participations during the 2nd round and the 3rd round evaluation. The result of *t*-test computed on the low-proficiency participations' self-evaluation score comparing the 2nd round ($\overline{X}$ = 3.60 and *SD* = 0.68) and the 3rd round ($\overline{X}$ = 3.75 and *SD* = 0.76)

regarding Generalization process with *t* (1.36) shows the p-value 0.181 which is higher than 0.05 level of significance. This indicates that for the low-proficiency participants, the self-evaluation score of Generalization process in the 2nd round is not significantly different from the self-evaluation score of the same process in the 3rd round (the average score is 3.60 and 3.75 respectively).

Table 4.62 The Comparison of the Self-evaluation Score between the 1st round and 3rd round of Can-do Statement Checklist in Generalization Process of the Low-proficiency Participants

N=48

DDL: Generalization Self-evaluation Round	$\bar{X}$	*SD*	*t*	ρ
1st Round	3.56	0.85	1.20	.237
3rd Round	3.75	0.76		

Table 4.62 illustrates the comparison of the self-evaluation score reported through Can-do Statement Checklist in DDL: Classification process of the low-proficiency participations during the 1st round and the 3rd round evaluation. The result of *t*-test computed on the low-proficiency participations' self-evaluation score comparing the 1st round ($\bar{X}$ = 3.56 and *SD* = 0.85) and the 3rd round ($\bar{X}$ = 3.75 and *SD* = 0.76) regarding Classification process with *t* (1.20) shows the p-value 0.237which is higher than 0.05 level of significance. This indicates that for the low-proficiency participants, the self-evaluation score of Classification process in the 3rd round is not significantly different from the self-evaluation of the same process in the 1st round (the average score is 3.75 and 3.56 respectively).

Table 4.63 The Comparison of Self-evaluation Score among 1st round, 2nd round, and 3rd round of Can-do Statement Checklist in Generalization Process of the Low-proficiency Participants

Self-Evaluation Can-do Statement	Source of Variances	df	SS	MS	F	ρ
Generalization	Between Groups	2	0.931	0.465	0.79	0.45
	Within Group	141	82.292	0.584		
	Total	143	83.222			

Table 4.63 illustrates the comparison of the 1st, 2nd, 3rd round of the self-evaluation score reported through Can-do Statement Checklist in Classification Process of the low-proficiency participants. The result of one-way ANOVA determined the self-evaluation scores among these three rounds (with F = 0.79) shows the p-value of 0.45 which is higher than the level of significance (p = 0.05). This suggests that there are no statistically significant differences among the 1st, 2nd, and 3rd round of self-evaluation scores obtained from Can-do Statement Checklist in Generalization Process of the low-proficiency participants.

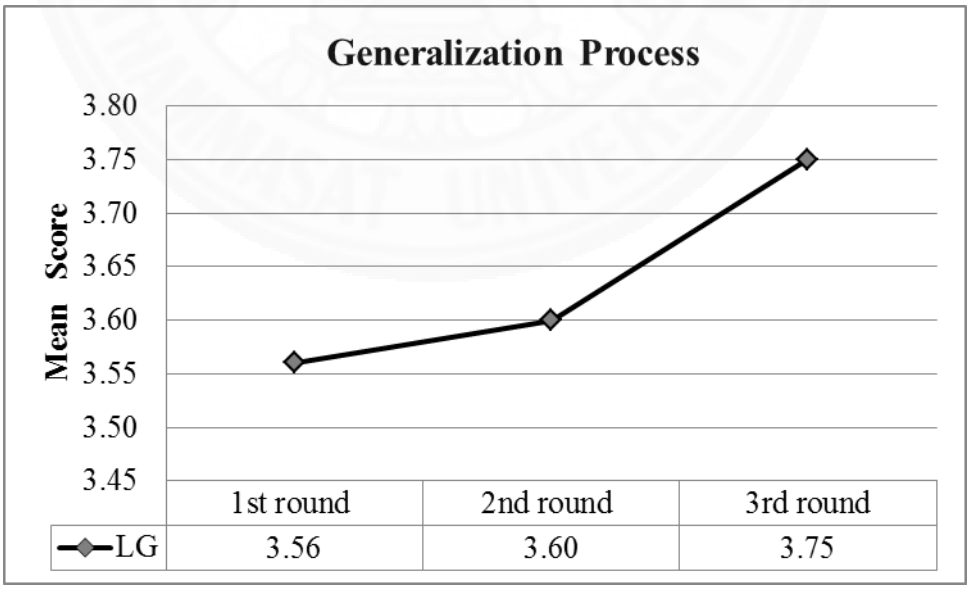


Figure 4.10 The Comparison of the Self-evaluation Score among the 1st round, the 2nd round, and the 3rd round of Can-do Statement Checklist in Generalization Process of Low-proficiency Participants

The Figure 4.10 illustrates the comparison of the average score among the 1st round, the 2nd round, and the 3rd round of the self-evaluation from Can-do Statement Checklist regarding 'Generalization' process of the low-proficiency participants. According to the line graph shown in Figure 4.10, the average scores of the self-evaluation in 'Generalization' process of the low-proficiency participants have continuously risen over the three times of evaluations. The average score of the 1st round of the self-evaluation is 3.56 and this score is slightly increased in the second time of the self-evaluation ($\overline{X}$ = 3.60). In the 3rd round of the self-evaluation, the average score ($\overline{X}$ = 3.75) is a little bit higher and this average score is the highest score when compared to those score from the 1st round and the 2nd round of the self-evaluation. Despite the increase in the average score over the three times of the evaluation, all of these average scores (i.e. $\overline{X}$ = 3.56, $\overline{X}$ = 3.60, and $\overline{X}$ = 3.75) are categorized in the level of 'Understand' based on the DDL description of ability from the Can-do Statement Checklist. This means the low-proficiency participants only reported that they understand the 'Generalization' step of DDL over the three times of evaluations.

4.3.8 The summary of the findings about low-proficiency Thai EFL students' self-evaluation on their ability to follow Generalization step of DDL

The findings elicited from Can-do Statement Checklist of Thai EFL students' self-evaluation on their ability to follow Generalization step of DDL reveal that the low-proficiency participants report their understanding about Generalization step of DDL at the level of 'Understand' ($\overline{X}$ =3.56) at the 1st round of the self-evaluation, and when compared the 1st self-evaluation score to the 2nd self-evaluation score ($\overline{X}$ = 3.60), the comparison data show no significant difference between these two average scores and both of them are in the level of 'Understand'. The average score of the 3rd round of self-evaluation ($\overline{X}$ = 3.75) is slightly increased from the 2nd round of the evaluation but it is not significantly different from the average self-evaluation score of the 2nd round, and both of these average scores are in the same level of understanding which is 'Understand'. Additionally, the comparison of the average score among the 1st round ($\overline{X}$ =3.56), the 2nd round ($\overline{X}$ = 3.60), and the 3rd round ($\overline{X}$ =3.75) of the self-evaluation score regarding Generalization step of the low-

proficiency participants through the application of one-way ANOVA shows that there is no statistically significant difference among the 1st, 2nd, and 3rd round of self-evaluation scores and all of them indicate the same level of understanding which is 'Understand'.

Table 4.64 The Comparison of the 1st Round Self-evaluation Score from Can-do Statement Checklist in Generalization Process between High-proficiency Participants and Low Proficiency Participants

N= 96

1st Round Self-evaluation DDL: Generalization	$\overline{X}$	*SD*	*t*	ρ
High-proficiency Participations	2.85	1.09	3.67*	.001
Low-proficiency Participations	3.56	0.85		

Table 4.64 illustrates the comparison of 1st round self-evaluation score reported through Can-do Statement Checklist in DDL: Generalization process of high-proficiency participations and low-proficiency participations. The result of *t*-test computed on the high-proficiency participations' 1st round self-evaluation score in Generalization process ($\overline{X}$ = 2.85 and *SD* = 1.09) and that score of the low-proficiency participations ($\overline{X}$ = 3.56 and *SD* = 0.85) with *t* (3.67) shows the p-value 0.001 which is lower than 0.05 level of significance. This indicates that the high-proficiency participations' 1st round self-evaluation score in classification process is significantly lower than the low-proficiency participations' 1st round self-evaluation score (the average score is 2.85 and 3.56 respectively).

Table 4.65 The Comparison of the 2nd Round Self-evaluation Score from Can-do Statement Checklist in Generalization between High-proficiency Participants and Low Proficiency Participants

N= 96

2nd Round Self-evaluation DDL: Generalization	$\overline{X}$	*SD*	*t*	ρ
High-proficiency Participations	3.29	1.09	1.91	.062
Low-proficiency Participations	3.60	0.68		

Table 4.65 illustrates the comparison of 2nd round self-evaluation score reported through Can-do Statement Checklist in DDL: Generalization process of high-proficiency participations and low-proficiency participations. The result of *t*-test computed on the high-proficiency participations' 2nd round self-evaluation score in Generalization process ($\overline{X}$ = 3.29 and *SD* = 1.09) and that score of the low-proficiency participations ($\overline{X}$ = 3.60 and *SD* = 0.68) with *t* (1.91) shows the p-value 0.062 which is higher than 0.05 level of significance. This indicates that the high-proficiency participations' 2nd round self-evaluation score in Classification process is not significantly different from the low-proficiency participations' 2nd round self-evaluation score (the average score is 3.29 and 3.60 respectively).

Table 4.66 The Comparison of the 3rd Round Self-evaluation Score from Can-do Statement Checklist in Generalization between High-proficiency Participants and Low Proficiency Participants

N= 96

3rd Round Self-evaluation DDL: Generalization	$\overline{X}$	***SD***	***t***	ρ
High-proficiency Participations	3.85	1.03	.55	.584
Low-proficiency Participations	3.75	0.76		

Table 4.66 illustrates the comparison of 3rd round self-evaluation score reported through Can-do Statement Checklist in DDL: Generalization process of high-proficiency participations and low-proficiency participations. The result of *t*-test computed on the high-proficiency participations' 3rd round self-evaluation score in Generalization process ($\overline{X}$ = 3.85 and *SD* = 1.03) and that score of the low-proficiency participations ($\overline{X}$ = 3.75 and *SD* = 0.76) with t (0.55) shows the p-value 0.584 which is higher than 0.05 level of significance. This indicates that the high-proficiency participations' 3rd round self-evaluation score in Generalization process is not significantly different from the low-proficiency participations' 3rd round self-evaluation score (the average score is 3.85 and 3.75 respectively).

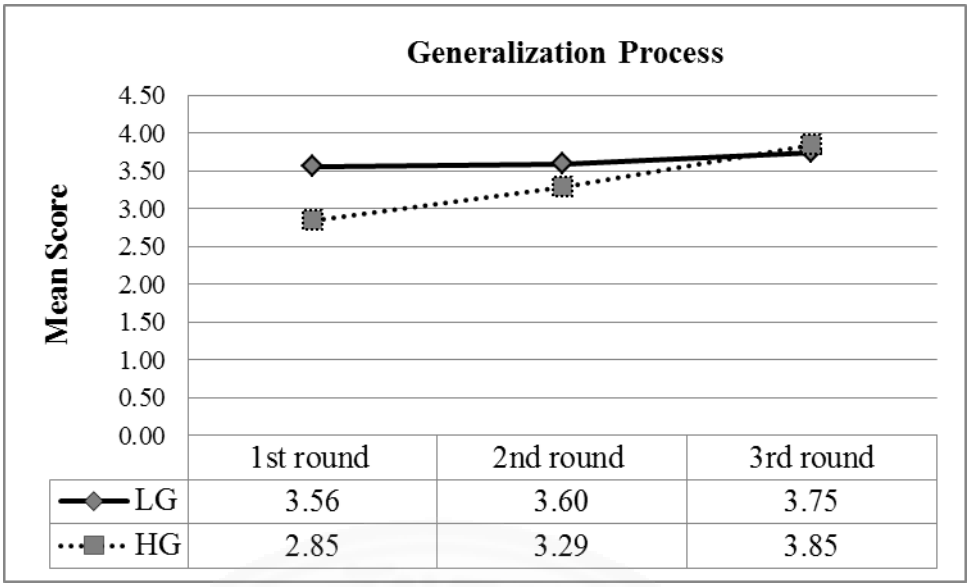


Figure 4.11 The Comparison of the 1st round, the 2nd round, and the 3rd round Self-evaluation Average Score from Can-do Statement Checklist in Generalization Process of Low-proficiency Participants and High-proficiency Participants

The figure 4.11 shows the comparison of the average score collected from the Can-do Statement Checklist regarding the Generalization step of DDL between the high-proficiency participants and the low-proficiency participants over the three rounds of the self-evaluation. According to the line graph, the average scores of the low-proficiency participants in the 1st round of evaluation ($\overline{X}$ = 3.56) is significantly higher than that score of the high-proficiency participants ($\overline{X}$ = 2.85). This difference also indicates that based on the level of understanding, the low-proficiency participants informed in the 1st round that they understand the Generalization step of DDL while the high-proficiency participants reported that they partially understand this step. However, the average score regarding Generalization step of the high-proficiency participants significantly increases in the 2nd round of the evaluation ($\overline{X}$ = 3.29) but this score is still lower than that score of the low-proficiency participants ($\overline{X}$ = 3.60). Although the average score of the low-proficiency participants in the 2nd evaluation is higher than that score of the high-proficiency participants, the average scores of both groups are categorized in the level of 'Understand'. That is to say both high-proficiency participants and low-proficiency participants reported that they

understand the Generalization step of DDL in the 2nd of the self-evaluation. In the 3rd round of the self-evaluation, the average score of the high-proficiency participants dramatically increases ($\overline{X}$ = 3.85) and this score is a bit higher when compare to the average score of the low-proficiency participants ($\overline{X}$ = 3.75). Interestingly, the average score of the high-proficiency participants in the 1st round and the 2nd round are lower than those scores of the low-proficiency participants, but in the 3rd round of the self-evaluation, the average score of the high-proficiency participants is a bit higher that that score of the low-proficiency participants; however, the average scores in the 3rd round of the self-evaluation of both groups are categorized in the level of 'Understand'.

4.3.9 The summary of the findings regarding the comparison between low-proficiency and high-proficiency Thai EFL students' self-evaluation on their ability to follow Generalization step of DDL

According to the comparison data between low-proficiency and high-proficiency Thai EFL students' self-evaluation on their ability to follow Generalization step of DDL, the findings of the current study show that the 1st self-evaluations core of the high-proficiency participants ($\overline{X}$ = 2.85) is significantly lower than that score of the low-proficiency participants ($\overline{X}$ = 3.56), and these two average scores indicate the different of levels of understandings. That is the average score of the 1st self-evaluation score of the high-proficiency participants is in the level of 'Moderately Understand', while the 1st self-evaluation score of the low-proficiency participants is in the level of 'Understand'. When comparing the self-evaluation score of the 2nd round, however, a significant difference is not demonstrated. In other quarters, the 2nd self-evaluation score of the high-proficiency participants ($\overline{X}$ = 3.29) is not significantly different from that score of the low-proficiency participants ($\overline{X}$ = 3.60), and these average scores indicate the same level of understanding which is 'Understand'. Like the comparison in the 2nd round of the self-evaluation, the comparison between the 3rd self-evaluation score of the high-proficiency participants ($\overline{X}$ = 3.85) and that score of the low-proficiency participants ($\overline{X}$ = 3.75) does not exhibit the significant difference, and both of the self-evaluation scores are in the level of 'Understand'.

4.4 The Learning Strategies and Problem-solving Strategies Utilized by Thai EFL Students during Learning English Collocations through DDL (Qualitative Data Elicited from Think-aloud Task)

To provide a more comprehensive understanding about how Thai EFL students with different English proficiency levels follow DDL learning processes as well as their learning and problem-solving strategies utilized during learning English collocations through DDL, the six participants from the high-proficiency group and another six participants from the low-proficiency groups were purposively selected to participate in think-aloud task. The qualitative data collected from these selected twelve participants who were required to attend the think-aloud task are the primary qualitative data source that reflect the participants' DDL learning processes as well as problem-solving strategies during learning English collocations through DDL. The think-aloud data are another data used to triangulate with the data elicited from the Students' Reflection. The interpretative approach was utilized to analyze the think-aloud data and the analysis is presented in the following section.

Table 4.67 The Demographic Data of the Participants in Think-aloud Task

ID	Pseudonym	Gender	Major	Eng Prof Level	Pre-test Score	Post-test Score
H1	Jane	Female	Dentistry	B2	30	43
H2	Champ	Male	Dentistry	B2	8	33
H3	Bobby	Male	Dentistry	B2	13	26
H4	Julia	Female	Dentistry	B2	26	27
H5	Apple	Female	Dentistry	B2	38	39
H6	Lucy	Female	Dentistry	B2	37	39
L1	Jack	Male	Agricultural Product Innovation	A2	3	24
L2	Tia	Female	Agricultural Product Innovation	A2	8	23

L3	Fern	Female	Agricultural Product Innovation	A2	10	29
L4	Peach	Female	Agricultural Product Innovation	A2	15	16
L5	Cherry	Female	Agricultural Product Innovation	A2	10	11
L6	Ken	Male	Agricultural Product Innovation	A2	13	14

H1: Jane

Jane was a first-year student majoring in Dentistry and had good English language skills (B2: CEFR level). Based on her English proficiency score, Jane participated in the study as a member of the high-proficiency group. Her collocation pre-test score was 30 points and her post-test score was 43 points. This can be concluded that Jane did very well on her post-test in comparison to her pre-test with 13 points as her gain score.

During her think-aloud task, Jane was asked to complete 10 collocation questions including both lexical and grammatical collocations and she got all 10 items with correct answers. In term of Jane's performance on DDL procedures, she skillfully and smoothly followed the three steps of DDL (i.e. Identification, Classification and Generalization). To begin searching for information about collocations through the corpus (COCA), Jane read the questions carefully and formulated hypotheses about the possible collocates (a word or words that can occur with the keyword) of each keyword. She then entered both the keyword and its possible collocates in the SEARCH box of the 'KWIC' option to test her hypothesis. These show that Jane did not have any trouble in Identification step and she was able to identify the keyword to put into the input page of the COCA. As Jane had good existing collocational knowledge, she did not have to make a second try because her hypothesis was always correct at her first try.

Despite spending a relative longer time when compared to the use of time during the Identification step, Jane also performed quite well in the Classification step and mentioned that "… although the concordance lines are not complete sentences, I like the way that COCA highlights the keywords and provides some context. The

provided contexts also help me understand more when scanning the concordance lines…" (Jane's think aloud, 03/05/2017).

Jane could manage to get the correct answer for each particular question very well. She carefully read the concordance lines on the output page and tried to find common and typical pattern as well as the frequent instances of each collocation from the examples of concordance lines retrieved from COCA before making conclusion about the correct usage of each collocation (Generalization step). This shows that Jane is able to find some evidences to prove her hypotheses regarding the acceptable collocation patterns. Jane spent quite a bit of time reading the examples of concordance lines, but she finally came up with all correct answers. She informed that the provided contexts were very useful because they help her make the conclusion regarding the correct usage of each pair English collocation. That is to say Jane used context of the concordance lines to help her mange to get the correct answers during the Generalization step. As mention earlier that Jane could find all correct answers at her first try, she did not have go back to the first step of DDL nor did she have to made another hypothesis and test such hypothesis again.

H2: Champ

Champ was studying in the faculty of Dentistry and he was a first-year university student whose English proficiency was considered high (B2: CEFR level). Champ's gain score in collocation test is significantly high (25 points) when compared his pre-test score (8 points) to his post-test score (33 points).

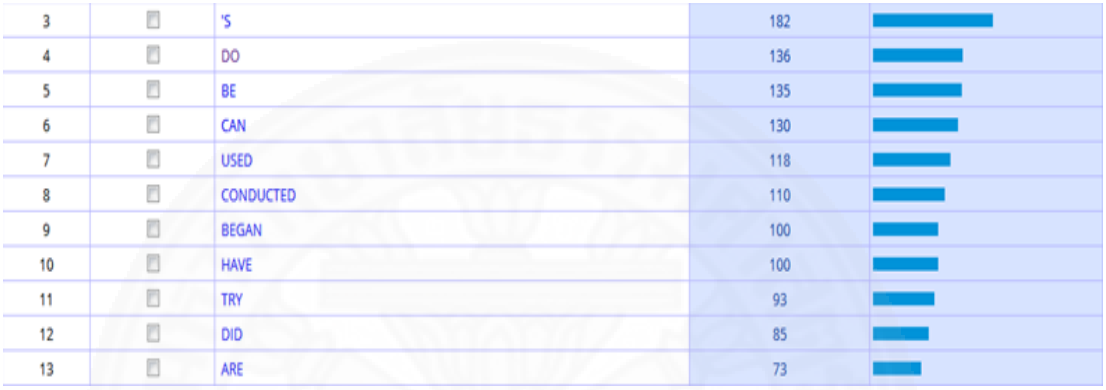
According to the information collected from the think-aloud task, Champ did very well in the collocation exercise and he got 9 items with correct answers. This could be confirmed that he was able to follow DDL procedures and performed very well in the collocation exercise. According to the interpretation of Champ's think aloud data, he did not have a major problem when trying to identify the keywords from the 10 questions of collocation exercise and was able enter such keywords in the SEARCH box of 'Collocates' option (Identification step). He mentioned that the Identification is the easiest step of DDL— "It does not take time to identify the keywords from the questions of collocation exercises and I can use my background knowledge about English collocations to make a decision about which is the keyword I should fill in the SEARCH box of 'Collocates' option." (Champ's think aloud, 03/05/2017). Unlike Jane, Champ preferred using 'Collocates' option and put only the

keyword in the SEARCH box without a possible collocate of such keyword. That means he did not make any hypothesis about the possible collocates but let the COCA gave him a clue of possible collocates.

In term of the Classification step, he also informed that Classification step is not too difficult to follow, but it takes longer time to explore and read the concordance lines retrieved from the COCA when compared to the first step of DDL (Identification). Champ also informed that that he had to spend quite a bit of time grouping the concordance lines sharing some typical and common structure together. Champ reported that "I have to thoroughly look for the keywords and carefully read their contexts, but KWIC format makes this process easier because they keywords are highlighted and put in the middle of concordance lines." (Champ's think aloud, 03/05/2017). He additionally explained that although there are a lot of contexts provided along with the searched keywords, he put the emphasis on the keywords and tried to group the similar concordance lines together in the Classification step. In other words, the contexts only help him understand the meaning of the concordance lines and they do not distract him from looking for the most appropriate collocates with the keywords.

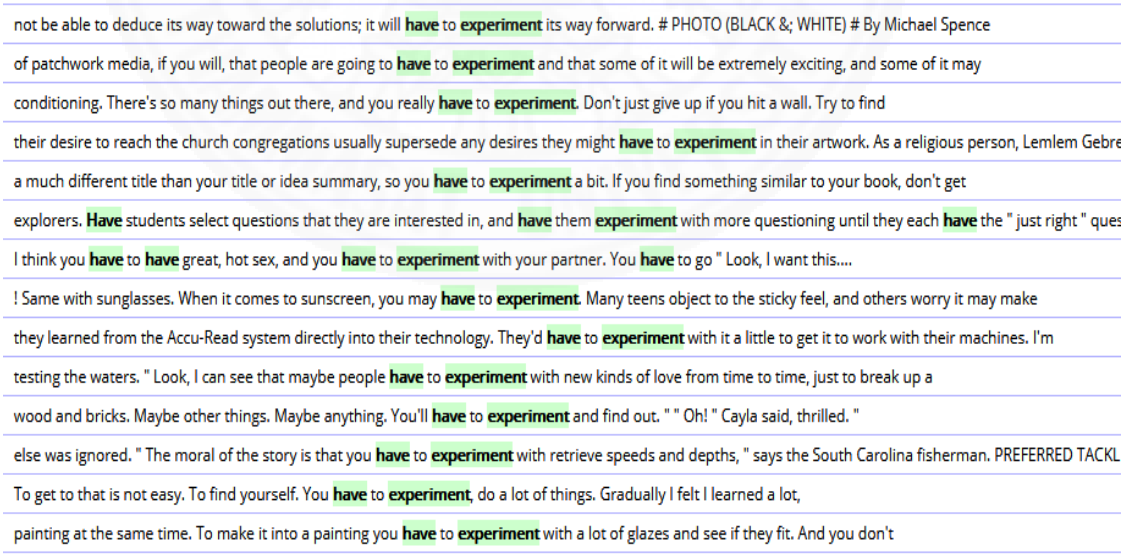
For the Generalization step, Champ informed that it is the most difficult step of DDL and require more logical consideration to choose the most appropriate collocates for the keywords, especially when the corpus provides more than one possible collocate of a keyword. He mentioned that whenever there might be one possible answer provided in 'Collocates' option, he had to look at the frequency of occurrence of each possible collocate from 'FREQUENCY' option. After looking at the frequency, he also had to ensure that he got the best answer by entering both keywords and the most possible collocates in the SEARCH box in order to retrieve the examples of concordance lines in KWIC format. He analyzed and read the retrieved concordance lines (KWIC) thoroughly and tried to understand the contexts and the meaning of the concordance lines before making final conclusion about the most appropriate collocate of each keyword. For instance, when Champ had to find the correct verb (collocates) used with the noun '*an experiment*' in order to complete the sentence *"Jenny has to*_____ *an experiment to test her hypothesis.",* he concluded that although both '*do*' and '*have*' can collocate with '*experiment*', '*do*' seems to appropriately match with the context of this question. He, therefore, chose '*do*' as the best answer for this item. This confirms that Champ was able to follow

Generalization step. This means Champ use several learning and problem-solving strategies (i.e. using 'Collocates' option, consulting 'FREQUENCY' option, and analyzing provided context) to figure out the rules of collocation usages while exploring the concordance lines. In other words, the contexts only help him understand the meaning of the concordance lines and they do not distract him from looking for the most appropriate collocates with the keywords. The following figures are the screenshot of Champ's output page with a verb that can collocate with the keyword '*experiment*':



3	'S	182	
4	DO	136	
5	BE	135	
6	CAN	130	
7	USED	118	
8	CONDUCTED	110	
9	BEGAN	100	
10	HAVE	100	
11	TRY	93	
12	DID	85	
13	ARE	73	

Figure 4.12 The screenshot of Champ's search results with '*experiment*' as keyword to see the frequency of occurrence, 'Collocates' option in COCA corpus



not be able to deduce its way toward the solutions; it will **have** to **experiment** its way forward. # PHOTO (BLACK &; WHITE) # By Michael Spence

of patchwork media, if you will, that people are going to **have** to **experiment** and that some of it will be extremely exciting, and some of it may

conditioning. There's so many things out there, and you really **have** to **experiment**. Don't just give up if you hit a wall. Try to find

their desire to reach the church congregations usually supersede any desires they might **have** to **experiment** in their artwork. As a religious person, Lemlem Gebre

a much different title than your title or idea summary, so you **have** to **experiment** a bit. If you find something similar to your book, don't get

explorers. **Have** students select questions that they are interested in, and **have** them **experiment** with more questioning until they each **have** the " just right " ques

I think you **have** to **have** great, hot sex, and you **have** to **experiment** with your partner. You **have** to go " Look, I want this....

! Same with sunglasses. When it comes to sunscreen, you may **have** to **experiment**. Many teens object to the sticky feel, and others worry it may make

they learned from the Accu-Read system directly into their technology. They'd **have** to **experiment** with it a little to get it to work with their machines. I'm

testing the waters. " Look, I can see that maybe people **have** to **experiment** with new kinds of love from time to time, just to break up a

wood and bricks. Maybe other things. Maybe anything. You'll **have** to **experiment** and find out. " " Oh! " Cayla said, thrilled. "

else was ignored. " The moral of the story is that you **have** to **experiment** with retrieve speeds and depths, " says the South Carolina fisherman. PREFERRED TACKL

To get to that is not easy. To find yourself. You **have** to **experiment**, do a lot of things. Gradually I felt I learned a lot,

painting at the same time. To make it into a painting you **have** to **experiment** with a lot of glazes and see if they fit. And you don't

Figure 4.13 The screenshot of Champ's search results with '*experiment*' as keyword and '*have*' as its collocate, KWIC option in COCA corpus

Figure 4.14 The screenshot of Champ's search results with '*experiment*' as keyword and '*do'* as its collocate, KWIC option in COCA corpus

H3: Bobby

Bobby was a first-year student majoring in Dentistry and he was a competent user of English whose English proficiency test score was categorized in B2 level of CEFR. Bobby's gain score of the collocation test (13 points) is considered high when compare his pre-test score (13 points) to his post-test score (26 points).

Based on Bobby's think-aloud task during the interview session, he got all items with correct answers in the collocation exercise. For DDL processes, Bobby understood very well in term of identifying correct keywords from the questions in the collocation exercise and he was also able to enter such keywords in the SEARCH box, and this means he did not have problem with Identification process of DDL. Like Champ, Bobby did not make any hypothesis about the possible collocates but let the 'Collocates' option of the COCA gave him a clue of possible collocates.

For the Classification step, he mentioned that he spent relatively longer time staying concentrated on reading and analyzing the number of concordance lines retrieved from the COCA corpus. Bobby, however, informed that it would be easier to

enter the keywords in the SEARCH box of 'Collocates' option because the output page would show both the possible collocates of the keywords and their frequency of occurrence. In other words, Bobby was able to follow Classification step of DDL, but he preferred to explore the examples on the output page of 'Collocates' option to the examples retrieved from the 'KWIC' option. He additionally reported that he had to consider both frequency of occurrence of each collocation and analyze the context of concordance lines before making a final decision. This indicates that he paid attention to both the frequency of occurrence and the context in order to notice the typical and common frequent instances of examples of the concordance lines retrieved from COCA before choosing the most appropriate answer regarding collocation use (Generalization step of DDL). To find the answer to the question *"Mike's grandfather died _____ a heart attack last year."*, he concluded as follows:

> I have to read the context of these examples so as to make my final decision. I think the acceptable collocation pattern for this question should be '*died of*' not '*died for*' nor '*died in*' because when I scan through the context of concordance lines, I realize that '*die of*' follows by the causes of the death like disease or sickness while '*die for*' follows by persons or countries and 'die in' follows by places. So I think '*of*'' is the correct collocate for this context.
>
> (Bobby's think aloud, 03/05/2017)

According to the above excerpt, Bobby made use of context provided with the keyword the before making final decision about the correct usage of collocation. That is to say he did not only believe in the occurrence of collocation but also analyzed the context of concordance lines in the Generalization step of DDL.

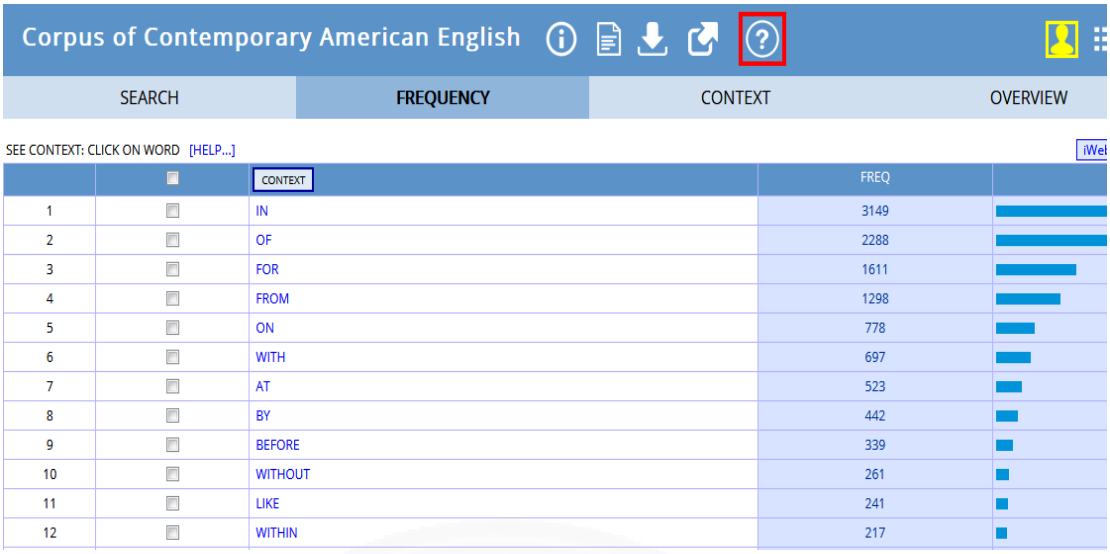


Figure 4.15 The screenshot of Bobby's search results with '*die*' as keyword to see the frequency of occurrence, 'Collocates' option in COCA corpus

12	2003 SPOK	yet killed anyone. They haven't even seen someone **die in** combat. **In** their world, death is Wile E. Coyote getting schwacked
13	1993 SPOK	. (Footage-of-Jones-a) Rev-BENHAM: If a child is going to **die in** an abortion clinic, it is our responsibility, our moral duty to
14	1999 MAG	of those young men with TB? Some will surely **die in** prison; those who are still alive when their sentences are up,
15	2005 MAG	but not sopping wet. Bottom watering, by setting **die** containers **in** trays of warm water, is best for two reasons: The
16	2012 FIC	car and die a quick and sudden death. Or **die in** her sleep, even better. Better still, the cancer would disappear
17	2012 FIC	's were sent to English Canada's front lines to **die** first **in** its wars, both put their shovels aside three times a day
18	1992 SPOK	. And all of a sudden now, he can **die in** peace if I get married. Not a lot of guilt here.
19	1993 ACAD	after all, are people willing to fight and perhaps **die in** defense of their family, friends, nation, or property if there
20	2006 ACAD	in that region to mobilize innocent humans to fight and **die in** conflicts that could be resolved through peaceful negotiations. Of the top ten
21	1991 NEWS	try to present it as a Nintendo game. People **die in** this game. " # Despite the protests, most Americans appeared to
22	2007 NEWS	drug addict after returning from service **in** Vietnam and would **die in** a car accident: # " He has just begun to realize the
23	1992 MAG	up to eight or 10 feet during the summer, **die** back **in** the winter to about one foot. During the growing season I
24	2005 NEWS	Donald Beardslee, 61, became the 11th person to **die in** the San Quentin death chamber since executions resumed **in** 1992. The others

Figure 4.16 The examples of concordance lines of Bobby's search results with '*die*' as keyword and *'in'* as it collocate retrieved from 'Collocates' option in COCA.

4	2017 SPOK	WILLIAM-GAUL, -Sout# I have never seen so many people **die of** hunger. Only God can help us now. Without God, I
5	2017 SPOK	car crashes. But we do judge people when they **die of** suicide. It's one **of** the strangest things we've given ourselves
6	2017 SPOK	you want diabetes? UNIDENTIFIED-MALE# Well, you have to **die of** something. WATTERS# (LAUGHTER) (END VIDEO CLIP) O'REILLY#
7	2017 SPOK	found and the altered scene, it appears she did **die of** homicide from suffocation. MAUREEN-MAHER- (voi# A logical conclusion, except
8	2017 SPOK	say, the CBO said Obamacare is not going to **die of** natural causes. If it expires, it's because somebody's going
9	2017 FIC	4164333 Nikhil's here and I could just **die of** happiness. Shit, I shouldn't have said that. Especially not
10	2017 FIC	there were practical problems to be solved: He would **die of** thirst and starvation, and maybe unbreathable air, unless he found his
11	2017 FIC	mouthful **of** biscuit. Cookie. " What'd he **die of**? " # " His appendix burst. " # " Sounds awful
12	2017 FIC	garrison in Belgrade. How many **of** our boys will **die of** disease as the weather gets hotter? " # " That's Turkish
13	2017 FIC	sensed that she needed a companion, was going to **die of** boredom or loneliness without one. And for once, What God There
14	2017 FIC	say, its appropriate death. # But will it **die of** old age? Will it die **of** a disease? # I have

Figure 4.17 The examples of concordance lines of Bobby's search results with '*die*' as keyword and '*of*' as it collocate retrieved from 'Collocates' option in COCA

21	2017 MAG	this video (because we've always been ride or **die for** Gendry): # See, Gendry -- one of Robert Baratheon's
22	2017 MAG	for seven years is their everlasting commitment to ride or **die for** each other. # Advertisement # Advertisement # Riverdale is the current show
23	2017 MAG	club is armed with billionaire owners or revenue streams to **die for**; some must haggle hard **for** a decent price and hunt fervently **for**
24	2017 MAG	of them: scrawny, scared, old enough to **die for** their country, too young to even grow beards. They crossed Europe
25	2017 NEWS	, called **for** rallygoers to fight, bleed, and **die for** freedom. # " This war is good versus evil, " he
26	2017 NEWS	you ask a man to be the last man to **die for** a mistake? " # But Mr. Kerry ended his political career as
27	2017 NEWS	definition of victory. He asked men and women to **die for** the political lunacy of thinking the United States could metamorphose Afghanistan's Nean
28	2017 NEWS	on the line **for** that and honor those who did **die for** that, " Orozco said. " It's an amazing experience to
29	2017 NEWS	for a delay Thursday. # Otte was sentenced to **die for** the Feb. 12, 1992, killing of Robert Wasikowski (wah-sih-KOW'
30	2016 SPOK	: Wow. DEBI HARTMAN: And it was to **die for**. This is what the wealthy of -- of the wealthiest drive.
31	2016 SPOK	our shores, put on a uniform and fight and **die for** us. What is it they are fighting **for**? What is it
32	2016 SPOK	or die, that he thinks it's do or **die for** him? JOHN-YANG# Oh, he knows that if he doesn't pull

Figure 4.18 The examples of concordance lines of Bobby's search results with '*die*' as keyword and '*of*' as it collocate retrieved from 'Collocates' option in COCA

H4: Julia

Julia was a female first-year student studying at the faculty of Dentistry. She participated in this study as a member of the high-proficiency group because her

CEFR level is B2. Her gain score of the collocation test is relatively low (1 point) when compare her pre-test scores (26 points) to her post-test scores (27 points).

According to her performance on the collocation exercise, Julia got 9 items with correct answers and only 1 item with incorrect answers. This means her ability to use the corpus (COCA) to facilitate her performance on doing English collocation exercise is quite well. In additionally, Julia's think-loud task also reveals that she did not have any trouble regarding Identification process of DDL. Julia mentioned that it was not difficult to analyze the sentences of the questions functioning as examined language structures and she was able to identify the correct keywords for entering in the SEARCH box; however, she informed that "I sometimes have to recall my existing knowledge about collocation in order to make prediction about the most possible collocate of each keyword because I prefer entering both keyword and its possible collocate in the SEARCH box." (Julia's think aloud, 03/05/2017). That is to say Julia always made the hypothesis about the possible collocate of each keyword and checked her hypothesis by putting both the keyword and its possible collocates in the SEARCH box of the 'KWIC' option.

Although Julia did not take long time during the Identification step, she spent a lot more time during Classification step. She revealed that she had to take quite a lot of time scanning concordance lines and use more than one search option to ensure her understanding before making her final decision about the correct use of collocations. Julia informed how she followed DDL procedures as follows:

> After I know what is the keywords I should enter in the SEARCH box, I have to make my hypothesis about the most possible collocates that can be used with the keyword. I then enter both the keyword and its possible collocate in the SEARCH box of the 'KWIC' option. I then have to scan the concordance lines in output page to check my hypothesis. I sometimes have to use 'Collocates' option to see the frequency of occurrences and ensure the information I got from the concordance lines of the 'KWIC' option, but I enter only the keywords in the SEARCH box for this option and let the program shows me their collocates.

(Julia's think aloud,
03/05/2017)

In term of Generalization step, Julia reported that after scanning and exploring the concordance lines from both 'List' option and 'Collocates' option, she felt more confident to choose the collocate of each keyword and complete each question with such collocates. She also mentioned that she needed to reread the sentence along with its context to notify the frequent instances of concordance lines retrieved from COCA so as to make sure that she answered the questions correctly.

H5: Apple

Apple was a first-year student of the faculty of Dentistry and based on her English proficiency level (CEFR: B2), she participated in the study as a member of the high-proficiency group. Although Apple's gain score in the collocation test is only 1 point when compared her pre-test score (38 points) to her post-test score (39 points), she got relatively high score from both tests.

During her think-aloud task, Apple was asked to complete the collocation exercise and she got all 10 items with correct answers. This means Apple has good collocational knowledge and she was able to follow DDL procedures. Apple mentioned that the COCA is a friendly program and it helped her did the collocation exercise relatively fast. In other words, she did not have any trouble in following DDL processes (i.e. Identification, Classification, and Generalization). She started the exercise by reading the questions and made a guess for the correct collocates of each keyword. She then entered both keyword and its possible collocate based on her assumption in the SEARCH box of 'KWIC' option. She carefully read and explored the concordance lines on the output page to confirm her assumption during the Classification step. Apple, however, sometimes made a wrong assumption, but she could find the correct answer in her second try. For example, to the question about V+ N collocation "*Although there is a lot of evidence against him, Nathan is able to _____ the charge if he believes that he is innocent*.", Apple' s first guess was '*object the charge*', so she entered both keyword '*the charge*' and collocate '*object*' in the SEARCH box of the 'KWIC' option. Unfortunately, the output page did not list any concordance line relevant to this context and she got the message "*Sorry, there*

are no matching records." indicating that the verb '*object*' does not collocate with '*charge*' and her guess was possibly wrong as shown in the following figure:

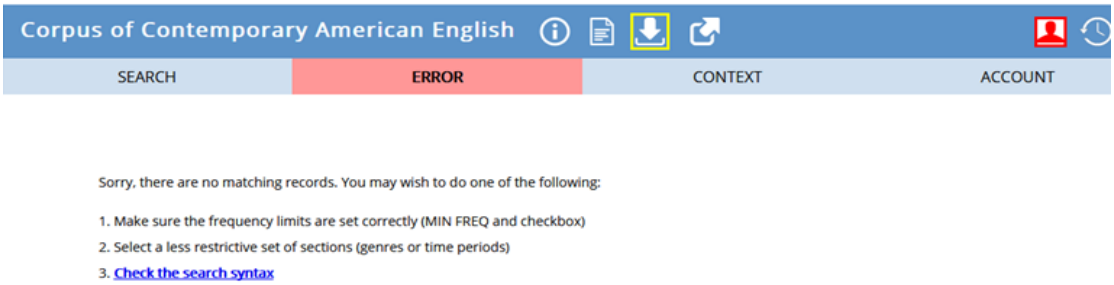


Figure 4.19 The screenshot of Apple's search results with '*the charge*' as keyword and '*object* as its collocate, 'KWIC' option in COCA corpus

Apple realized that she had made a wrong guess without any feeling of confusion, so she immediately did a second try with the keyword and its new collocate '*deny the charge*'. The output page shown many examples of concordance lines with the phrase '*deny the charge*' and this make Apple was confident that the best answer for this question should be '*deny*'. She, however, took some time reading and analyzing the concordance lines (Classification) before making final decision (Generalization) by noticing the typical and common instances of a particular collocation pattern. In term of the Generalization step, Apple mentioned that the context clues provided with the keywords were very useful for making the conclusion of collocation usage and providing the answers to the collocation questions.

1	1990 NEWS	of the police will cause chaos . # The police	deny the charge	and blame the problem on poor morale and bad equ
2	1994 MAG	the firm 's prototypes in the mid-1980s . Motorola officials	deny the charge	and say the company would n't be in the cellular
3	2003 MAG	and his team , the North Korean officials did not	deny the charge	but said they were " entitled " to have such
4	2006 FIC	as a question , and when Landsman does n't immediately	deny the charge	he says , " Frank . " He pronounces the
5	2016 ACAD	on which the defendants challenged the Neilson patent to	deny the charge	of infringement were then addressed . Most of those
6	1995 SPOK	Force One . The White House released this photo to	deny the charge	. and Democrats seized this headline to milk the story
7	2004 NEWS	can also act as spy satellites . # Indians vehemently	deny the charge	. but American analysts say rocket technology
8	1994 MAG	as acting RTC head . RTC spokesman Katsanos did not	deny the charge	. but he failed to explain coherently why the head
9	2007 MAG	engaging in illegal price fixing . The producers vehemently	deny the charge	. but they and Italian retailers are clearly on the
10	2013 NEWS	on domestic matters . Though the party 's rising stars	deny the charge	. some critics argue that the new Likud threatens
11	2000 FIC	sex . " He opened his mouth , prepared to	deny the charge	. then stopped and frowned . " That 's all
12	2013 MAG	They asked Butts about the incident . Butts did n't	deny the charge	. He admitted to discussing Georgia 's plays with
13	2006 MAG	out that he was complaining constantly . Leahy could n't	deny the charge	. He began to record his grievances in detail .
14	2007 ACAD	of the main Northern Alliance group . (Panjshiri leaders	deny the charge	.) Karzai responded not by strengthening support for
15	1999 NEWS	their own rules to oblige Thompson , though city officials	deny the charge	. # Here 's how the industrial park happened ,
16	2003 NEWS	such as Intel , National Semiconductor and Motorola , which	deny the charge	. # Lawyer Amanda Hawes , who represents Moore a

Figure 4.20 The screenshot of Apple's search results with '*the charge*' as keyword and '*deny*' as its collocate, 'KWIC' option in COCA corpus

H6: Lucy

Lucy was a female first-year student studying at the faculty of Dentistry. As she had good English language skills and her CEFR level was B2, she participated in this study as a member of the high-proficiency group. Although her gain score of the collocation test is relatively low (2 point) when compared her pre-test scores (37 points) to the post-test scores (39 points), she performed quite well in both tests.

According to Lucy's think-aloud task, she got all 10 items with correct answer and she did not have any trouble following DDL procedures. Lucy began doing collocation exercise by carefully reading the questions and trying to identify the keyword of each question. She informed that after getting the keywords, she had to make a guess about the possible collocates of the keywords by using her existing collocational knowledge. These mean Lucy was able to follow the Identification step without any trouble. Lucy preferred entering both the keyword and its possible collocate in the SEARCH box of 'KWIC' option in order to check whether her guess is correct or not. When Lucy had to find the correct verb (collocates) used with noun '*experiment*' in order to complete the sentence *"Jenny has to*_____ *an experiment to test her hypothesis."*, she responded as follows:

Lucy:	I think the best answer might be '*do*' not '*have*', '*make*', nor '*perform*'. Anyway, I will consult the concordance lines to ensure my guess.
Researcher:	Good…and what should you do to retrieve the concordance lines?
Lucy:	I will use 'KWIC' option and put both '*do*' and '*experiment*' in the SEARCH box.
Researcher:	Here you got it.
Lucy:	Yes…but I have to read and analyze the concordance lines especially their context because my final decision can be made after I explore the context provided with the examples of concordance lines.

According to the above dialogue, Lucy was able to follow DDL procedures and she had to consult and explore the concordance lines (Classification step) for more understanding when the keywords are provided with context. She always used context of KWIC to help her make final conclusion about collocation usage and answered the questions (Generalization step). This means Lucy tried to find the typical or common instances of the concordance lines and had to analyze the context provided with the concordance lines to induce the rules of collocation patterns.

4.4.1 The summary of the findings about high-proficiency Thai EFL students' DDL learning strategies and problem-solving strategies utilized during learning English collocations through DDL (The qualitative data elicited from Think-aloud Task)

According to the qualitative data collected from the think-aloud task of the six selected high-proficiency participants reveal that all of them were able to follow DDL procedures with some difficulties. In term of the Identification step of DDL, most of the participants reported that this step was quite easy and they were able to identify the examined keywords to enter in the SEARCH box of the COCA after carefully reading the questions. Although several COCA searching options were used to retrieve the concordance lines, all of the six high-proficiency participants informed that they had to make a prediction of the possible collocate of each examined keyword and put both the keyword and its possible collocate into the SEARCH box to test their hypothesis. The high-proficiency participants reported that the Classification step was more difficult than the Identification step and they had to spend a relative longer time during this step. They, however, could manage to proceed through this step. Most of the participants informed that the KWIC format facilitated them when analyzing and grouping the concordance lines that shared some common and similar features. To deduce the a particular rule of collocation patterns during the Generalization step, the high-proficiency participants reported that they had to consider the context provided with the keyword and find evidence to ensure their answers or test their hypothesis regarding the acceptable collocation patterns, especially when COCA provided them with more than one possible collocates of an examined keyword.

L1: Jack

Jack was a first-year student majoring in Agricultural Product Innovation and had fair English language skills (A2: CEFR level). Base on his CEFR level, he participated in the study as a member of the low-proficiency group. His collocation pre-test score is 3 points and her post-test score is 24 points. That means Jack did quite well on her post-test in comparison to her pre-test with 21 points as his gain score.

During his think-aloud task, Jack was asked to complete 5 items of multiple-choice questions and 5 items of fill-in-the blank questions including both

lexical and grammatical collocations and he got 8 items with correct answers. In term of DDL procedures, Jack did not have trouble in Identification step because he was able to identify the examined keyword from each question to enter in the input page. For the Classification step, Jack informed that "it is quite difficult and complicated step of DDL procedures" (Jack's think aloud, 03/05/2017) and had to spent quite a lot of time, especially when he used DDL for the first time, exploring concordance lines retrieved from the corpora (COCA) and grouping the concordance lines that share some similar features and patterns. He mentioned that it would be better if the sentences of the concordance lines were complete sentences, not uncompleted ones. However, he eventually found the possible evidences to support his decision in choosing the correct usage of collocations in the Generalization.

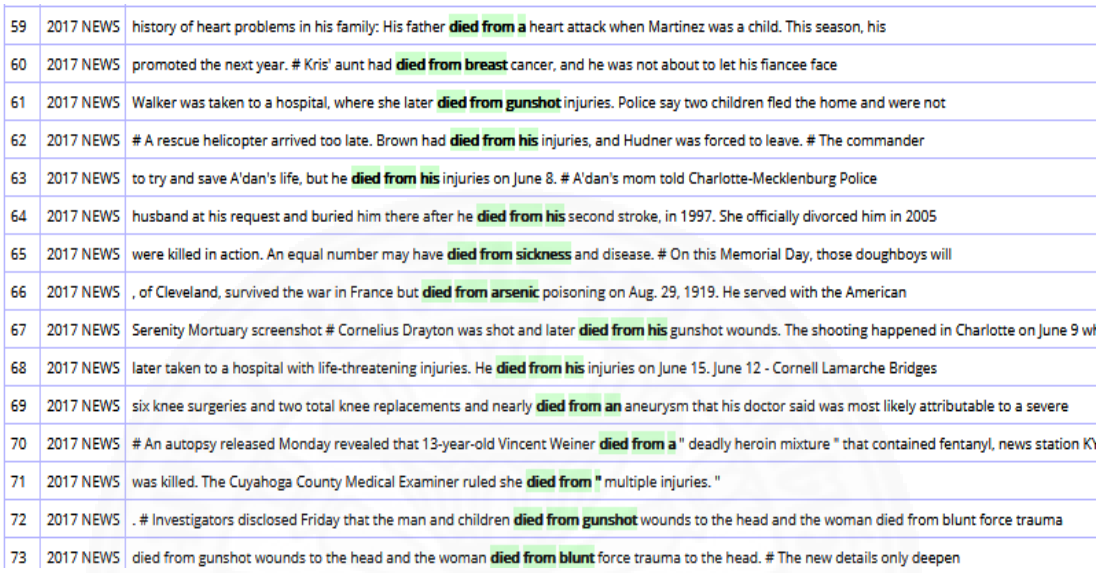
After studying the concordance lines, Jack took about 5-10 minutes to construct a rule of collocation usage presented in concordance lines and he reported that the Generalization process which he had to make decision in choosing the most appropriate collocates of the keywords in order to complete the sentences was sometimes confused. This is because the concordance lines sometimes provide him more than one option of the possible answers, especially when he was looking for the correct usages of lexical collocations. For example, when Jack had to find the correct preposition (collocates) used with verb '*died*' in order to complete the sentence *"Mike's grandfather died* _____ *a heart attack last year."*, he responded as follows:

Jack:	I'm not sure which one is the best answer because the COCA provides me more than one possible option of collocates. I don't know whether it should be '*died from*' or '*died for*'?
Researcher:	What will you do then?
Jack:	I have to use another option to search for the correct answer. I think I should use 'Collocates' option or enter the keywords in 'FREQUENCY' mode rather than making decision from the concordance lines retrieved from 'List' option.

Researcher: Alright. And if there is still more than one possible answer shown in 'Collocates' option and 'FREQUENCY' mode, what will you do?

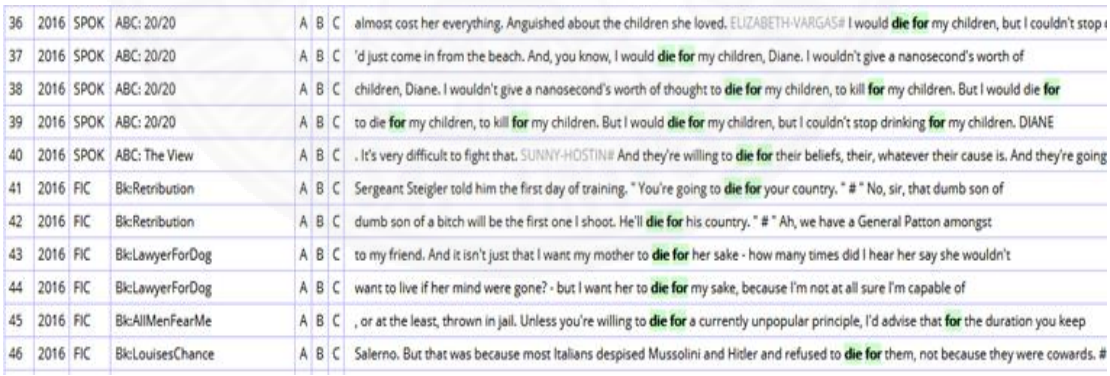
Jack: I will use the one that has most frequency use.

Researcher: I know what you mean now.



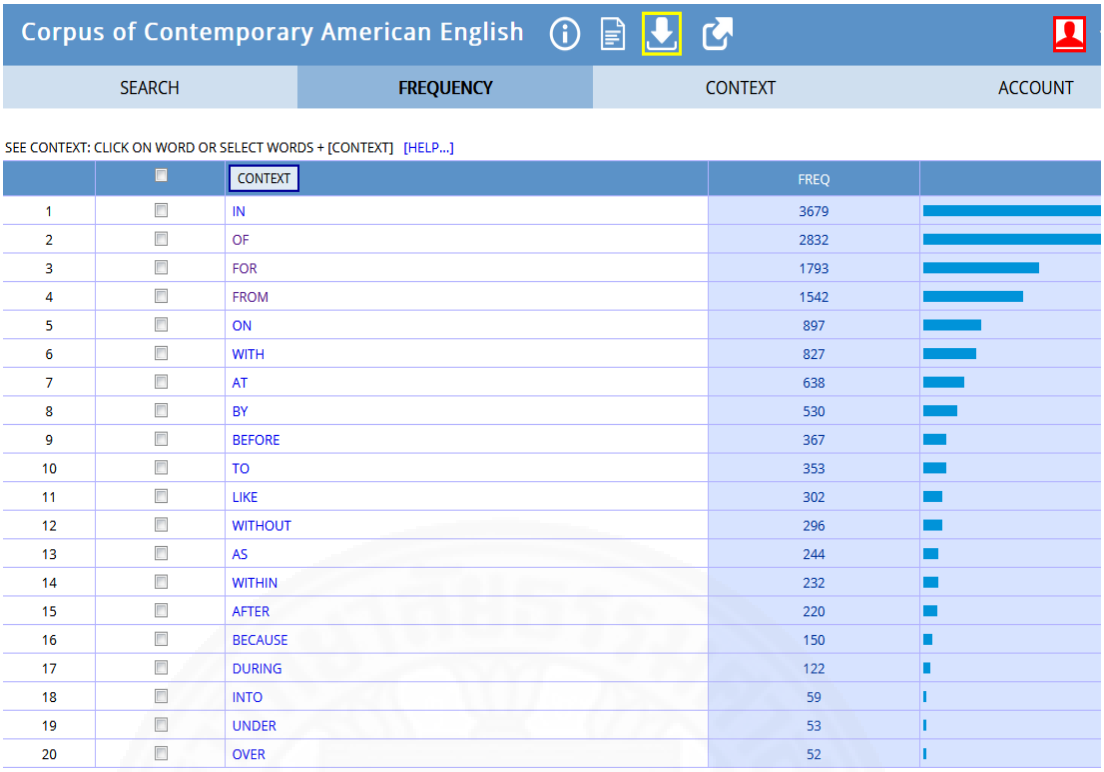
59	2017 NEWS	history of heart problems in his family: His father **died from a** heart attack when Martinez was a child. This season, his
60	2017 NEWS	promoted the next year. # Kris' aunt had **died from breast** cancer, and he was not about to let his fiancee face
61	2017 NEWS	Walker was taken to a hospital, where she later **died from gunshot** injuries. Police say two children fled the home and were not
62	2017 NEWS	# A rescue helicopter arrived too late. Brown had **died from his** injuries, and Hudner was forced to leave. # The commander
63	2017 NEWS	to try and save A'dan's life, but he **died from his** injuries on June 8. # A'dan's mom told Charlotte-Mecklenburg Police
64	2017 NEWS	husband at his request and buried him there after he **died from his** second stroke, in 1997. She officially divorced him in 2005
65	2017 NEWS	were killed in action. An equal number may have **died from sickness** and disease. # On this Memorial Day, those doughboys will
66	2017 NEWS	, of Cleveland, survived the war in France but **died from arsenic** poisoning on Aug. 29, 1919. He served with the American
67	2017 NEWS	Serenity Mortuary screenshot # Cornelius Drayton was shot and later **died from his** gunshot wounds. The shooting happened in Charlotte on June 9 wh
68	2017 NEWS	later taken to a hospital with life-threatening injuries. He **died from his** injuries on June 15. June 12 - Cornell Lamarche Bridges
69	2017 NEWS	six knee surgeries and two total knee replacements and nearly **died from an** aneurysm that his doctor said was most likely attributable to a severe
70	2017 NEWS	# An autopsy released Monday revealed that 13-year-old Vincent Weiner **died from a** " deadly heroin mixture " that contained fentanyl, news station KY
71	2017 NEWS	was killed. The Cuyahoga County Medical Examiner ruled she **died from "** multiple injuries. "
72	2017 NEWS	. # Investigators disclosed Friday that the man and children **died from gunshot** wounds to the head and the woman died from blunt force trauma
73	2017 NEWS	died from gunshot wounds to the head and the woman **died from blunt** force trauma to the head. # The new details only deepen

Figure 4.21 The screenshot of Jack's search results with '*died from*' as keyword searched from 'List' option in COCA corpus.



36	2016	SPOK	ABC: 20/20	A	B	C	almost cost her everything. Anguished about the children she loved. ELIZABETH-VARGAS# I would **die for** my children, but I couldn't stop
37	2016	SPOK	ABC: 20/20	A	B	C	'd just come in from the beach. And, you know, I would **die for** my children, Diane. I wouldn't give a nanosecond's worth of
38	2016	SPOK	ABC: 20/20	A	B	C	children, Diane. I wouldn't give a nanosecond's worth of thought to **die for** my children, to kill **for** my children. But I would die **for**
39	2016	SPOK	ABC: 20/20	A	B	C	to die **for** my children, to kill **for** my children. But I would **die for** my children, but I couldn't stop drinking **for** my children. DIANE
40	2016	SPOK	ABC: The View	A	B	C	. It's very difficult to fight that. SUNNY-HOSTIN# And they're willing to **die for** their beliefs, their, whatever their cause is. And they're going
41	2016	FIC	Bk:Retribution	A	B	C	Sergeant Steigler told him the first day of training. " You're going to **die for** your country. " # " No, sir, that dumb son of
42	2016	FIC	Bk:Retribution	A	B	C	dumb son of a bitch will be the first one I shoot. He'll **die for** his country. " # " Ah, we have a General Patton amongst
43	2016	FIC	Bk:LawyerForDog	A	B	C	to my friend. And it isn't just that I want my mother to **die for** her sake - how many times did I hear her say she wouldn't
44	2016	FIC	Bk:LawyerForDog	A	B	C	want to live if her mind were gone? - but I want her to **die for** my sake, because I'm not at all sure I'm capable of
45	2016	FIC	Bk:AllMenFearMe	A	B	C	, or at the least, thrown in jail. Unless you're willing to **die for** a currently unpopular principle, I'd advise that **for** the duration you keep
46	2016	FIC	Bk:LouisesChance	A	B	C	Salerno. But that was because most Italians despised Mussolini and Hitler and refused to **die for** them, not because they were cowards. #

Figure 4.22 The screenshot of Jack's search results with '*died for* as keyword searched from 'List' option in COCA corpus.



		CONTEXT	FREQ	
1		IN	3679	
2		OF	2832	
3		FOR	1793	
4		FROM	1542	
5		ON	897	
6		WITH	827	
7		AT	638	
8		BY	530	
9		BEFORE	367	
10		TO	353	
11		LIKE	302	
12		WITHOUT	296	
13		AS	244	
14		WITHIN	232	
15		AFTER	220	
16		BECAUSE	150	
17		DURING	122	
18		INTO	59	
19		UNDER	53	
20		OVER	52	

Figure 4.23 The screenshot of Jack's search results with '*died*' as keyword to see the frequency of occurrence, 'FREQUENCY' mode in COCA corpus.

L2: Tia

Tia was a female first-year student studying in the faculty of Agricultural Product Innovation. Based on Tia's English proficiency test score (A2: CEFR level), she participated in the study as a member of the low-proficiency group. She performed quite well during the collocation post-test (23 points) when compare to her performance in collocation pre-test (8 points). That is to say Tia had a lot of improvement with 15 points as her gain score.

During the think-aloud task, Tia had to complete 10 questions of collocation exercises including lexical and grammatical collocations and she got 9 items with correct answers. In spite of spending quite a lot of time, Tia was able to follow DDL procedures and performed quite well on the collocation exercise of think-aloud task. She started doing the exercise by reading the questions carefully before identifying the keywords to enter in the SEARCH box (Identification step). Tia always used 'Collocates' option and entered only the keywords in the SEARCH box during Identification step. This means she did not make any guess about the possible collocates but only depended on and consulted the output page of the COCA in order

to find the possible collocates of the keywords. For example, to find the preposition (collocate) used with the keyword '*die*' for the question *"Mike's grandfather died* _____ *a heart attack last year."*, Tia entered only the keyword '*die*' in the SEARCH box of the 'Collocates' and selected 'prep.ALL' from the drop-down list of the 'collocate' box. The following screenshot reveals how Tia entered the information in the input page of COCA (Identification step).

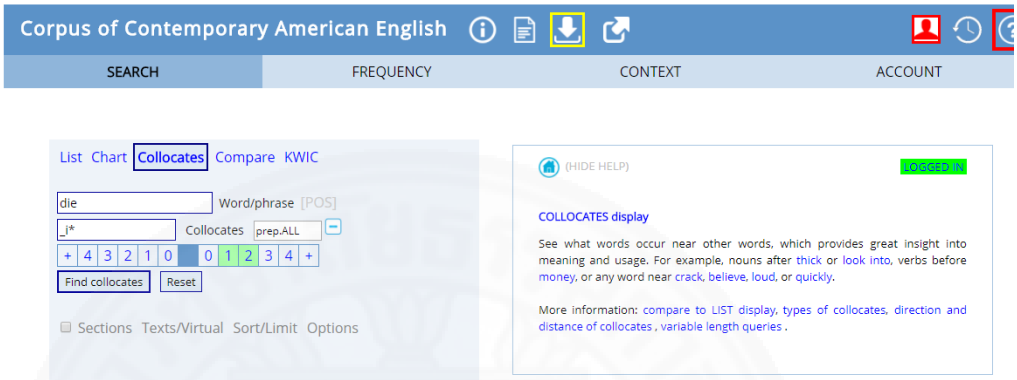


Figure 4.24 The screenshot of Tia's input page of COCA in Identification step

After retrieving the data about the possible collocates, Tia had to read the examples concordance lines of each collocate provided on the output page. Tia informed how she followed the Classification process as follows:

> I have to click on each collocate to see the concordance lines but I will begins with the one with the most frequency. I think the context provided with the keyword will help me make decision about the correct usage of the collocation in this particular context.
>
> (Tia's think aloud, 03/05/2017)

In term of the Generalization process, Tia was able to provide the correct collocate to complete each question. She mentioned that this step was the most difficult step of DDL, but she eventually found the correct collocate of each keyword after deducing the common and frequent instances of the concordance lines retrieved from the COCA. She also informed that the context of the concordance lines help her make a conclusion about the appropriate collocates of the keyword in each particular context such common instances. For example, '*die*' can collocate with either the preposition '*in*' or '*of*' but after consulting the examples of the concordance lines, she

concluded that '*of*' was the most appropriate collocate of '*die*' for this particular context. This confirms that Tia was able to follow the Generalization process of DDL.

L3: Fern

Fern was a female first-year student majoring in Agricultural Product Innovation. As she got CEFR A2 level in the English proficiency test, she participated in this study as a member of the low-proficiency group. Her gain score of the collocation test is relatively high (19 points) when compared her pre-test scores (10 points) to the post-test scores (29 points).

According to the information collected from the think-aloud task, Fern performed very well on the collocation exercises with 9 items correct out of 10 items She was also able to follow DDL procedures smoothly in spite of taking quite a lot of time. Like Tia did during the Identification step of DDL, Fern preferred using 'Collocates' option in the COCA and she did not make any prediction about the possible collocates of the keywords. In other words, after carefully reading the questions, Fern was able to identify the examined keyword and enter only the keyword without its possible collocate in the SEARCH box of the 'Collocates' option. She mentioned that it would be easier for her that the COCA output page provide all possible words that can collocate with the examined keyword. For instance, when Fern had to find the correct verb that could appropriately collocate with the noun '*an experiment*' in order to complete the sentence *"Jenny has to*_____ *an experiment to test her hypothesis."*, she responded as follows:

Fern:	After reading this question, I think the keyword is '*an experiment*' and this means I have to enter the keyword '*an experiment*' in the SEARCH box so that the COCA will show all possible verbs that can collocate with this keyword.
Researcher:	Ah I see… why don't you make a guess about the possible collocate of the keyword and enter both of them in the SEARCH box?
Fern:	I think it is difficult for me to make a guess because I sometimes do not have any idea about which word can

> collocate with the keyword. It is, therefore, much easier for me to let the COCA provides me some choices of possible collocates of each keyword.
>
> (Fern's think aloud, 03/05/2017)

For the Classification process, Fern took relatively longer time to explore examples of the concordance lines in order to make a conclusion about the correct usage of collocations for each particular context. She informed that she had to carefully and thoroughly read the concordance lines on the output page of each possible collocate of the keyword, but she would start with the one that had the most frequency of occurrence. Fern also mentioned that her final decision (Generalization step of DDL) would be made after considering the context of the concordance lines because some collocates can occur with the keyword only in a particular context. For example, to answer the question *"Jenny has to_____ an experiment to test her hypothesis."* Fern told that "Although the output page shows that both of the verbs '*have*' and '*do*' can collocate with '*an experiment*', after exploring the concordance lines I think '*do*' is the best collocate that matches this context." (Fern's think aloud, 03/05/2017). This means Fern considered both the context and the frequency of occurrence in order to make a conclusion in the 'Generalization' step of DDL.

L4: Peach

Peach was majoring in Agricultural Product Innovation and she was a female first-year student whose English proficiency was considerably fair with A2 as her CEFR level. Her gain score of collocation test is relatively low with only 1 point as her developed core when compared her pre-test score (15 points) to her post-test score (16 points).

Peach's think-aloud task data revealed that despite getting 7 items out of 10 items correct, it was quite difficult for her to find the correct answers to some questions. For the Identification step, Peach did not have any trouble and she managed quite well to identify the examined keywords to enter in the SEARCH box. Similar to Fern and Tia, Peach did not make any assumption about the words that possibly collocate with the examined keywords. She entered only the keyword from each question in the SEARCH box of the 'Collocates' option and consulted the output page in order to find a possible collocate of each keyword. To find the answer to the

question *"Mike's grandfather died _____ a heart attack last year."*, for example; Peach entered the verb '*died*' in the SEARCH box and selected 'prep.All' from the drop-down list of 'Collocates'. She also navigated the input page of the corpus to show the result of the prepositions that occur after the keyword only. The following screenshot illustrates how Peach managed the corpus in the Identification step of DDL.

Figure 4.25 The screenshot of Peach's input page of COCA in Identification step

After clicking 'Find collocates' button to see the output page, Peach mentioned that "There are many prepositions that can occur after the verb '*died*' and I do not know which one I should see its context first. However, I will only take a look at the ones you provide as the choices of the questions one by one." (Peach's think aloud, 03/05/2017). She, therefore, read the examples of the concordance lines of the collocates (i.e. '*of*, '*in*', '*for*', and '*with*') provided as the alternatives of this question one after another.

Figure 4.26 The screenshot of Peach's output page of COCA in Identification step

Peach took quite a bit of time and effort trying to analyze and group the concordance lines of each potential collocate which share some common features in order to find the answer of this question. She mentioned that this process (Classification step of DDL) was quite difficult because she had to carefully and thoroughly analyze the examples of concordance lines with the context provided with the keyword and its collocate. After considering the context provided with all possible collocates in the form of concordance lines, Peach was finally able to give the correct answer to this question despite spending a lot of time and effort. She informed that although all of the propositions (i.e. '*of*, '*in*', '*for*', and '*with*') can collocate with the verb '*died*', the collocate '*of*'' was the best answer for this particular context. This means she successfully follow the Generalization process of DDL although it requires a lot of her effort and concentration.

L5: Cherry

Cherry was a first-year female student of the faculty of Agricultural Product Innovation and she got A2 as her CEFR level. She, therefore, participated in this study as a member of the low-proficiency group. According to the result of her collocation test, she got only 1 point as her gain score when compared her pre-test score (10 points) to her post-test score (11 points).

During her think-aloud task, Cherry performed quite well on the collocation exercise as she got 7 items out of 10 items correct. In term of Identification step of DDL, she was able to follow this step without any trouble as she mentioned as follows:

> I think this step is not difficult because the questions are very clear and understandable. I also use my existing knowledge about English collocation to help me identify the keyword to enter in the SEARCH box. I prefer entering only the keyword in the input page of the 'Collocates' option as it is more convenient.
>
> (Cherry's think aloud, 03/05/2017)

Like other participants of the low-proficiency group performing the think-aloud task, Cherry spent a lot of time exploring and analyzing the examples of concordance lines during Classification process. She informed that she had to read the examples retrieved from the COCA in the form of concordance lines of each possible collocate one by one to find and group the particular frequent instances of concordance lines. That is to say unlike some participants of the high-proficiency group, she did not make any assumption about the possible collocate of each keyword in order to enter both the keyword and its collocate in the SEARCH box of 'KWIC' option. Cherry revealed that the context provided with the keywords was very helpful for making conclusion about the correct usage of collocations during the Generalization step of DDL. She had to considered and analyzed the context of the concordance lines whenever the output page of COCA provided more than one option of the collocates for a keyword. After considering the context of the concordance lines, Fern was able to provide correct answers to almost all questions of the collocation exercise, and this means she was able to follow Generalization step of DDL.

L6: Ken

Ken was a first-year male student majoring in Agricultural Product Innovation and based on his English proficiency level (CEFR: A2), he participated in the study as a member of the low-proficiency group. Ken's gain score in the

collocation test is only 1 point when compare his pre-test score (13 points) to his post-test score (14 points) and he got relatively fair score from both tests.

Although Ken did not perform very well on the collocation tests (i.e. pre-test and post-test), he seemed to understand the basic operation of the DDL procedures and got 7 items out of 10 items with correct answers in the collocation exercise during the think-aloud task. Ken began the DDL procedures by carefully reading the questions in order to identify the keyword to be entered in the SEARCH box (Identification step of DDL). Similar to other participants in the low-proficiency group, he preferred using the 'Collocates' option and entering only the examined keyword in the SEARCH box. Ken mentioned that "I do not have enough existing collocational knowledge to make any guess about the potential collocates of the keyword. It is, therefore, easier for me to let the program provides me some options first." (Ken's think aloud, 03/05/2017). This means Ken did not have any trouble during the Identification step because he was able to identify the words to enter in the SEARCH box after reading the questions of the collocation exercises.

In term of Classification step, Ken seemed to have some problems because he mentioned that it was quite difficult for him to comprehend the meaning of the concordance lines and he spent a lot of time scanning and grouping the examples of concordance lines. He reported his difficulties in the 'Classification' step when he had to explore the concordance lines to find the answer to the question *"Jenny has to_____ an experiment to test her hypothesis."* as follows:

Researcher:	What are you going to do now?
Ken:	I now have make decision between the verb '*do*' and '*have*' but my problem is that I do not know the meaning of some words in the context of concordance lines.
Researcher:	What will you do then?
Ken:	I will skip reading some examples and try to understand only some concordance lines. I think I don't have to understand all examples in the output page. I will also focus on the keyword and some examples that are relevant or similar to the context of the question.

(Ken's think aloud, 03/05/2017)

Although Ken had to take a lot of time to explore the concordance lines, he eventually came up with the correct answer of the question. Based on the above conversation, it reveals that Ken was able to deduce the rule of collocation usage (Generalization process of DDL) from the groups of common and frequent instances of concordance lines even though he had to face with some difficulties during the Classification step of DDL.

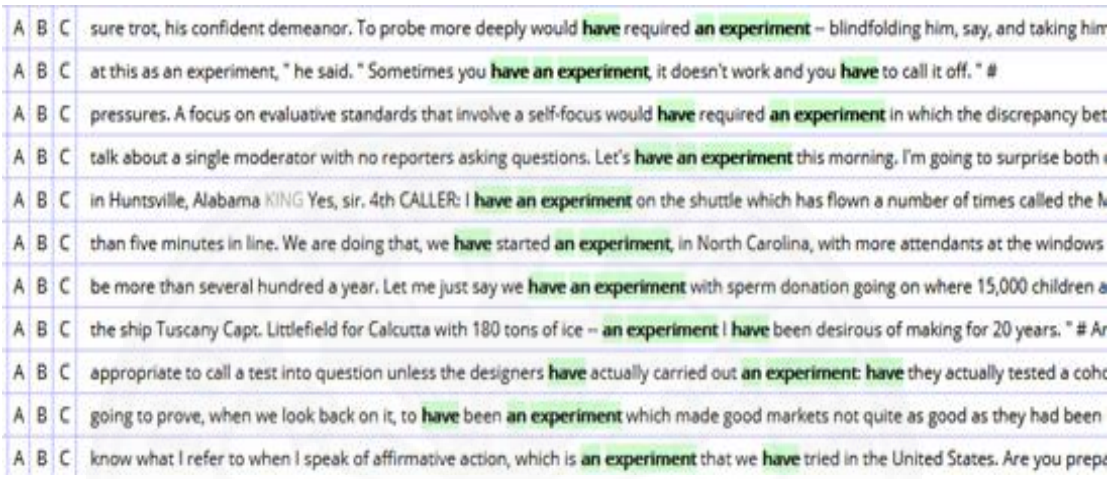


Figure 4.27 The screenshot of Ken's output page of concordance lines of the keyword 'experiment' and 'have' as its collocate

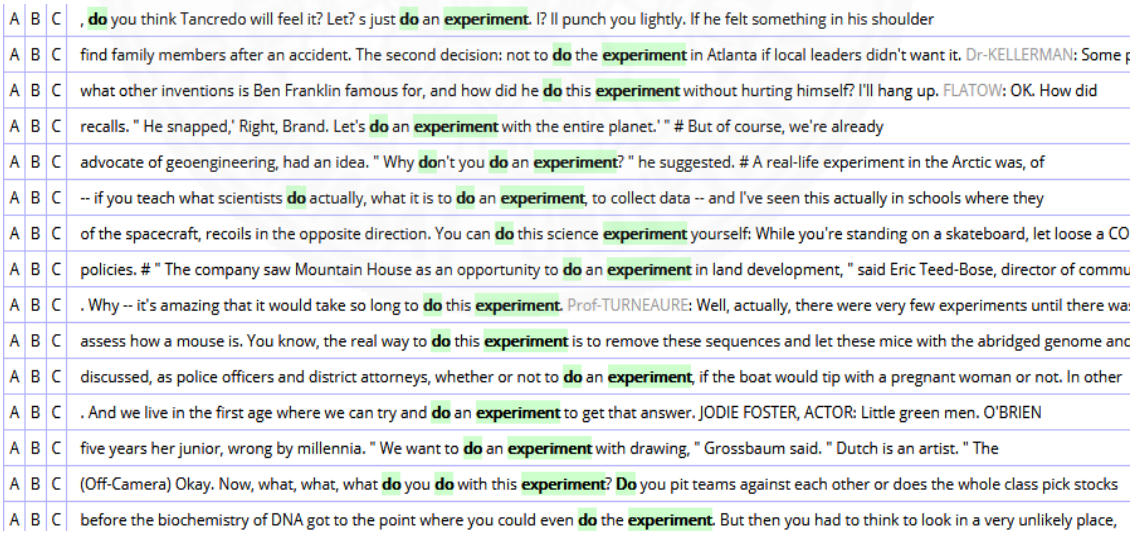


Figure 4.28 The screenshot of Ken's output page of concordance lines of the keyword 'experiment' and 'do' as its collocate

4.4.2 The summary of the findings about low-proficiency Thai EFL students' DDL learning strategies and problem-solving strategies utilized during learning English collocations through DDL (The qualitative data elicited from Think-aloud Task)

Based on the qualitative data collected from the think-aloud task of the selected six low-proficiency participants show that all of them were able to follow DDL procedures with some difficulties. For the Identification step of DDL, most of the low-proficiency participants reported that this step was not too difficult for them to follow and they were able to identify the examined keywords to enter in the SEARCH box of the COCA. Some of the low-proficiency participants informed that whenever they were not able to identify the examined keywords as some questions were complex, they had to reread the questions carefully and thoroughly. Unlike the high-proficiency participants, all of the six high-proficiency participants informed that it was too difficult for them to make a prediction of the possible collocate of each examined keyword. This means after identifying the examined keywords, the low-proficiency participants entered only the keyword into the SEARCH box so that the COCA would provide them the list of the possible collocates of each keyword. The low-proficiency participants reported that the Classification step was more difficult than the Identification step and they had to spend a relative longer time during this step. Despite spending a relative longer time reading the concordance lines of the possible collocate one by one, the low-proficiency participants could manage to proceed through this step. Most of the participants informed that the KWIC format facilitated them when analyzing and grouping the concordance lines that shared some common and similar features. To deduce the a particular rule of collocation patterns during the Generalization step, the low-proficiency participants revealed that it was very difficult, but they eventually manage to construct the rules and find the evidence of the acceptable collocation patterns by considering the context provided with the keyword to ensure their answers regarding, especially when COCA provided them with more than one possible collocates of an examined keyword.

4.5 The Learning Strategies and Problem-solving Strategies Utilized by Thai EFL Students during Learning English Collocations through DDL (Qualitative Data Elicited from Students' Reflection)

To provide a more comprehensive understanding about how the participants with different English proficiency levels follow DDL learning processes as well as their problem-solving strategies during learning English collocations through DDL, the participants from both of the high-proficiency group and the low-proficiency group were asked to reflect their past learning experiences, learning strategies, and problem-solving strategies regarding DDL learning processes in the Students' Self-reflection. The data collected from the Students' Self-reflection is used to triangulate with the data obtained from the think-aloud task and the Can-do Statement Checklist. There are 48 reflections written by the high-proficiency participants and another 48 reflections are reported by the low-proficiency participants. The written reflection data collected from Students' Self-reflection were manually analyzed and coded by the researcher to find the theme related to (i) the participants' overall understanding about DDL procedures and their ability to follow such procedures, (ii) the difficulties in using DDL to learn English collocations, and (iii) the participants' problem-solving strategies utilized during learning English collocations through DDL. The analysis is presented in terms of frequency of comments and percentage of the total comments in the following section.

Table 4.68 The Overall Understanding about DDL Learning Procedures of the High-proficiency Participants

Rank	Reflections and Comments	Frequency	Percentage
1	I understand DDL procedures and am able to follow DDL processes with a few difficulties (Understand).	32	66.67%
2	I completely understand DDL procedures and am able to follow DDL processes without any difficulty (Completely Understand).	8	16.67%
3	I quite don't understand DDL procedures yet I am able to follow DDL processes with a lot of difficulties (Don't Understand).	5	10.42%
4	I moderately understand DDL procedures and am able to follow DDL processes with some difficulties (Moderately Understand).	3	2.25%

Table 4.68 expresses the written reflection data related to the overall understanding of DDL procedures of the 48 high-proficiency participants. According to Table 4.68, most of the reflections (32 comments or 66.67%) ranking in the 1st position reflecting that the high-proficiency participants understand DDL procedures and are able to follow these processes to learn English collocations with a few difficulties. There are about 8 comments (16.67%) which rank in the 2nd position of the reflections indicating that the high-proficiency participants completely understand DDL procedures and are able to follow DDL processes without any difficulty. The 5 comments (10.42%) in the 3rd rank of the reflections indicate that the high-proficiency participants quite do not understand DDL procedures; however, they are able to follow DDL processes with a lot of difficulties. This means they encounter several problems during learning English collocations through DDL. The lowest rank of the reflection consisting of 3 comments (2.25%) expresses that the high-proficiency participants moderately understand DDL procedures and they are able to follow DDL process with some difficulties.

Table 4.69 The Overall Understanding about DDL Learning Procedures of the Low-proficiency Participants

Rank	Reflections and Comments	Frequency	Percentage
1	I understand DDL procedures and am able to follow DDL processes with some difficulties (Understand).	22	45.83%
2	I completely understand DDL procedures and am able to follow DDL processes without any difficulty (Completely Understand).	16	33.33%
3	I partially understand DDL procedures and I am able to follow DDL processes with some difficulties (Partially Understand).	9	18.75%
4	I quite don't understand DDL procedures yet I am able to follow DDL processes with a lot of difficulties (Don't Understand).	1	2.08%

Table 4.69 illustrates the written reflection data regarding the overall understanding of DDL procedures of the 48 low-proficiency participants. Based on Table 4.69, most of the reflections (22 comments or 45.83%) ranking in the 1st position reveal that the low-proficiency participants understand DDL procedures and are able to follow these processes to learn English collocations with a few difficulties. There are about 16

comments (33.33%) ranking in the 2nd position of the reflections indicating that the low-proficiency participants completely understand DDL procedures and are able to follow DDL processes without any difficulty. The 9 comments (18.75%) in the 3rd rank of the reflections indicate that the low-proficiency participants moderately understand DDL procedures and they are able to follow DDL process with some difficulties. The lowest rank of the reflection consisting of only 1 comment (2.08%) expresses that the high-proficiency participants quite do not understand DDL procedures; however, they are able to follow DDL processes with a lot of problems during learning English collocations through DDL.

4.5.1 The summary of the findings about the overall understanding about the DDL procedures of the low-proficiency and the high-proficiency Thai EFL students (The qualitative data elicited from Students' Reflection)

The findings from the written reflections reveal that both of the low-proficiency participants (45.83%) and the high-proficiency participants (66.67%) report that DDL procedures (i.e. Identification, Classification, and Generalization) are not too difficult for them to understand. They also reflect that most of them are able to follow these three steps with some difficulties.

Table 4.70 The Difficulties in Using DDL to Learn English Collocations of the High-proficiency Participants

Rank	Reflections and Comments	Frequency	Percentage
1	I think it is difficult to construct the rules of collocation usages and find the answer to the questions in the exercises (Generalization).	20	45.45%
2	I think the DDL procedures are complicated.	12	27.27%
3	I think it is difficult to explore and read the concordance lines retrieved from the corpus (Classification).	7	15.91%
4	I think it is difficult to identify the keyword and types of collocate to put into the search box (Identification).	5	11.36%

Table 4.70 illustrates the analysis of the written reflection data related to the problems and difficulties that the high-proficiency participants encounter during learning English collocations through DDL. From Table 4.70, the difficulty ranked in the 1st

position is about the 'Generalization' step of DDL. There are 20 comments (45.45%) indicating that they face the difficulty in constructing the rules of collocation usages in order to find the correct answer of the questions in the exercises. The high-proficiency participants' comment about the difficulty of DDL procedures in 2nd rank is about the complicated of DDL processes. There are 12 comments (27.27%) reflecting that the overall procedure of DDL is quite complicated for the high-proficiency participants. The difficulty concerning the 'Classification' step of DDL is ranked in the 3rd position. There are 7 comments (15.91%) reported by the high-proficiency participants that it is difficult for them to explore and read the concordance lines retrieved from the COCA corpus. The difficulty with the lowest ranking is about the 'Identification' step. There are only 5 comments (11.36%) indicating that it is difficult for the high-proficiency participants to identify the keyword and types of collocate to put into the search box.

Table 4.71 The Difficulties in Using DDL to Learn English Collocations of the Low-proficiency Participants

Rank	Reflections and Comments	Frequency	Percentage
1	I think it is difficult to construct the rules of collocation usages and find the answer to the questions in the exercises (Generalization).	13	30.95%
2	I think the DDL procedures are complicated.	12	28.57%
3	I think it is difficult to explore and read the concordance lines retrieved from the corpus (Classification).	11	26.19%
4	I think it is difficult to identify the keyword and types of collocate to put into the search box (Identification).	6	14.29%

Table 4.71 shows the analysis of the written reflection data about the problems and difficulties that the low-proficiency participants encounter during learning English collocations through DDL. According to Table 4.71, the comments about difficulty of DDL with the highest frequency of comments (13 comments or 30.95%) and rank in the 1st position is difficulty related to the 'Generalization' step of DDL. This indicates that the low-proficiency participants mostly face with the difficulty in constructing the rules of collocation usages in order to find the correct answer of the questions in the

exercises. The low-proficiency participants' comment about the difficulty of DDL procedures in 2nd rank is about the complicated of DDL processes. There are 12 comments (28.57%) reflecting that the overall procedure of DDL is quite complicated for the low-proficiency participants. The 3rd rank of the difficulty of DDL procedures is the 'Classification'. There are 11 comments (26.19%) reflecting that it is problematic for the low-proficiency participants to explore and read the concordance lines retrieved from the corpus. The difficulty with the lowest ranking is about the 'Identification' step. There are only 6 comments (14.29%) indicating that to identify the keyword and types of collocate to put into the search box is difficult for the low-proficiency participants.

4.5.2 The summary of the findings about the difficulties in using DDL to learn English collocations of the low-proficiency and the high-proficiency Thai EFL students (The qualitative data elicited from Students' Reflection)

The findings from the written reflections reveal that both low-proficiency participants and high-proficiency participants report that although they are able to follow DDL procedures (i.e. Identification, Classification, and Generalization), there are some difficulties that they have handle while learning English collocation through DDL. The high-proficiency participants and the low-proficiency participants reflect that to construct the rules of collocation usages during the Generalization step is the most procedure for them.

Table 4.72 The Problem Solving Strategies Utilized during Learning English Collocations through DDL of the High-proficiency Participants

Rank	Reflections and Comments	Frequency	Percentage
1	I use context provided with the keyword in the concordance lines to help me figure out the rules of collocation usage and ensure my answers.	18	42.86%
2	I use various search options of COCA to compare and ensure my answers.	10	23.81%
3	I regularly practice DDL so that I am able to follow DDL procedures skillfully.	5	11.90%
3	I reread the questions several times in order to come up with the keyword.	5	11.90%
5	I consider and compare the frequency of occurrence of each collocate to ensure my answers.	2	4.76%
5	I use other searching methods like Google to ensure my answers.	2	4.76%

Table 4.72 illustrates the analysis of the written reflection data regarding the problem solving strategies utilized by the high-proficiency participants while facing problems or difficulties during learning English collocations through DDL. According to Table 4.72, the problem solving strategy with the highest frequency of comments (18 comments or 42.86%) is the use of context provided with concordance lines. This reflects that the context of the concordance lines mostly helps the high-proficiency participants figure out the rules of collocation usage and ensure their answers. The problem solving strategy ranks in the 2nd position with 10 comments or 23.81% is the use of various search options of the COCA. The high-proficiency participants reflected that they had to use several search options to compare and ensure their answers when facing some confusion about the collocation usage. There are two problem solving strategies with the same amount of comments (5 comments or 11.90%) and rank in the same positions (the 3rd rank). These two problem solving strategies are a regular practice of DDL and an act of rereading the questions for several times. In other words, the high-proficiency participants reflected that they needed a regularly practice of DDL in order to follow DDL procedure skillfully and they had to reread the questions several times in order to come up with the keyword for putting in the search box. For the problem solving strategy ranked in the 5th position, there are two strategies with the same number of comments (2 comments or 4.76%) reflected by the high-proficiency participants. They mentioned the consideration of the frequency of occurrence of each collocate and the application of alternative methods as their problem solving strategies which rank in the 5th position. The high-proficiency participants explained in the reflections that they had to consider and compare the frequency of occurrence of each collocate to ensure their answers and use other searching methods like Google to ensure their answers.

Table 4.73 The Problem Solving Strategies Utilized during Learning English Collocations through DDL of the Low-proficiency Participants

Rank	Reflections and Comments	Frequency	Percentage
1	I regularly practice DDL so that I am able to follow DDL procedures skillfully.	9	29.03%
2	I use context provided with the keyword in the concordance lines to help me figure out the rules of collocation usage and ensure my answers.	8	25.81%
3	I use various search options of COCA to compare and ensure my answers.	7	22.58%
4	I reread the questions several times in order to come up with the keyword.	6	19.35%
5	I consider and compare the frequency of occurrence of each collocate to ensure my answers.	1	3.23%

Table 4.73 shows the analysis of the written reflection data about the problem solving strategies applied by the low-proficiency participants while facing problems or difficulties during learning English collocations through DDL. Based on Table 4.73, the comments about the problem solving strategies with the highest frequency of comments (9 comments or 29.03%) and rank in the 1st position is a regular practice of DDL. This indicates that the low-proficiency participants needs a regularly practice of DDL in order to follow DDL procedures skillfully. The low-proficiency participants' data about the problem solving strategies in the 2nd rank is about the use of context provided with the concordance lines. There are 8 comments (25.81%) indicating that the low-proficiency participants have to consult the context provided with the concordance lines in order that they can figure out the rules of collocation usage and ensure their answers. The 3rd rank of the problem solving strategies applied by the low-proficiency participants is the use of various search options in COCA to compare and ensure the answers. There are 7 comments (22.58%) reflecting that the use of many searches of COCA is another problem solving strategy utilized by the low-proficiency participants. The problem solving strategy ranks in the 4th position with 6 comments or 19.35% is that they had to reread the questions several times in order to come up with the keyword to put into the search box. The problem solving strategy with the lowest ranking is the consideration of the frequency of occurrence of each collocates. There is only 1 comment (3.23%) indicating that when facing with some

uncertainty, the low-proficiency participants had to consider and compare the frequency of occurrence of each collocate to ensure their answers.

4.6 Thai EFL Students' Attitudes towards Learning English Collocations through Data-driven Learning (Quantitative Data Collected from the Questionnaire)

The following detailed information describes the perceptions and attitudes towards learning English collocations through Data-driven Learning (DDL) of the high-proficiency Thai EFL students and the low-proficiency Thai EFL students serving as the participations of the current study. To provide a comprehensive finding regarding this aspect, the participations reported attitudes and perceptions through the three main data elicitation methods (i.e. the questionnaire, students' reelection writing, and semi-structured interview).

For the questionnaire, the participations reported attitudes and perceptions collected through the second part (i.e. attitudes towards learning English collocations) and the third part of the questionnaire (i.e. attitudes towards learning English collocations through DDL) are quantitatively analyzed through inferential statistic in term of mean and standardizations of each reported attitude. The information is presented according to participants' proficiency groups. Additionally, the paired *t*-test (Paired Samples Statistics) is utilized to compare and elicit any significant difference between the attitudes towards learning English collocations through DDL of the high-proficiency participants and the low-proficiency participants and presented in the following section.

Table 4.74 Description of Reported Attitudes

Mean (*M*)	Description of Attitude
4.21- 5.00	Strongly Agree
3.41 - 4.20	Agree
2.61 - 3.40	Neither Agree Nor Disagree
1.81- 2.60	Disagree
1.00 - 1.80	Strongly Disagree

Table 4.75 The High-proficiency Participants Attitudes towards Learning English Collocations

Attitudes towards Learning English Collocations	**High-proficiency Participants N = 48**		
Statement	$\overline{X}$	***SD***	**Agreement Level**
1. Learning English collocation is important for EFL and ESL students.	4.55	0.54	Absolutely Agree
2. English collocation knowledge can improve communication skills of EFL and ESL students.	4.43	0.65	Absolutely Agree
3. I would like to improve my English collocational knowledge.	4.47	0.65	Absolutely Agree
Overall	**4.48**	**0.51**	**Absolutely Agree**

Table 4.75 expresses the reported attitudes towards learning English collocations of the high-proficiency participants. Most of the high-proficiency participants extremely agree ($\overline{X}$ = 4.48 and *SD* = 0.51) with the overall statements regarding leaning English collocations. According to table 4.68, the high-proficiency participants reported that they absolutely agree with the statement "Learning English collocation is important for EFL and ESL students" ($\overline{X}$ = 4.55 and *SD* = 0.54). Most of them also believe that English collocation knowledge can improve their communication skills as reported in the statement "English collocation knowledge can improve communication skills of EFL and ESL students" ($\overline{X}$ = 4.43 and *SD* = 0.65). Additionally, the high-proficiency participants absolutely agree with the third statement ($\overline{X}$ = 4.47 and *SD* = 0.65) indicating that they would like to improve their English collocational knowledge.

Table 4.76 The Low-proficiency Participants Attitudes towards Learning English Collocations

Attitudes towards Learning English Collocations	**Low-proficiency Participants N = 48**		
Statement	$\overline{X}$	***SD***	**Agreement Level**
1. Learning English collocation is important for EFL and ESL students.	4.34	0.67	Absolutely Agree
2. English collocation knowledge can improve communication skills of EFL and ESL students.	4.28	0.65	Absolutely Agree
3. I would like to improve my English collocational knowledge.	4.30	0.69	Absolutely Agree
Overall	**4.31**	**0.58**	**Absolutely Agree**

Table 4.76 shows the reported attitudes towards learning English collocations of the low-proficiency participants. Most of the low-proficiency participants mostly agree ($\overline{X}$ = 4.31 and *SD* = 0.58) with the overall statements regarding leaning English collocations. With reference to table 4.69, the low-proficiency participants reported that they absolutely agree ($\overline{X}$ = 4.55 and *SD* = 0.54) that learning English collocation is important for EFL and ESL students. Almost all of them also believe that English collocation knowledge can improve their communication skills as reported in the statement "English collocation knowledge can improve communication skills of EFL and ESL students" ($\overline{X}$ = 4.28 and *SD* = 0.65). The low-proficiency participants extremely agree with the statement "I would like to improve my English collocational knowledge" ($\overline{X}$ = 4.47 and *SD* = 0.65) indicating that most of them would like to improve their English collocational knowledge.

Table 4.77 The Comparison of Attitudes towards Learning English Collocations between the High-proficiency Participants and the Low-proficiency Participants

Group of Participants	N	$\overline{X}$	*SD*	*t*	ρ
High-proficiency Participants	48	4.48	0.51	8.99*	.000
Low-proficiency Participants	48	4.31	0.58		

**significant at p = .05*

Table 4.77 illustrates the comparison of attitudes towards learning English collocations between the high-proficiency participants and the low-proficiency participants. The result of *t*-test computed on the high-proficiency participations rating scores regarding attitudes towards learning English collocations ($\overline{X}$ = 4.48 and *SD* = 0.51) and that scores of the low-proficiency participations ($\overline{X}$ = 4.31 and *SD* = 0.58) with *t* (8.99) shows the p-value 0.000 which is lower than 0.05 level of significance. This indicates that the high-proficiency participations' rating scores regarding attitudes towards learning English collocations is significantly higher than the low-proficiency participations' rating scores regarding attitudes towards learning English collocations (the average score is 4.48 and 4.31 respectively).

Table 4.78 The High-proficiency Participants Positive Attitudes towards Learning English Collocations through DDL

Positive Attitudes towards Learning English Collocations through DDL	High-proficiency Participants N = 48		
Statement	$\overline{X}$	***SD***	**Agreement Level**
4. The processes of learning English collocations through DDL are understandable and easy.	3.36	1.07	Partly Agree
5. I can search for all English collocations that I would like to learn through DDL processes.	3.26	1.17	Partly Agree

6. I understand the meaning of English collocations through the DDL processes.	3.51	0.93	Agree
7. I can learn the correct usage of English collations through the DDL processes.	3.40	1.01	Partly Agree
8. Despite the meaning of English collocations, I can learn the meaning of other words by reading the context of concordance lines.	3.45	0.99	Agree
14. I am able learn English collocations through DDL in overall.	3.26	1.03	Partly Agree
15. I think I will continue using DDL for my learning in the future.	3.38	1.34	Partly Agree
Overall	**3.36**	**1.08**	**Partly Agree**

Table 4.78 describes the positive attitudes towards learning English collocations through DDL of the high-proficiency participants in detail for each statement. According to the Table 4.78, the high-proficiency participants reported that they partly agree with the overall statements regarding the positive attitudes towards learning English collocations through DDL ($\overline{X}$ = 3.36 and *SD* = 1.08) When considering each statement individually, the high-proficiency participants agree with some statements, yet they also reported that there are some statements that they partly agree with. The high-proficiency participants partly agree with the statement "The processes of learning English collocations through DDL are understandable and easy." ($\overline{X}$ = 3.36 and *SD* = 1.07) and "I can search for all English collocations that I would like to learn through DDL processes." ($\overline{X}$ = 3.16 and *SD* = 1.17). They, however, agree that the meaning of English collocations can be known through the DDL processes ($\overline{X}$ = 3.51 and *SD* = 0.93) and they can learn the meaning of other words by reading the context surrounding the target collocations in concordance lines ($\overline{X}$ = 3.45 and *SD* = 0.99). In terms of learning correct usage of collocations through DDL, they partly agree with the statement "I can learn the correct usage of English

collations through the DDL processes." ($\overline{X}$ = 3.40 and *SD* = 1.01). For the overall satisfaction of learning English collocations through DDL, the high proficiency-participants partly agree with the statement "I am able to learn English collocations through DDL in overall." ($\overline{X}$ = 3.26 and *SD* = 1.03) and "I think I will continue using DDL for my learning in the future." ($\overline{X}$ = 3.38 and *SD* = 0.63).

Table 4.79 The Low-proficiency Participants Positive Attitudes towards Learning English Collocations through DDL

Positive Attitudes towards Learning English Collocations through DDL	**High-proficiency Participants N = 48**		
Statement	$\overline{X}$	***SD***	**Agreement Level**
4. The processes of learning English collocations through DDL are understandable and easy.	3.70	0.72	Agree
5. I can search for all English collocations that I would like to learn through DDL processes.	3.72	0.77	Agree
6. I understand the meaning of English collocations through the DDL processes.	3.32	0.86	Partly Agree
7. I can learn the correct usage of English collations through the DDL processes.	3.55	0.65	Partly Agree
8. Despite the meaning of English collocations, I can learn the meaning of other words by reading the context of concordance lines.	3.53	1.02	Agree
14. I am able learn English collocations through DDL in overall.	3.74	0.76	Agree
15. I think I will continue using DDL for my learning in the future.	3.81	0.80	Agree
Overall	**3.62**	**0.79**	**Agree**

Table 4.79 explains the reported positive attitudes towards learning English collocations through DDL of the low-proficiency participants. As shown in Table 4.79, the low-proficiency participants agree with the overall positive statements regarding leaning English collocations through DDL ($\overline{X}$ = 3.62 and *SD* = 0.79); however, when considering each statement individually, the low-proficiency participants agree with some statements, there are some statements that the low-proficiency partly agree with. The low-proficiency participants agree that DDL is easy and understandable ($\overline{X}$ = 3.70 and *SD* = 0.72) and most of them reported that they agree with the statement "I can search for all English collocations that I would like to learn through DDL processes." ($\overline{X}$ = 3.72 and *SD* = 0.77). The low-proficiency participants, however, partly agree that they learn meaning of the collocation ($\overline{X}$ = 3. 32 and *SD* = 0.86) as well as the correct usage of collocation pattern ($\overline{X}$ = 3.55 and *SD* = 0.65) through DDL. Additionally, they agree that "Despite the meaning of English collocations, I can learn the meaning of other words by reading the context of concordance lines." ($\overline{X}$ = 3.53 and SD = 1.02). For the overall perception on learning English collocations through DDL, they agree that they can learn English collocations through DDL ($\overline{X}$ = 3.74 and *SD* = 0.76) and they will continue using DDL for their learning in the future ($\overline{X}$ = 3.81 and *SD* = 0.80).

Table 4.80 The High-proficiency Participants Negative Attitudes towards Learning English Collocations through DDL

Negative Attitudes towards Learning English Collocations through DDL	**High-proficiency Participants N = 48**		
Statement	$\overline{X}$	***SD***	**Agreement Level**
9. I believe the lack of learning equipment such as Internet access and computers is one of my problems in learning English collocations through DDL.	2.79	1.72	Partly Agree

10. I think it is difficult to analyze the meaning and structure of concordance lines in order to learn English collocations through DDL.	3.55	0.99	Agree
11. I have to spend a lot of time and effort trying to understand the meaning of concordance lines in order to figure out the rules of English collocation usage.	3.51	1.01	Agree
12. I think the incomplete sentences of concordance lines make learning English collocations through DDL difficult.	3.49	1.06	Agree
13. I think the examples of concordance lines are too much for finding information about the rules of English collocation usage.	3.40	1.31	Partly Agree
Overall	**2.87**	**1.22**	**Partly Agree**

Table 4.80 describes the negative attitudes towards learning English collocations through DDL of the high-proficiency participants. With regard to the Table 4.80, the high-proficiency participants report their attitude at the level of 'Partly Agree' ($\overline{X}$ = 2.87 and *SD* = 1.22) with the overall statement regarding the negative attitudes towards learning English collocations through DDL. When looking at each statement in detail, the high-proficiency participants agree with some statements, yet they also reported that there are some statements that they partly agree with. The high-proficiency participants reported their opinion indicating that most of they agree that it is difficult to analyze the meaning and structure of concordance lines in order to learn English collocations through DDL ($\overline{X}$ = 3.55 and *SD* = 0.99) and that means they also agree that they have to spend a lot of time and effort trying to understand the meaning of concordance lines in order to figure out the rules of English collocation usage through DDL ($\overline{X}$ = 3.51 and *SD* = 1.01). Most of the high-proficiency

participants also agree that the incomplete sentences of concordance lines make learning English collocations through DDL difficult ($\overline{X}$ = 3.49 and *SD* = 1.06). However, they partly agree that the examples of concordance lines are too much for finding information about the rules of English collocation usage ($\overline{X}$ = 3.40 and *SD* = 1.31). Considering the equipment for learning English collocations through DDL, the high-participants partly agree that the lack of learning equipment such as Internet access and computers is one of their problems in learning English collocations through DDL ($\overline{X}$ = 2.79 and *SD* = 1.79).

Table 4.81 The Low-proficiency Participants Negative Attitudes towards Learning English Collocations through DDL

Negative Attitudes towards Learning English Collocations through DDL	**High-proficiency Participants N = 48**		
Statement	$\overline{X}$	***SD***	**Agreement Level**
9. I believe the lack of learning equipment such as Internet access and computers is one of my problems in learning English collocations through DDL.	2.96	1.02	Partly Agree
10. I think it is difficult to analyze the meaning and structure of concordance lines in order to learn English collocations through DDL.	3.23	0.87	Partly Agree
11. I have to spend a lot of time and effort trying to understand the meaning of concordance lines in order to figure out the rules of English collocation usage.	3.26	0.97	Partly Agree
12. I think the incomplete sentences of concordance lines make learning English collocations through DDL difficult.	3.17	0.91	Partly Agree

13. I think the examples of concordance lines are too much for finding information about the rules of English collocation usage.	2.96	0.86	Partly Agree
Overall	**3.12**	**0.93**	**Partly Agree**

Table 4.81 explains the reported negative attitudes towards learning English collocations through DDL of the low-proficiency participants. As shown in Table 4.81, the low-proficiency participants partly agree with the overall negative statements regarding leaning English collocations through DDL ($\overline{X}$ = 3.12 and *SD* = 0.93). Additionally when considering each statement in detail, the results also indicate that the low-proficiency participants partly agree with every statement regarding the negative attitudes towards DDL method. The low-proficiency participants reported that they partly believe that it is difficult to analyze the meaning and structure of concordance lines in order to learn English collocations through DDL ($\overline{X}$ = 3.23 and *SD* = 0.87) and a lot of time and effort are required in order to understand the meaning of concordance lines in order to figure out the rules of English collocation usage ($\overline{X}$ = 3.26 and *SD* = 0.97). In term of the concordance lines, they informed that they also partly agree with the statement "I think the incomplete sentences of concordance lines make learning English collocations through DDL difficult." ($\overline{X}$ = 3.17 and *SD* = 0.91) and "I think the examples of concordance lines are too much for finding information about the rules of English collocation usage." ($\overline{X}$ = 2.96 and *SD* = 0.86).

Table 4.82 The Comparison of Positive Attitudes towards Learning English Collocations through DDL between the High-proficiency Participants and the Low-proficiency Participants

Group of Participants	N	$\overline{X}$	*SD*	*t*	ρ
High-proficiency Participants	48	3.37	0.09	-2.66*	.037
Low-proficiency Participants	48	3.62	0.17		

Table 4.82 illustrates the comparison of positive attitudes towards learning English collocations through DDL between the high-proficiency participants and the low-proficiency participants. The result of *t*-test computed on the high-proficiency participations rating scores regarding positive attitudes towards learning English collocations through DDL ($\overline{X}$ = 3.37 and *SD* = 0.09) and that scores of the low-proficiency participations ($\overline{X}$ = 3.62 and *SD* = 0.17) with *t* (-2.66) shows the p-value 0.037 which is lower than 0.05 level of significance. This indicates that the low-proficiency participations' rating score regarding positive attitudes towards learning English collocations through DDL is significantly higher than the low-proficiency participations' rating scores regarding positive attitudes towards learning English collocations through DDL the average score is 3.62 and 3.37 respectively).

Table 4.83 The Comparison of Negative Attitudes towards Learning English Collocations through DDL between the High-proficiency Participants and the Low-proficiency Participants

Group of Participants	N	$\overline{X}$	*SD*	*t*	ρ
High-proficiency Participants	48	3.35	0.32	2.21	.092
Low-proficiency Participants	48	3.12	0.15		

**significant at p = .05*

Table 4.83 illustrates the comparison of negative attitudes towards learning English collocations through DDL between the high-proficiency participants and the low-proficiency participants. The result of *t*-test computed on the high-proficiency participations rating scores regarding negative attitudes towards learning English collocations through DDL ($\overline{X}$ = 3.35 and *SD* = 0.32) and that scores of the low-proficiency participations ($\overline{X}$ = 3.12 and *SD* = 0.15) with *t* (2.21) shows the p-value 0.092 which is higher than 0.05 level of significance. This indicates that the high-proficiency participations' rating scores regarding negative attitudes towards learning English collocations through DDL is not significantly different from the low-proficiency participations' rating scores regarding negative attitudes towards learning English collocations through (the average score is 3.35 and 3.12 respectively).

4.7 Thai EFL Students' Attitudes towards Learning English Collocations through Data-driven Learning (Qualitative Data Collected from the Semi-structured Interview)

In addition to the quantitative from the questionnaire, the qualitative data elicited from the semi-structured interview is used to triangulate with the data obtained from the questionnaire to provide a more comprehensive understanding about the attitudes and perspectives of the high-proficiency participants and the low-proficiency participants towards learning English collocations through Data-driven Learning (DDL).

The six participants from each group were purposively selected to participate in the semi-structured interview session. They are the same 12 participants who provided the information in the think-aloud session. The data collected from the interview are the primary data source that reflects the participants' perspectives toward the importance of learning English collocations, attitudes toward learning English collocations through DDL, and overall satisfaction of DDL procedure. These data are also used to triangulate with the data collected from the questionnaire and the students' reflection. The interpretative approach was utilized to analyze the interview transcription and the analysis is presented the following section.

4.7.1 Perceived advantages of and positive attitudes toward learning English collocations

All 12 selected participants (6 the high-proficiency participants and 6 low-proficiency participants) believed that collocational knowledge was important for English language learning. They considered knowledge about English collocations made them a proficient user of English who could communicate English more fluently and naturally. As a learner of English as a Foreign Language, most of the participants perceived that it would be better if they were able to use correct collocation pattern because this knowledge allowed them to be a successful learner of English. They also believed that English collocational knowledge facilitated them to communicate more native-like. The following excerpt is one of many examples of the interview transcripts that indicate the participants' perceived positive attitudes toward learning English collocations as well as the advantages of English collocational knowledge.

> I personally think that collocational knowledge is really important for learning English because this knowledge helps me communicate more fluently. If I don't have enough knowledge of English collocations, it is so difficult for me to communicate English and I have to struggle with speaking and writing English. One the other hand, knowing a lot about the correct usage of English collocations, I feel more confident with my English expressions and believe that my speeches and writings are more native-like.
>
> (Julia's semi-structured interview transcription, 03/05/2017)

Another participant's point of view regarding her perceived advantages and positive attitudes toward learning English collocations is expressed in the excerpt below.

> Collocational knowledge is very important for me in order to be a successful learner of English. This knowledge allows me to speak or write more native-like and fluently. I wish I could have enough knowledge of English collocations to become a proficient user of English. I, however, have to try very hard whenever I have to use English collocations because my collocational knowledge is quite not good. It will be better if I can improve my knowledge of English collocation.
>
> (Cherry's semi-structured interview transcription, 03/05/2017)

The above two excerpts confirm that the participants perceive the advantages of learning English collocations and believe that collocational knowledge is essential for being a proficient user of English. The participants also expressed that they would like to improve their knowledge of English collocations so that they will be able to communicate English more fluently and naturally.

4.7.2 The participants' positive attitudes toward learning English collocations through DDL

Most of the participants expressed their positive attitudes and perceptions regarding learning English collocations through DDL. Eleven out of the twelve selected participants thought positively regarding their experiences of using DDL to learn English collocations. They explicitly informed that they were in favor of applying the corpus for the purpose of learning English collocations. The following specific information is going to comprehensively explained how the participants positively perceived the advantages of using DDL to learn English collocations.

The first advantage that the participants perceived is that DDL is quite convenient. Despite some difficulties during the first time using DDL to learn English collocations, the participants informed that DDL was more convenient than using a dictionary and the processes took a bit shorter time than finding the correct usage of English collocations through the dictionary. In order to determine the correct usage of English collocations, the participants reported that they just put the key word in the search box and let the program process to get the answer. They also told that the corpus allowed them to check which collocate appeared with the keyword by reading the concordance lines displayed on the output screen. Additionally, the examples of concordance lines also help them to choose the most appropriate collocate of the keyword for each particular context. These participants, therefore, regarded the corpus as an effective tool to facilitate their English collocations learning. Tia one of the participant attending the semi-structured interview expressed her positive attitude toward learning English collocations through DDL in the following excerpt.

> After being familiar with DDL, I think consulting the COCA helps me a lot to find the correct usage of English collocations. It is more relatively quick and convenient when comparing to using a collocation dictionary. I just put the keyword in the search box and the program allows me read the concordance lines that give me which word can correctly collocate with the keyword. Although I have to take time reading the concordance lines, it is easier than using the dictionary because the dictionary sometimes does not provide me

> the examples and this means it is quite difficult to figure out the rule of collocation usage.
>
> (Tia's semi-structured interview transcription, 03/05/2017)

Another participant also expressed his preference on using DDL because of its convenience and ease in the following excerpt.

> At the first time I think that DDL is somehow complicated but after using it several times and being familiar with its procedures, I think DDL is very convenient and it is not too difficult. It is easier and faster than using a collocation dictionary. The examples of concordance lines also help me figure out the rules of collocation usage and select the collocate which is suitable for the context. I also like the way that the program generates many examples on the output page with the keyword highlighted and put in the middle of the sentences. This helps me spot the collocations easily.
>
> (Bobby's semi-structured interview transcription, 03/05/2017)

In spite of its convenience, many participants also mentioned that DDL not only provide them with collocational knowledge but also allow them to improve their vocabulary knowledge. The participants' view regarding the benefits of DDL on their knowledge of vocabulary is that they have opportunities to read through many examples of concordance lines which contain various vocabulary items. This means the participants have a chance to expose to a lot of new words which are very useful for them and can increase the participants' vocabulary bank.

> Although I have to spend a lot of reading the concordance lines retrieved from the COCA, I can use this opportunity to learn many new words that I have never known before. By reading a lot of examples of

> these concordance lines, I can improve my knowledge of English vocabulary as well.
>
> (Champ's semi-structured interview transcription, 03/05/2017)

Another participant confirmed that she found reading concordance lines to be useful to improve her knowledge of English vocabulary because she was able to learn many new words from the examples of the concordance lines retrieved from the COCA. She expressed their positive attitude toward this benefit of DDL in increasing her vocabulary bank in the following excerpt.

> I think I know many new words after I have to read a lot of concordance lines while learning English collocation through DDL. Besides learning how to use English collocations correctly, I believe that I can improve my knowledge of English vocabulary and increase my vocabulary bank by using DDL as well.
>
> (Fern's semi-structured interview transcription, 03/05/2017)

Besides leaning the target collocations and new vocabulary, the participants also reported that they unintentionally learn new collocations which they did not plan to look for byproduct of reading the retrieved concordance lines. They expressed that while scanning the examples of concordance lines displayed on the output screen to figure out the rule of the target collocation usage, they sometimes spot other patterns of two words that usually appeared together and realized that these pairs of words were possibly collocated of each other. This means the participants are able to learn other collocations besides the one that they intend to learn by reading the concordance lines. Bobby shared his experiences in learning new collocations unintentionally in the following excerpt.

> While scanning the concordance lines in attempt to find the correct answer for my collocation exercises, I sometimes spot many pairs of words that usually appear together. Although these pairs of words are not the one I am intentionally looking for, I know that they might be

> collocations. So I think DDL is very useful for improving my collocational knowledge.
>
> (Bobby's semi-structured interview transcription, 03/05/2017)

4.7.3 The participants' negative attitudes toward learning English collocations through DDL

In spite of perceiving many advantages of learning English collocations through DDL, the selected participants reported some disadvantages of applying DDL as a method to learn English collocations. The disadvantages or difficulties that the participants perceived during using DDL to complete the collocation exercises are explained in the following section.

The first disadvantage of DDL is that the processes of DDL are quite complicated. Some participants informed that when they had to follow DDL processes for the first time, they were a little bit confused with its procedure. They took quite a lot of time to follow these steps; however, after several times of practices, they were more familiar with DDL and were able to follow the DDL processes much faster. They also mentioned that this difficulty may be caused by the fact that COCA was new for them so they had to spend time understanding and getting familiar with the program. Despite spending quite a lot of time, the participants perceived the COCA as a practical and friendly program. Ken, one of the selected participants, who perceived DDL as complicated learning method at the first try reported his perception the following excerpt.

> I thought DDL procedures were confusing and difficult at the first time I try to follow these steps to complete collocation exercises. At that time I believed it was a practical way to learn English collocations. However, I was more familiar with the processes after using DDL for several times and was able to follow DDL steps much faster.
>
> (Ken's semi-structured interview transcription, 03/05/2017)

Another disadvantage of learning English collocations through DDL that some of the selected participants mentioned is that they had to spend a lot of time

scanning and comparing several concordance lines in order to get the answers. The participants informed that the COCA sometimes provided more than one possible collocate for a keyword they put in the search box. In attempt to find the best answer for each questions, they had to ensure such answer by using several COCA search options or comparing the examples of concordance lines of each collocate. They had to put a lot of effort and spend time doing these processes but they eventually found the best and correct answers.

> I think COCA is practical for searching information about English collocations but the program sometimes provides me more than one possible answer, especially when I use 'Collocate' mode to search for the word that can occur with the keyword. As I am not sure with the answer, I have to use other search option like 'KWIC' to see the examples of concordance lines and ensure my answers. I think it would be better if I can find the answer at a single try because I feel exhausted when I have to spend a lot of time searching the answer. Despite spending a lot of time and effort, I think DDL is one of effective learning methods.
>
> (Ken's semi-structured interview transcription, 03/05/2017)

The last disadvantage of learning English collocations through DDL that was mentioned by some of the participants concerns the COCA program or the internet connection, not about the DDL procedures. The participants mentioned that the COCA system sometimes was not functioning smoothly. The program spent quite a long time processing to show the results on the output screen, or even broke down, after entering the keywords in the search box.

> After entering the keyword in the search box, I sometimes have to wait for a long time for the COCA to show results on the output screen. I think this makes me frustrated and annoyed. More than that, the COCA system is not always functioned smoothly because it

> sometimes fails without any reason and I have to restart the program.
>
> (Peach's semi-structured interview transcription, 03/05/2017)

Besides the instability of the COCA system, some participants also mentioned the COCA searching technique which was possibly a little bit complicated for them. Although this problem was not significant for most of the participants, the semi-structured interview transcriptions of two participants indicate the sign that they sometimes struggled with the difficulties resulting from choosing incorrect COCA searching technique. Nevertheless, they reported that they eventually succeeded in finding the answers to their queries despite several tries of many searching techniques. Jane mentioned during the interview session that "The COCA input page is complicated because it contains a too much tool bars" (Jane's semi-structured interview transcription, 03/05/2017). Mike also indicated that "The appearance of the input page of COCA is not easily comprehensible and I have to spend a lot of time to get familiar with the tool bars of the searching options" (Jane's semi-structured interview transcription, 03/05/2017). These pieces of information confirm that some participants believe that the COCA searching techniques are quite complicated and they require a lot of effort and time to get familiar with the COCA input page.

They also mentioned the problem relating to the limited access to computer or Internet. Some of the selected participants informed that the speed of the Internet which they sometimes considered very slow and unstable. These lead to some inconveniences for the participants during their learning English collocations through DDL. Peach raised these problems during his semi-structured interview and the detailed information about his inconvenience is expressed in the following excerpt.

> Although it does not frequently occur, I sometimes encounter with the problem relating to the limited access to the Internet connection. As I have to go online in order to operate the COCA program, so my learning processes through DDL are not smooth when the Internet connection is very slow and unstable. This makes annoyed and frustrated and it takes a lot of time to get answer for only one enquiry.

(Bobby's semi-structured interview transcription, 03/05/2017)

4.7.4 The participants' overall satisfaction of DDL procedures

Almost all of the participants revealed in the interview session that DDL was helpful for learning English collocations and reported the positive satisfaction and attitude toward the overall DDL learning procedures. They also informed that they usually succeeded in finding the answers to their queries regarding English collocations.

> I think that many examples retrieved from COCA help me notice the pattern of collocations used in many different sentences which I can rely on to induce the rules of collocation usage. All in all, I believe DDL is practical for learning English collocations and I like this method of learning.
>
> (Jack's semi-structured interview transcription, 03/05/2017)

The interview transcriptions also indicate that almost all of the participants preferred using DDL for their learning in the future. They reported that the examples of concordance lines help them to notice which words usually occurred together more easily and convenient when compare to using a collocation dictionary. They, therefore, may use the corpus as a source of reference when they have to induce rules of collocation usage.

> Consulting corpus helps me to be able to use correct collocations because the examples of concordance lines show me how a collocation is used in many sentences. Comparing to using a collocation dictionary, using corpus helps me to induce the rule of collocation usage more easily and convenient. Consequently, I think I will consult the corpus when I have to find information about which words can occur together.
>
> (Champ's semi-structured interview transcription, 03/05/2017)

However, Julia is only one interview transcription indicating a promising sign that she has negative perception about the overall satisfaction of

learning English collocations through DDL and may not continue using the corpus for their English learning in the future. This selected participant informed during her interview session that DDL required too much time and effort to analyze many concordance lines. She also felt overwhelmed and frustrated with too many cut-off sentences which were quite difficult to understand. She reported that she sometimes had to spend a lot of time analyzing the examples of concordance lines to induce the rule of only one collocation. Therefore, she considered DDL as a complicated learning method which may not be appropriate for her to learn English collocations. The following excerpt of Julia's interview transcription indicates that she is one of the selected participants who possibly have a negative perception about DDL in overall and might not continue using it for her learning in the future.

> For my overall satisfaction of DDL, I think DDL may not be practical for me because its procedures are quite difficult and complicated. I have to spend half an hour analyzing too many concordance lines in order to figure out the rule of collocation usage of only one collocation. Also, I don't like the way that the corpus provide me with cut-off sentences that are sometimes incomprehensible for me. I believe it might another easier method to learn English collocations.
>
> (Julia's semi-structured interview transcription, 03/05/2017)

4.8 Thai EFL Students' Attitudes towards Learning English Collocations through Data-driven Learning (Qualitative Data Collected from the Students' Reflection)

To reveal a more comprehensive understanding about the perceptions and attitudes toward learning English collocations through DDL of the high-proficiency participants and the low-proficiency participants, the qualitative data elicited from Students' Self-reflection need to be analyzed. The participants were asked to reflect their past learning experiences in the Students' Self-reflection and some detailed information mentioned in the student reflection indicating their perceptions and attitudes toward learning English collocation through DDL. Therefore, the data

collected from the Students' Self-reflection can be used as another data source to triangulate with the data obtained from the questionnaire and the semi-structured interview. There are 48 reflections written by the high-proficiency participants and another 48 reflections are reported by the low-proficiency participants. The written reflection data collected from Students' Self-reflection were manually analyzed and coded by the researcher to investigate the theme related to (i) positive attitudes toward learning English collocation through DDL and (ii) negative attitudes toward learning English collocation through DDL. The analysis is presented in terms of frequency of comments and percentage of the total comments in the following section.

Table 4.84 The Positive Attitudes toward Learning English Collocations through DDL of the High-proficiency Participants

Rank	Reflections and Comments	Frequency	Percentage
1	Using COCA is faster than using a collocation dictionary.	15	42.86%
2	DDL is effective and practical for learning English collocations.	10	28.57%
3	DDL also provides a chance to learning other vocabulary included in the concordance lines.	7	20.00%
4	COCA contains a lot of information about English collocations when compare to a collocation dictionary.	3	8.57%

Table 4.84 expresses the written reflection data related to the positive perceptions and attitudes toward learning English collocations through DDL of the 48 high-proficiency participants. According to Table 4.81, most of the reflections (15 comments or 42.86%) ranking in the 1st position reflecting that the high-proficiency participants positively perceive that using the COCA is more convenient and faster to find information about English collocation than using collocation dictionaries. There are about 10 perceptions (28.57%) which rank in the 2nd position of the reflections indicating that the high-proficiency positively believe that DDL is an effective and practical learning method that can be applied with learning English collocations. The 7 comments (20.00%) in the 3rd rank of the reflections indicate that the high-proficiency participants think that they can learn the meaning of other words which are included in the examples of concordance lines. This means they positively believe that DDL not only provide them with an opportunity to learn English collocations but

other vocabulary. The lowest rank of the reflection consisting of 3 comments (8.57 %) expresses that the high-proficiency participants think that the COCA contains a lot more information about English collocations than collocation dictionaries. That is to say, the high-proficiency participants have positive attitudes toward the amount of English collocation information they can retrieve from the COCA.

Table 4.85 The Positive Attitudes toward Learning English Collocations through DDL of the Low-proficiency Participants

Rank	Reflections and Comments	Frequency	Percentage
1	Using COCA is faster than using a collocation dictionary.	20	50.00%
2	DDL is effective and practical for learning English collocations.	12	30.00%
3	DDL also provides a chance to learning other vocabulary included in the concordance lines.	5	12.50%
4	COCA contains a lot of information about English collocations when compare to a collocation dictionary.	3	7.57%

Table 4.85 reveals the written reflection data regarding to the positive perceptions and attitudes toward learning English collocations through DDL of the 48 low-proficiency participants. According to Table 4.82, most of the reflections (20 comments or 50.00%) ranking in the 1st position indicating that the low-proficiency participants believe that using the COCA is more convenient and faster to find information about English collocation than using collocation dictionaries. There are about 12 comments (30.00%) which rank in the 2nd position of the reflections revealing that the low-proficiency positively perceive that DDL is an effective and practical way to learn English collocations. The 5 comments (12.50%) in the 3rd rank of the reflections express that the low-proficiency participants positively believe that they can learn both collocation usage and the meaning of other words included in the examples of concordance lines. The lowest rank of the reflection consisting of 3 comments (7.57 %) shows that when compare to collocation dictionaries, the COCA contains a lot more information about English collocations. This means the low-proficiency participants have a positive perception about the English collocation information they can find in the COCA.

Table 4.86 The Negative Attitudes toward Learning English Collocations through DDL of the High-proficiency Participants

Rank	Reflections and Comments	Frequency	Percentage
1	DDL requires a lot of effort and practice in order to comprehend its procedures.	22	50.00%
2	To get and ensure an answer needs more than one COCA search option.	10	22.73%
3	The cut-off concordance lines are difficult to comprehend.	5	11.36%
4	The COCA system is not functioning smoothly.	4	9.09%
5	There is a problem with Internet access.	3	6.81%

Table 4.86 shows the data reflecting the negative perceptions and attitudes toward learning English collocations through DDL of the 48 high-proficiency participants. According to Table 4.83, most of the written reflections (22 comments or 50.00%) ranking in the 1st position indicating that the high-proficiency participants perceive that DDL procedures are complicated so they need time and effort for practicing this learning method. There are about 10 comments (22.73%) which rank in the 2nd position of the reflections revealing that the high-proficiency participants have to use more than one COCA searching option in order to ensure their answer. This means they sometimes do not get the correct answer at a single try. The 5 comments (11.36%) in the 3rd rank of the reflections show that the high-proficiency participants think that the cut-off sentences in the output page are difficult to understand. The high-proficiency participants also mention with 4 comments (9.09%) that the COCA system is sometimes not functioning smoothly. The lowest rank of the reflection consisting of 3 comments (6.81%) reveals that the high-proficiency participants consider the lack of Internet access as one of the problem in learning English collocations through DDL.

Table 4.87 The Negative Attitudes toward Learning English Collocations through DDL of the Low-proficiency Participants

Rank	Reflections and Comments	Frequency	Percentage
1	DDL requires a lot of effort and practice in order to comprehend its procedures.	25	52.08%
2	To get and ensure an answer needs more than one COCA search option.	9	18.75%
3	The cut-off concordance lines are difficult to comprehend.	8	16.67%
4	The COCA system is not functioning smoothly.	4	8.33%
5	There is a problem with Internet access.	2	4.16%

Table 4.87 shows the data reflecting the negative perceptions and attitudes toward learning English collocations through DDL of the 48 low-proficiency participants. According to Table 4.84, most of the written reflections (25 comments or 52.08%) ranking in the 1st position indicating that the low-proficiency participants perceive that DDL procedures are complicated so they need time and effort for practicing this learning method. There are about 9 comments (18.75%) which rank in the 2nd position of the reflections revealing that the low-proficiency participants have to use more than one COCA searching option in order to ensure their answer. This means they sometimes do not get the correct answer at a single try. The 8 comments (16.67%) in the 3rd rank of the reflections show that the low-proficiency participants think that the cut-off sentences in the output page are difficult to understand. The low-proficiency participants also mention with 4 comments (8.33%) that the COCA system is sometimes not functioning smoothly. The lowest rank of the reflection consisting of 2 comments (4.16%) reveals that the high-proficiency participants consider the lack of Internet access as one of the problem in learning English collocations through DDL.

CHAPTER 5
DISCUSSION AND CONCLUSION

This chapter mainly discusses the findings in relation with the four research questions outlined in Chapter 1, the implications for language learners and educators, and the possible recommendations for future studies. The information in this chapter, therefore, is presented in three main sections. The first section presents a discussion of the findings related to the four research questions, which, to recap, were: (i) *To what extent does DDL contribute to the development of the English collocational knowledge of high-proficiency and low-proficiency Thai EFL students?*; (ii) *Is there any significant correlation between learners' English proficiency and their collocational competence development?*; (iii) *How do Thai EFL students with different proficiency levels follow DDL learning processes during learning English collocations through DDL?*, and (iv) *What are high-proficiency and low-proficiency Thai EFL students' attitudes toward learning English collocations through DDL?*.

To comprehensively answer these four questions, the findings of the present study are deliberately and logically discussed in terms of how the findings correspond with or contradict the research hypotheses of the present study as outlined in Chapter 1 and with the broader context of this research topic as well as how the findings of the present study demonstrate similarities and/or contradictions with previous studies and theories. The discussion also mentions how the findings of the present study can further explain the findings of previous studies. As mentioned earlier, the second section of this chapter emphasizes the implications of the present study in terms of how language learners and educators can apply DDL for English collocations learning or can integrate this learning method in language classrooms. Some directions and recommendations for future studies are mentioned in the last section of this chapter.

5.1 Discussion of the Findings

This section provides a logical explanation and discussion of the key findings divided into four subtopics based on the research questions, namely (i) the contribution of DDL to the development of Thai EFL students' English collocational knowledge, (ii) the correlation between Thai EFL students' English proficiency and the development of their collocational knowledge after learning English collocations through DDL, (iii) the DDL learning processes and problem-solving strategies utilized by Thai EFL students during learning English collocations, and (iv) Thai EFL students' attitudes toward learning English collocations through DDL.

5.1.1 Contribution of DDL to the development of Thai EFL students' English collocational knowledge

5.1.1.1 Effects of DDL on the overall collocational knowledge of Thai EFL students (Overall score in the collocation tests)

To investigate how DDL contributes to the overall development of the English collocational knowledge of the high-proficiency and low-proficiency Thai EFL students serving as the participants of the present study, the overall pre-test score and post-test score of the participants were statistically compared to estimate the improvement of the participants' test scores or their gain scores (G-score). According to the comparison between the participants' overall pre-test scores and post-test scores, the participants in both the high-proficiency and low-proficiency group demonstrated an improvement in their test scores. In other words, the overall post-test scores of the participants in both groups were significantly higher than their scores in the pre-test.

Based on the findings of the present study regarding the improvement of the test scores (G-score), it is clear that learning English collocations through DDL provides learners with a great opportunity to access a large amount of data in the form of concordance lines, which improves their learning and hence performance. DDL learners are also encouraged to explore and notice particular linguistic features (i.e., collocation patterns), enabling them to arrive at descriptions of frequent and acceptable collocation patterns. DDL learners might also use common and frequent instances of concordance lines retrieved from the corpus as evidence to support their own hypothesis about a particular collocation usage as they may feel these are both

more accurate and possibly more practical than those found in ordinary ELT materials or collocation dictionaries (Timmis, 2015). The aforementioned information can possibly support the notion that DDL method should be considered an effective learning method that fosters and enhances learners' noticing skills, especially when learners have to inductively figure out the rules of collocation usage by finding some supporting evidence in concordance lines in a form of concordance line from corpus data to ensure their predictions of a possible collocation pattern. Overall, with reference to the findings of the present study, it might be concluded that DDL offers learners the opportunity to work directly with large numbers of examples of collocation usage in the form of concordance lines. The access to these multiple examples of a particular linguistic feature (i.e., collocations) contributes to the development of the overall collocation knowledge of learners, in this case both low-proficiency and high-proficiency Thai EFL students. The findings of the present study regarding the positive effectiveness of DDL on the collocational knowledge, therefore, are in line with the findings of several previous studies (i.e., Chao, 2010; Chatpunnarangsee, 2013; Jafarpour & Koosha, 2006; Ucar & Yukelir, 2015) that concluded that the application of the DDL method in language classrooms and collocation learning could provide a number of potential advantages for learners.

In addition to the similar conclusions of the present study with previous studies, the present findings also reveal some contradictions and inconsistencies with the assumptions and perceptions of some language researchers and teachers. According to Johns (1999), some language researchers and teachers hold a strong belief that DDL is only appropriate for students with high language abilities. In other words, there is a tendency toward thinking that DDL is an effective and useful learning method only for intelligent and sophisticated learners with an advanced level of language proficiency, and that this type of learning method (DDL) might not be appropriate for low-proficiency learners. According to Boulton (2008) and Johns (1999), many teachers think that DDL procedures are too complicated and difficult for low-proficiency learners to follow and therefore believe that DDL is not a suitable learning approach for low-proficiency students. Gabrielatos (2005) also mentioned how many language teachers do not recognize DDL as a potential teaching approach because of the seemingly complicated procedures involved. As a result, these teachers do not want to use the DDL method in their language classrooms because they hold a strong belief that DDL may not be appropriate for all of their

students, especially those with low-proficiency English skills. As mentioned earlier, not only language teachers but also some researchers believe that DDL is too complicated for low-proficiency learners and consider this limitation an obstacle for learners with low language abilities to use DDL as their learning method (Willis, Shortall, & Johns, 1995). To support their arguments regarding the limitations of DDL, these researchers have conducted many studies where only high-proficiency learners were selected to participate in the study, and these researchers concluded that DDL was appropriate only for advanced learners and not for low-level learners. Hadley (2002), for example, claimed that his effort to apply DDL with low-level learners (e.g., beginners) in his study led to failure, thus confirming the limitations of DDL for low-proficiency learners.

With reference to the findings of the present study, however, they suggest that such perceptions and beliefs about the limitations of DDL for low-proficiency students may possibly be wrong because the comparison between the overall pre-test scores and post-test scores of the participants in the present study revealed that both the low-proficiency and high-proficiency participants improved their test scores through following DDL. One of possible reasons why both low-proficiency participants and high-proficiency participants are able to improve their colllocational knowledge after learning English collocations through DDL is that DDL provides leaners with opportunity to access to large amounts of common and frequent instances of collocation patterns. The exposure to examples of collocation usage, in the form of concordance lines, can possibly be an effective way of accidental learning that not only high-proficiency learners, but also low-proficiency leaners can examine and discover a particular linguistic pattern (i.e. collocation patterns) naturally occurring in the retrieved concordance lines. This means DDL is not too complex and difficult for low-proficiency participants in term of studying the concordance lines and noticing some common patterns to arrive at descriptions of collocation usage. Based on the findings of the present study, however, it should be noticed that low-proficiency learners need clear instructions at their first experience of DDL and they lot of have to spend lots of time practicing DDL procedures.

Consequently, the findings of the present study are in contrast with the claims in several previous studies (e.g., Boulton, 2008; Gabrielatos, 200; Hadley, 2002; Willis, Shortall, & Johns, 1995) about the limitations of using the DDL method with low-proficiency students as the present study findings confirmed that both high-

proficiency and low-proficiency students' were able to develop their overall collocational knowledge through the use of the DDL method. That is, both low-proficiency and high-proficiency Thai EFL students could gain benefits from using the DDL method to assist their collocation learning and, therefore, could improve their collocational knowledge.

However, it should be noted that the low-proficiency and high-proficiency participants did differ in one way, in that they demonstrated different levels of overall collocational knowledge improvement. Although improvements of the overall test scores were significantly exhibited by participants in both the low-proficiency and high-proficiency groups, when comparing the overall improvement scores or gain scores between the participants in the high-proficiency and low-proficiency groups, the finding showed that the overall gain score of the high-proficiency group was significantly higher than the overall gain score of the low-proficiency group. In other words, DDL may possibly be more effective to aid the development of the collocational knowledge of high-proficiency participants than for low-proficiency participants. This finding about the different levels of collocational knowledge development between low-proficiency and high-proficiency Thai EFL students resonates with a previous study conducted by Sun (2003). Sun (2003) conducted a study to investigate the impact of English proficiency levels on learners' concordancing ability. She concluded that a learner's proficiency level is one of the factors contributing to their ability to use concordances.

As there was an inconsistency in the findings regarding the improvement levels of the collocational knowledge between the low-proficiency and high-proficiency participants, an intensive and detailed investigation on the gain score was conducted to find the possible factors contributing to this difference. To reach a conclusion, a comparison between the overall score development (G Score) of the lexical collocations and of the grammatical collocations was conducted individually. According to the comparison between the overall gian score in the lexical section for participants in the low-proficiency group and for participants in the high-proficiency group, there was a significant difference in the overall development scores, particularly in the lexical section for participants in the low-proficiency and high-proficiency groups. In other words, the high-proficiency participants performed significantly better than the low-proficiency participants in terms of using DDL to learn lexical English collocations. On the other hand, when comparing the overall

gain score in the grammar section between the low-proficiency group and the high-proficiency group, no significant differences were exhibited in the gain scores between these two groups. This suggests that the low-proficiency participants were possibly just as able to learn grammatical English collocations through DDL as well as the high-proficiency participants. Therefore, it may possibly be concluded that the high-proficiency participants might perform better than the low-proficiency participants in the lexical collocation section only, not in the grammatical collocation section.

One possible reason for this may be because of the varieties and complexity of the language patterns (i.e., collocation types and collocation patterns). In other words, the varieties and complexity of lexical collocation patterns may be more challenging for the low-proficiency participants, which is why they got a lower overall develop score in the collocation test than the high-proficiency participants. According to Reber (1998) and Robinson (1997), inductive learning approaches (e.g., DDL) are more appropriate for learning uncomplicated and easy language rules. Wang (2002) also confirmed that DDL is more effective for learning collocations with uncomplicated and easy patterns. He conducted a study to investigate what impact the difficulty of collocation patterns had on learning through DDL and found that DDL is more appropriate for learning uncomplicated collocations patterns. That is, low-proficiency participants can possibly encounter some problems regarding the difficulty and complexity of some lexical collocation patterns while learning English collocations through DDL. Bahardoust et al. (2012) suggested that as there is a variety of combinations of lexical collocations (i.e., verb + noun, verb + adverb, adjective + noun, verb + noun, and so on), learners may be overwhelmed with the different categories of lexical collocations. They also concluded in their study that since the number of grammatical collocations is generally fewer than that of lexical collocations, the higher frequency of their correct use seems to be natural. This means EFL learners might acquire grammatical collocations better than lexical collocations due to their less complicated nature and due to the limited number of grammatical collocations to learn (Bahardoust et al.; 2012). As a result, the ability to identify the appropriate use of lexical collocations is not easy and requires a lot more time and effort, especially for low-proficiency language learners. As a result, low-proficiency language learners need a lot of guidance in order to recognize, organize, and utilize appropriate English lexical collocations. High-proficiency participants, on the other

hand, are more autonomous learners and are more familiar with inductive learning methods, like DDL. As mentioned by Lee & Liou (2003), successful DDL learners tend to be those who are able to link the inductive learning approach to their learning styles.

Sripichan (2002) also supported considering DDL as an inductive approach to language learning, where learners are encouraged to make their own interpretations of the data; however, DDL is possibly different from other inductive learning approaches in that learners are regarded as the center of the language learning and have to directly learn from the corpus data. This is because the basis of DDL requires learners to act as if they were a linguistic researcher able to explore the examples of concordance lines in order to discover the collocation patterns by themselves without direct assistance from a teacher (Johns, 1997). This means a successful DDL user needs to be an independent and autonomous language learner who is able to orchestrate the use of various study skills, such as predicting, observing, noticing, thinking, reasoning, analyzing, interpreting, reflecting, exploring, making inferences, focusing, guessing, comparing, differentiating, theorizing, hypothesizing, and verifying, in order to discover the regularities of language through multiple exposure to authentic linguistic data presented in the form of concordance lines (O' Sullivan, 2007). Although high-proficiency language learners seem to be the most successful DDL users, i.e., those who perform better in terms of using DDL to learn lexical English collocations, it does not mean that DDL is not appropriate for low-proficiency learners ,but it does suggest that they might possibly require a lot more guidance and time to practice using the DDL method before they can become a competent DDL learner able to develop their lexical collocation knowledge, like the high-proficiency learners do.

5.1.1.2 Effects of DDL on the development of the grammatical and lexical collocation knowledge of Thai EFL students

For a more comprehensive conclusion about the effects of DDL on the development of the collocational knowledge of Thai EFL students, a detailed investigation on the improvement of the test scores in each particular section (i.e., grammatical collocation section and lexical collocation section) was conducted. With reference to the comparison between the overall pre-test score and the overall post-test data, particularly in the grammatical section of the present study, it was found that the participants demonstrated an improvement in their scores between the pre-test and

the post-test, with improvements being made across the participants of both proficiency groups (i.e., low-proficiency group and high-proficiency group). The improvement of the score or gain score (G Score) in the grammatical section confirmed that DDL contributed to the development of the grammatical collocation knowledge of both high-proficiency and low-proficiency Thai EFL students. Additionally, when comparing the overall gain score in the grammatical section between the participants in the low-proficiency and high-proficiency group, the result showed that there was no statistically significant difference between the scores of these two groups. This means both the high-proficiency and low-proficiency participants were able to develop their knowledge of English grammatical collocations at almost the same level.

In terms of the effectiveness of the DDL method on the development of Thai EFL students' lexical collocation knowledge, a detailed investigation based on the gain score, particularly in the lexical section, was conducted to reach a more comprehensive conclusion. Based on the comparison between the overall pre-test score and the overall post-test score in the lexical collocation section of the present study, it was found that both the low-proficiency and high-proficiency participants demonstrated an improvement in their scores between the pre-test and the post-test. This means that the overall post-test scores in the lexical collocation sections of the high-proficiency participants and the low-proficiency participants were significantly higher than their scores in the pre-test. Therefore, it can be concluded that the DDL method contributed to the improvement of the lexical collocation knowledge of both the low-proficiency and high-proficiency Thai EFL students. However, it should be noted that, although improvements in lexical collocation knowledge were exhibited across the participants in both proficiency groups, the low-proficiency participants and the high-proficiency participants showed different levels of improvement. As mentioned earlier, the gain scores of the high-proficiency participants in the lexical section was significantly higher than the gain score of the low-proficiency participants. In other words, high-proficiency Thai EFL students may possibly perform better than low-proficiency Thai EFL students in terms of using DDL to learn lexical English collocations. With reference to the explanation in section 5.1.1.1, the complexity and variety of lexical collocations may be a possible reason for the limitations of DDL in the development of lexical collocation knowledge by the low-proficiency Thai EFL students.

Apart from the result of the complexity and variety of lexical collocations, another possible factor is that the participants in the high-proficiency group are considered better autonomous learners who exhibited a significantly higher improvement in their test scores in the lexical section than the low-proficiency participants. However, this does not mean that DDL cannot contribute to improving the low-proficiency participants' lexical collocational knowledge because, based on the comparison between the pre-test score in the lexical collocation section and the post-test score in the same section, an overall improvement in scores could be observed among the low-proficiency participants as well. Consequently, it can be concluded from the findings of the present study that the DDL method contributed to the development of the lexical collocation knowledge of both high-proficiency and low-proficiency Thai EFL students, but these two proficiency groups demonstrated different levels of development.

5.1.1.3 Effects of DDL on the development of the collocational knowledge of Thai EFL students in terms of multiple-choice task and translation task

Apart from the overall development of English grammatical and lexical collocational knowledge, an extensive investigation of the participants' test scores based on two main tasks, namely multiple-choice task and translation task, was conducted to reach a more comprehensive conclusion about the effectiveness of DDL for the development of Thai EFL students' collocational knowledge in each particular task.

With regard to the development of the high-proficiency participants overall performance on using English collocations for completing the translation task, it was found that there was a significant difference between the overall pre-test score of the translation task and the overall post-test score in the same task. This means that the high-proficiency participants in this study had improved test scores based around their translation task. Therefore, it can be concluded that DDL contributed to the development of the overall performance on using English collocations for completing the translation task of the high-proficiency Thai EFL students. Additionally, an improvement in the test scores in terms of this overall performance was also demonstrated among the participants in the low-proficiency group. According to the comparison between the overall pre-test scores in translation task and the overall post-test scores in the same task of the low-proficiency participants, the results showed that

the low-proficiency participants' post-test scores in translation task were significantly higher than their scores in the pre-test. That is, the use of the DDL method contributed to the development of the performance on using English collocations to complete the translation task of the low-proficiency Thai EFL students based on a comparison between their pre-test and post-test scores.

Consequently, the findings confirmed that the use of the DDL method was effective for supporting the development of the performance on using English collocations for the translation task of both high-proficiency and low-proficiency Thai EFL students. This development might be a result of one of the foundations of the rationale for DDL, which is providing learners with opportunities to explore and study vast databases of authentic language samples. The exposure and access to the large numbers of examples of collocation patterns are main advantages of DDL that foster DDL leaners' collocational knowledge and encourage them to apply such knowledge into real practice. The authentic language input retrieved from the corpus data also provides learners with great opportunities to be familiar with the actual use of collocation patterns that is necessary for improving the learners' performance in the translation task. Consequently, the findings of the current study and the above discussion confirm that DDL method possibly provides effectiveness on the development of the overall performance in using English collocations for the translation task of both high-proficiency and low-proficiency Thai EFL students.

To further investigate the different level of the improvement of the performance in using English collocations for the translation task, the comparison between the overall development score in the translation task of the high-proficiency participants and that score of the low-proficiency participants was performed. Based on the comparison between the overall gain score in the translation task of the low-proficiency participants and the overall gain score in the translation task of the high-proficiency participants, the result reveals that there is no significant difference between the overall gain score in the translation task of the high-proficiency participants and the overall gain score in translation task of the low-proficiency participants. As a result, it can possibly be concluded that DDL method contributes to the development of the performance in using English collocations for the translation task of the high-proficiency participants and the low-proficiency participants Thai EFL students at almost the same level of the development.

For an in-depth investigation on the effectiveness of DDL on Thai EFL students' performance on using English collocations for the translation task, the analysis on gain score in the translation task divided into lexical collocations and grammatical collocations needs to be performed separately. According to the comparison data between the participants' pre-test score in the translation task of the lexical collocation section and that score of the post-test, it was found that both the low-proficiency and high-proficiency participants showed an improvement in their test scores. In other words, the post-test score of the translation task in the lexical section of the low-proficiency participants and that score of the high-proficiency participants are significantly higher than the score in the pre-test. The reason why the low-proficiency participants and the high-proficiency participants are able to improve their performance on using English lexical collocation for the translation task at almost the same level of improvement is that DDL provides opportunities for learners with the access to large amounts of examples of lexical collocation patterns in the form of concordance lines. Having such opportunities to familiarize lexical collocations written with context of concordance lines, DDL learners might be able to autonomously notice and discover lexical collocation patterns as well as recognize how such lexical collocations are formed along with contexts. This means DDL learners are able to perform better in the translation task when they are provided with the examples of lexical collocation patterns written in a form of concordance lines with some contexts. Therefore, it can be logically concluded that DDL contributes to the development of the performance in using English lexical collocations for the translation task of both low-proficiency and high-proficiency Thai EFL students.

To compare the development levels of the performance on using English lexical collocations for the translation task between the high-proficiency participants and the low-proficiency participants, between the gain score of the translation task in the lexical collocation section of the high-proficiency participants and that score of the low-proficiency participants to reach a more comprehensive conclusion. According to the comparison, it was found that there was a significant difference between the gain score of the translation task in the lexical collocation section. That is, the high-proficiency participants' gain score of the translation task in the lexical section was significantly higher than that gain score of the low-proficiency participants. In other words, the high-proficiency participants can perform better than the low-proficiency participants in term of using DDL to develop their performance

on using lexical collocations for the translation task. Consequently, it can be concluded that although DDL contributes to the development of performance on using English lexical collocations for the translation task of both low-proficiency and high-proficiency Thai EFL students, they demonstrate different levels of development. This finding also supports the conclusion mentioned in 5.1.1.1 about the possible limitation of DDL on the development of lexical collocational knowledge of low-proficiency Thai EFL students.

In addition to the improvement of the performance on using English lexical collocations for the translation task, a comparison between the participants' pre-test scores for their translation task in the grammatical collocation section and their post-test of the same task also showed a significant improvement in their test scores. This improvement was also noticed in participants in both the low-proficiency and high-proficiency groups. Consequently, the findings of the present study revealed that DDL contributed to the development of the performance on using English grammatical collocations to compete the translation task of both high-proficiency and low-proficiency Thai EFL students. For a more comprehensive conclusion regarding the effectiveness of DDL on the development of the performance on using English grammatical collocations, a comparison between the gain score of the translation task in the grammatical section of the high-proficiency participants and the same score of the low-proficiency participants was conducted to investigate the different levels of improvement. According to the comparison, the average gain score in the translation task of the high-proficiency participants in the grammatical section was significantly lower than the same score of the low-proficiency participants. To illustrate, the low-proficiency Thai EFL students were able to develop their performance on using English grammatical collocations better than the high-proficiency participants.

The above finding about the different levels of development of the performance on using English grammatical collocations is rather at odds with the findings of other sections where the high-proficiency Thai EFL students seemed to perform better than the low-proficiency Thai EFL students. Therefore, there was a need to further investigate the possible factors leading to the limitation of the effectiveness of DDL on the development of the performance on using English grammatical collocations. In line with this, it was hypothesized that one of the reasons why the high-proficiency participants performed worse than the low-proficiency in terms of using DDL to develop their performance on using grammatical collocation

for the translation task may be the high level of English proficiency of the participants in this group. Although the high-proficiency participants demonstrated a significant improvement in their test scores when comparing their pre-test scores for their productive skills in the grammatical collocation section to their post-test scores, it should be noted that both their average pre-test score ($\overline{X}$ = 3.46) and post-score ($\overline{X}$ = 4.48) were relatively high and almost reached the top score, which was 7, so the gap in development scores between the pre-test score and the post-test score was already quite narrow to begin with. The gap in the average development score of the low-proficiency participants, on the other hand, was quite wide because their average pre-test score in productive skills in the grammatical section was quite low ($\overline{X}$ = 0.75) when compared to the score for the high-proficiency group ($\overline{X}$ = 3.46). This means the low-proficiency participants have more opportunity to raise their score, although the average post-test score for productive skills in the grammatical collocation section ($\overline{X}$ = 2.48) was almost two limes lower than that of the high-proficiency participants ($\overline{X}$ = 4.48). Therefore, the influence of the test-score ceiling effect (the pre-test score of the participants almost reaches the top score so that there is only a little room for the development of this score in the post-test) may be one of the possible reasons why the low-proficiency participants were able to gain a more developed score for productive skills in the grammatical section. The influence of the test-score ceiling effect was also reported in a previous DDL study conducted by Sripichan (2002). Sripichan (2002) conducted a study to investigate the effect of DDL or classroom concordancing on the language learning of high-proficiency Thai EFL students, and the results of his study indicated that there was no significant positive effect of DDL on either the participants' ability to learn vocabulary or the transferability of classroom concordancing skills. Sripichan (2002) explained that the test-score ceiling effect may have had an influence on the development score of the participants. In particular, the subjects of his study had a high level of English proficiency, and the results of the subjects' pre-test scores in both the concordance and non-concordance groups were already high, so it was likely that there would be some improvement of test scores in the post-test, but this improvement would not be statistically significant (Sripichan, 2002).

In terms of the effects of using the DDL method on the development of Thai EFL students' performance on using English collocations in the

multiple-choice task, a comparison between the overall pre-test score in the multiple-choice task and the overall post-test score in the same task was conducted to investigate the improvement in their performance on the multiple-choice task. According to the comparison, it was found that the overall post-test score in the multiple-choice task of the high-proficiency participants was significantly higher than the post-test score. This means that the DDL method contributed to the development of the performance on using English collocations in the multiple-choice task of high-proficiency Thai EFL students. This improvement, however, was not demonstrated among the low-proficiency Thai EFL students. In other words, the result of the comparison did not yield any significant difference between the overall pre-test score in the multiple-choice task and the over post-test score in the same task of the participants in the low-proficiency group. Therefore, this finding indicates that the DDL method may not contribute to the development of the performance on using English collocations in the multiple-choice task of low-proficiency Thai EFL students.

To confirm that the use of the DDL method did not provide a positive effect on the development of the performance on using English collocations in the multiple-choice task of the low-proficiency participants, a comparison between the overall gain score in the multiple-choice task of the low-proficiency participants and that score of the high-proficiency participants was conducted. Based on the comparison, the results expressed a significant difference between the overall gain score in the multiple-choice task of the high-proficiency participants and that of the low-proficiency participants. That is, the overall gain score of the high-proficiency participants was significantly higher than the overall gain score of the low-proficiency participants. Consequently, the finding regarding the different levels of development of the participants' performance on using English collocations in the multiple-choice task confirmed that using the DDL method could only have a positive effect on the development of the performance on using English collocations in the multiple-choice task of high-proficiency Thai EFL students, but this development was not demonstrated among the low-proficiency Thai EFL students.

As the comparison showed there were different levels of overall improvement of the performance on using English collocations in the multiple-choice task between the low-proficiency participants and the high-proficiency participants, a detailed investigation of the participants' test score in the multiple-choice task in

terms of the types of English collocations (i.e., lexical collocations and grammatical collocations) was conducted individually to find the possible reason why the low-proficiency participants did not demonstrate an improvement in their test scores after learning English collocations through DDL.

According to the comparison between the participants' pre-test score of the multiple-choice task in the grammatical section and their post-test score, the results showed a significant score improvement among the participants in the high-proficiency group. This improvement in score, however, was not demonstrated among the participants in the low-proficiency group. This means the findings of the present study indicate that the use of DDL contributes to the development of the performance on using English grammatical collocation in the multiple-choice task of the high-proficiency Thai EFL students only, while the low-proficiency participants did not receive a positive effect from using the DDL method in terms of the development of their performance on using English grammatical collocations in this task.

The finding about the insignificant score gains from the collocation pre-test of the multiple-choice task in the grammatical section to the post-test score is not consistent with the aforementioned findings of the present study, where low-proficiency participants seemed to do well in terms of using the DDL method to develop their performance on using English grammatical collocations in the translation task. Therefore, the possible reasons why the DDL method did not prove to be effective for improving the low-proficiency participants' performance on using grammatical collocations needs to be identified. One of the possible factors is that a variety of grammatical collocations were included in the multiple-choice task in the collocation tests and this variety may have caused some confusion and affected the ability of the low-proficiency participants' to perform well in the tests. The negative effects of including a variety of language features on leaners' performance were also reported in a previous study conducted by Sripichan (2002). Sripichan (2002) claimed that one of the possible factors leading to a negative outcome from using the DDL method on learners' development was the content of the concordance-based teaching units included in the study, which was more varied when compared with the materials used in other studies that demonstrated positive findings. Sripichan concluded that, "The more varied the materials are, the more difficult it is to test the learning effect of concordancing on different language points at the same time" (Sripichan, 2002, p.210). For the present study, there was a lot more variety of grammatical collocations

included in the multiple-choice task of the tests when compared to that included in the translation task. This means the possibility that the low-proficiency participants will get the correct items in the translation task is higher than in the multiple-choice task. Consequently, the possible reason why the low-proficiency participants do not demonstrate an improvement of their test score in the multiple-choice task is that they may encounter some confusions and difficulties resulting from the variety of language features included in the receptive skill part of the collocation tests.

However, it should be noted that, when conducting the comparison between the gain score of the multiple-choice task of the high-proficiency participants and low-proficiency participants, it was found in the present study that there was no significant difference between the development scores of the low-proficiency participants and the high-proficiency participants. As a result, it can be concluded that, although only the high-proficiency participants demonstrated significant score gains from the collocation pre-test of their receptive skills in the grammatical section to their post-test score, there was no significant difference between the gain scores of the multiple-choice task of the high-proficiency participants and the low-proficiency participants in the grammatical section. In other words, the use of the DDL method contributed to the development of the performance on using English grammatical collocations in the multiple-choice task of the high-proficiency and low-proficiency Thai EFL students at almost the same level of the development.

To identify the effectiveness of the DDL method toward the development of the performance on using English lexical collocations of Thai EFL students, a comparison was performed between the participants' pre-test and post-test scores of the multiple-choice task in the lexical section. According to the comparison between the pre-test score of the multiple-choice task in the lexical section and the post-test score in the same task of the high-proficiency participants, it was found that the post-test score was significantly higher than the pre-test score. That is, the high-proficiency participants demonstrated a significant improvement in terms of using DDL to develop their performance on using English lexical collocations in the multiple-choice task. A significant score improvement, on the other hand, was not demonstrate among the participants in the low-proficiency group. In the other words, the pre-test scores of the multiple-choice task in the lexical section of the low-proficiency participants were not significantly different from those in the post-test. Consequently, the findings of the present study indicate that the use of DDL

contributes to the development of the performance on using English lexical collocations in the multiple-choice task of the high-proficiency Thai EFL students only and that the low-proficiency participants may not be able to develop their performance on using English lexical collocations in the multiple-choice task through the DDL method.

To confirm the limitation of the DDL method on the development of the performance on using English lexical collocations in the multiple-choice task of the low-proficiency participants, a more intensive and detailed investigation on the development level was conducted. According to the comparison regarding the gain score of the multiple-choice task in the lexical collocations, the results of the present study showed that the gain score of the high-proficiency participants was significantly higher than that score of the low-proficiency participants. This confirms that only high-proficiency Thai EFL students are able to develop their performance on using English lexical collocations in the multiple-choice task. This finding is also consistent with the aforementioned findings of the present study, as detailed in section 5.1.1.1, that there might be some limitations with the use of DDL on the development of the lexical collocation knowledge of low-proficiency Thai EFL students. However, it should be noted that the low-proficiency participants seemed to perform better in terms of the performance on using English grammatical collocations in as they demonstrated significant score gains

5.1.2 Correlation between Thai EFL students' English proficiency and the development of their collocational knowledge after learning English collocations through DDL

Another aspect around the effectiveness of the DDL method that the present study aimed to investigate is about the correlation between Thai EFL students' English proficiency level and the development of their collocational knowledge after learning English collocations through DDL. To obtain a comprehensive conclusion about this relationship, the linear correlation between participants' English proficiency scores (EPT scores) and the participants' development score needed to be measured. According to the information regarding the correlation between the EPT scores of the high-proficiency participants and their overall gain score in the collocation test, the result revealed that there is no linear correlation between these two sets of the scores. This means there is no connection or relationship between the English proficiency level of the high-proficiency Thai EFL students and the

development of their collocational knowledge after learning English collocations through DDL. The lack of correlation between the score in the English proficiency test and the development score in the collocation test was also demonstrated with the low-proficiency participants. Based on the measurement of the correlation between EPT scores and the gain scores of the low-proficiency participants, it was found that there was no linear correlation between these two sets of scores as well. That is, the English proficiency level of the low-proficiency Thai EFL students did not have any connection or relationship with the students' collocational knowledge development after the application of the DDL method. As a result, the findings of the present study regarding the correlation between learners' proficiency level and their collocational knowledge development confirmed that the proficiency level of leaners does not positively or negatively affect the effectiveness of the DDL method. In other words, Thai EFL students of all English proficiency levels (i.e., low-proficiency leaners and high-proficiency learners) are able to learn English collocations through DDL. These findings about the correlation between Thai EFL students' English proficiency level and the development of their collocational knowledge also agree with the aforementioned discussion in section 5.1.1.1 that Thai EFL students in both the high-proficiency and low-proficiency group were able to use the DDL method to improve their collocational knowledge, although they had different respective levels of improvement. That is, the high-proficiency Thai EFL students seemed to perform better than the low-proficiency Thai EFL students.

5.1.3 The DDL learning processes and problem-solving strategies of Thai EFL students during learning English collocations through DDL

To comprehensively investigate the DDL learning procedures and the problem-solving strategies of the Thai ELF students during learning English collocations through DDL, both quantitative data obtained from the 'Can-do Statement Checklist' and qualitative data collected from the semi-structured interview, the students' reflections, and the think-aloud task were integrated.

5.1.3.1 Overall self-evaluation scores collected from the Can-do Statement Checklists of the high-proficiency and low-proficiency participants

With regard to the participants' ability to follow the DDL learning procedures, which are split into three main steps (i.e., 'Identification', 'Classification', and 'Generalization'), the quantitative data obtained from the 'Can-do Statement Checklist' that was administered during the 5th, 9th, and 15th weeks of the

collocation classes were analyzed. The results indicated that the almost all of the self-evaluation scores of both the high-proficiency and low-proficiency participants could be categorized at the level of 'Understand.' This means that both the high-proficiency and low-proficiency Thai EFL students reflected, in each of the three self-evaluation rounds, that they generally understood the three steps comprising the DDL procedures. However, for a more comprehensive understanding and to arrive at a detailed conclusion about the ability of the participants to follow the DDL procedures during their English collocations learning, a close investigation was performed individually on the self-evaluation scores for each DDL procedure (i.e., identification, Classification, and Generalization), and a comparison those self-evaluation scores among the three rounds of the evaluation was performed to investigate the participants' development of their ability to follow each step in the DDL method. In addition to the comparison among the three rounds of self-evaluation to understand the development of the participants within the same groups, the self-evaluation scores between the participants in the low-proficiency group and the high-proficiency group were compared in order to examine any differences or similarities in the DDL ability of these two proficiency groups.

5.1.3.2 Self-evaluation scores of the identification process of DDL

According to the self-evaluation scores of the identification step of the high-proficiency participants, the comparison between the self-evaluation score in the first round ($\overline{X}$ = 3.50) and in the second round of the evaluation ($\overline{X}$ = 3.58) indicated that there was an improvement in the self-evaluation scores; however, this improvement did not show any statistical difference and both the average scores ($\overline{X}$ = 3.50 and $\overline{X}$ = 3.58) signified that the participants understood the identification step during the first and the second round of the self-evaluation. An improvement of the self-evaluation score was also demonstrated when comparing the self-evaluation score in the second round ($\overline{X}$ = 3.58) with the self-evaluation score in the third round ($\overline{X}$ = 3.79), with this improvement showing a statistical difference; however, these average scores signifies the same meaning, which is the students understood the step. Although the average scores slightly increased over the three times the evaluation was performed, the comparison among the three rounds for the high-proficiency participants' self-evaluation scores for the identification process, as performed through the application of ANOVA, did not demonstrate a significant difference and

the three average scores ($\overline{X}$ = 3.50, $\overline{X}$ = 3.58, and $\overline{X}$ = 3.79) showed that the high-proficiency participants understood the identification step of the DDL method. These findings confirmed the aforementioned discussion in section 5.1.3.1 that the high-proficiency participants Thai EFL students understood the identification process within DDL and were able to follow this step during their learning English collocations through DDL. It should be also noted that their levels of understanding were not significantly different over the three evaluations and this confirmed that the high-proficiency Thai EFL students already understood the identification step of DDL from the beginning of using DDL. In other words, the identification step of DDL may not be difficult or problematic for high-proficiency Thai EFL students based on their three self-evaluations.

For the self-evaluation scores of the low-proficiency Thai EFL students for the identification step, the comparison showed that their score in the first round ($\overline{X}$ = 3.63) was not significantly different that in the second round of the evaluation ($\overline{X}$ = 3.83). Similarly, the comparison between the self-evaluation score of the second round ($\overline{X}$ = 3.83) and that of the third round ($\overline{X}$ = 3.99) did not show any significant difference. The comparison of the self-evaluation scores among the three evaluation rounds also confirmed that there was no significant improvement in the scores over the three evaluations. Additionally, it should be noted that, although the average scores of the self-evaluation of the identification step slightly increased over the three evaluations, all of these self-evaluation scores could be categorized as indicating the same level of understanding, which is 'Understand.' Consequently, this finding is consistent with the discussion in section 5.1.3.1 that the low-proficiency Thai EFL students understood the identification step of DDL and were able to follow this process during their learning English collocations through DDL.

In order to investigate the similarities or differences between the low-proficiency and high-proficiency participants regarding their ability in the identification step, their self-evaluation scores were compared. According to this comparison, the self-evaluation score of the low-proficiency participants ($\overline{X}$ = 3.63) was slightly higher than that of the high-proficiency participants ($\overline{X}$ = 3.63); however, this difference was not statistically significant. That is, both the low-proficiency and high-proficiency Thai EFL students estimate their ability in the identification step of DDL in the first evaluation round as being at the level of 'Understand,' with their

evaluation scores not being significantly different. From this, it can possibly be concluded that both the low-proficiency and high-proficiency Thai EFL students were able to understand the identification step at almost the same level. Similarly, the comparison between the second self-evaluation score in the identification step of the low-proficiency participants ($\overline{X}$ = 3.83) and that of the high-proficiency participants ($\overline{X}$ = 3.58) did not show any significant difference. This means that, although the second self-evaluation score of the low-proficiency participants was slightly higher than that of the high-proficiency participants, this difference was not significant.

As a result, it can be concluded that, based on the self-evaluation score in the second round, both the low-proficiency and high-proficiency Thai EFL students identified their ability to follow the identification step of DDL as being at the same level of understanding. For the third round of the self-evaluation in the identification step, the comparison between the low-proficiency participants' self-evaluation score ($\overline{X}$ = 3.99) and the high-proficiency participants' self-evaluation score ($\overline{X}$ = 3.79) did not show any significant difference. In other words, both the low-proficiency and high-proficiency participants reported their understanding about the identification step to be at almost the same level during the third round of self-evaluation. Consequently, this revealed that both the low-proficiency and high-proficiency Thai EFL students reported their ability in the identification step of DDL at the same level of understanding.

In conclusion, the findings of the present study suggest that both low-proficiency and high-proficiency Thai EFL students, as reflected through the Can-do Statement Checklist, understood and were able to follow the identification step of DDL, and there was no significant difference in their level of understanding as reported over the three self-evaluations. There are several possible factors making Thai EFL students evaluate their understanding about the Identification step at the level of 'Understand'. The first possible factor is that the Identification step is not complex when compared to Classification step and Generalization step. To follow the Identification step, DDL learners just carefully read the questions in order to identify the keyword. The background and prior knowledge regarding English collocation is another possible factor that facilitates DDL learners during the Identification step. When learners know about types of English collocations, it is easier for them to

identify the keywords (i.e. nodes) and put them into the SERCH box to let the program find the collocates.

5.1.3.3 Self-evaluation scores of the Classification process of DDL

Based on the self-evaluation scores of the Classification step of the high-proficiency participants, the comparison between the self-evaluation score in the first round ($\overline{X}$ = 3.25) and in the second round of the evaluation ($\overline{X}$ = 3.31) indicated that there was no significant difference between these evaluation scores. However, a significant improvement in score was demonstrated when comparing the self-evaluation score in the second round ($\overline{X}$ = 3.31) with that score in the third round ($\overline{X}$ = 3.63). In spite of some significant increases in the self-evaluation score, the comparison among the scores for the three rounds of the high-proficiency participants' self-evaluation of the Classification step did not demonstrate any significant difference. This means the high-proficiency participants' level of understanding was not significantly different over the three evaluations and all of the self-evaluation scores could be categorized in the level of 'Understand.' This finding confirmed that the high-proficiency Thai EFL students already understood the Classification step of DDL from the beginning of using DDL. That is, the Classification step of DDL may not be difficult or problematic for high-proficiency Thai EFL students based on their three self-evaluations.

For the low-proficiency Thai EFL students, the comparison data of self-evaluation scores showed that the score in the first round ($\overline{X}$ = 3.67) was not significantly different from the score in the second round of the evaluation ($\overline{X}$ = 3.83). Similarly, the comparison between the self-evaluation scores of the second round ($\overline{X}$ = 3.83) and third round (M = 4.02) did not show any significant difference between these two sets of the score. To confirm the statistically insignificant difference among the three self-evaluation scores, a comparison of the self-evaluation scores among the three rounds was conducted and it was found that, although the average scores of the self-evaluation of the Classification step slightly increased over the three evaluations, these differences did not exhibit any significant improvement. However, the findings of the evaluation-score indicated that the low-proficiency participants identified their ability in the Classification step as being at the level of 'Understand' over the three evaluation rounds. Consequently, this finding is consistent with the discussion in section 5.1.3.1 that the low-proficiency Thai EFL

students understood the Classification step of DDL and were able to follow this process during their learning English collocations through DDL.

To examine the similarities or differences between the low-proficiency and high-proficiency participants regarding their ability in the Classification step, a comparison of their self-evaluation scores was performed. With reference to the comparison of the first self-evaluation regarding the Classification step, the self-evaluation score of the low-proficiency participants ($\overline{X}$ = 3.67) was significantly higher than that score of the high-proficiency participants ($\overline{X}$ = 3.25). Although a significant difference was shown in this comparison, both the self-evaluation scores could be categorized as being at the same level of understanding, which is 'Understand.' This means that both the low-proficiency and high-proficiency Thai EFL students identified their ability in the Classification step of DDL in the first round as being at the level of 'Understand.' Similarly, the comparison between the second self-evaluation score in the Classification step of the low-proficiency participants ($\overline{X}$ = 3.83) was significantly higher than that score of the high-proficiency participants ($\overline{X}$ = 3.31). In spite of this significant difference, the self-evaluation scores of both the low-proficiency and high-proficiency participants could be classified as being at the level of 'Understand.' As a result, it can be concluded that, based on the self-evaluation scores in the second round, both the low-proficiency and high-proficiency Thai EFL students evaluated their ability to follow the Classification step of DDL as being at the same level of understanding. For the third round of the self-evaluation in the Classification step, the comparison between the low-proficiency participants' self-evaluation score ($\overline{X}$ = 4.02) and the high-proficiency participants' self-evaluation score ($\overline{X}$ = 3.63) demonstrated a significant difference. These self-evaluation scores of both the low-proficiency and high-proficiency participants, however, could be grouped as being at the same level of understating, which is 'Understand.' Consequently, it was found from the third round of the self-evaluation that both the low-proficiency and high-proficiency Thai EFL students reported their ability in the Classification step of DDL as being at the same level of understanding.

To summarize, the findings of the present study indicated that both low-proficiency and high-proficiency Thai EFL students, as reflected through the Can-do Statement Checklist, understood and were able to follow the Classification step of DDL at the same level of understanding. One of the possible factors that make

Classification step is not too difficult for DDL learners is that the corpus data in the form of concordance lines provide them with collocation patterns along with the contexts. These contexts help learners when they have to group or classify a particular collocation pattern. The familiarity with DDL process after using it for a while also another factor makes the Generalization step is quite comprehensible for them. However, it should be noted that the low-proficiency participants marked their ability with a significantly higher score over the three self-evaluation rounds.

5.1.3.4 Self-evaluation scores of the Generalization process of DDL

Based on the self-evaluation scores of the Generalization step of the high-proficiency participants, the comparison between the score in the first round (*M* = 2.85) and in the second round of the evaluation ($\overline{X}$ = 3.29) demonstrated a significant improvement in the self-evaluation scores. The improvement was also significant when comparing the self-evaluation score in the second round ($\overline{X}$ = 3.29) with the self-evaluation score in the third round ($\overline{X}$ = 3.85). A significant increase was also demonstrated when comparing the high-proficiency participants' self-evaluation scores of the Generalization step over the three self-evaluation rounds. In addition to the significant increase in the high-proficiency participants' self-evaluation score, it also should be noted that the self-evaluation score of the first round could be categorized as being at the level of 'Moderately Understand,' but the students' levels of understanding then improved in the second and the third evaluation rounds. That is, the high-proficiency participants identified their level of understanding about the Generalization step as being at the level of 'Understand' in the second and the third round of the self-evaluation. According to the finding of the present study, it then might be concluded that the high-proficiency Thai EFL students significantly improved their level of understanding about the Generalization step of DDL over the three evaluation rounds, especially between the first round and the second round.

For the self-evaluation scores of the Generalization step of the low-proficiency Thai EFL students, the comparison showed that their self-evaluation score in the first round ($\overline{X}$ = 3.56) was not significantly different from the score in the second round of the evaluation ($\overline{X}$ = 3.60). Similarly, the comparison between the self-evaluation score of the second round ($\overline{X}$ = 3.60) and that of the third round ($\overline{X}$ = 3.75) did not demonstrate any significant difference. Additionally, the comparison of

the self-evaluation scores among the three rounds of the evaluation also confirmed that there was no significant improvement of the self-evaluation score over the three evaluation rounds, and although the average scores of the low-proficiency participants' self-evaluation of the Generalization step slightly increased over the three evaluation rounds, all of the self-evaluation scores could be classified as being at the level of 'Understand.' Therefore, the findings of the present study indicated that the low-proficiency Thai EFL students identified their ability in the Generalization step as being at the level of 'Understand' over the three evaluation rounds. Consequently, this finding is consistent with discussion in section 5.1.3.1 that the low-proficiency Thai EFL students understood the Generalization step of DDL and were able to follow this process during their learning English collocations through DDL.

In order to identify the similarities or differences between the low-proficiency and high-proficiency participants regarding their ability in the Generalization step, a comparison of their self-evaluation scores was conducted. According to the comparison of the first self-evaluation, the self-evaluation score of the low-proficiency participants ($\overline{X} = 3.56$) was significantly higher than that of the high-proficiency participants ($\overline{X} = 2.85$). In addition to this significant difference, their self-evaluation scores were also classified in different levels of understanding. That is, the low-proficiency participants reported in the first self-evaluation round that they understood the Generalization step, but the high-proficiency participants only identified their understanding as being at a lower level, namely 'Moderately Understand.' The possible reason why the high-proficiency participants reflected that they only moderately understood the Generalization step is that this step is the most difficult step of DDL and the high-proficiency participants may have needed more time to practice. This is reflected in the high-proficiency participants' self-evaluation score in the second round, which was significantly improved. With reference to the comparison of the second self-evaluation score, there was no significant difference between the evaluation score of the low-proficiency participants and that of the high-proficiency participants and both their scores could be classified at the same level of understanding, which is 'Understand.' This means both the low-proficiency and high-proficiency Thai EFL students estimated their ability in the Generalization step of DDL in the second evaluation round as being at the level of 'Understand,' with their

evaluation scores not being significantly different. Similarly, the comparison between the third self-evaluation score in the Generalization step of the low-proficiency participants ($\overline{X}$ = 3.75) and that score of the high-proficiency participants ($\overline{X}$ = 3.85) did not exhibit any significant difference. This means that, although the second self-evaluation score of the low-proficiency participants was slightly higher than the self-evaluation score of the high-proficiency participants, this difference was not significant. As a result, it can be concluded that, based on the self-evaluation score in the second round, both the low-proficiency and high-proficiency Thai EFL students identified their ability to follow the Identification step of DDL as being at the same level of understanding. For the third round of the self-evaluation, the comparison between the low-proficiency participants' self-evaluation score ($\overline{X}$ = 3.99) and the high-proficiency participants' self-evaluation score ($\overline{X}$ = 3.79) did not demonstrate any significant difference. In other words, both the low-proficiency and high-proficiency participants similarly reported their understanding of the Generalization step as being at the level of 'Understand' in the third round of self-evaluation. Consequently, the results from the third round of the self-evaluation revealed that both the low-proficiency and high-proficiency Thai EFL students understood and were able to follow the Generalization step of DDL.

To sum up, the findings of the present study indicated that both the low-proficiency and high-proficiency Thai EFL students, as reflected through the Can-do Statement Checklist, understood and were able to follow the Generalization step of DDL and there was no significant difference in their level of understanding in the second and the third round of the self-evaluation. However, it should be noted that there was a significant difference reported in the first round of the evaluation. That is, the high-proficiency participants reflected that they moderately understood the Generalization, while the low-proficiency participants reported that they understand this step. One of the possible reasons why the high-proficiency participants only indicate their ability as being at the level of 'Moderately Understand' in the first round of evaluation is that they needed more time to practice this step. This possible reason is reflected in the significant improvement of the high-proficiency participants' level of understanding in the second and third rounds of the self-evaluation. The high-proficiency participants evaluates their ability in the Generalization step as being at the level of 'Understand' in the second and third self-evaluation rounds.

5.1.3.5 DDL learning procedures and problem-solving strategies of Thai EFL students' leaning

For a more detailed discussion and to arrive at conclusions regarding Thai EFL students' DDL learning procedures and problem-solving strategies during the application of DDL to learn English collocations, the qualitative data collected from the Think-aloud Task and Students' Reflection was integrated and triangulated with the aforementioned quantitative data collected from the Can-do Statement Checklist. With regard to the DDL learning procedures, the qualitative data from the think-aloud task transcriptions of the selected 12 participants, comprising 6 low-proficiency participants and 6 high-proficiency participants, indicated that these participants generally understood and were capable of following the overall DDL procedures, albeit with some difficulties. The findings from the think-aloud task about the participants' overall ability to learn English collocations through DDL were supported by the results collected from the students' reflections. Based on the information from the reflections, most of the participants indicated that the DDL method is generally understandable for them. That is, 66.67% of the high-proficiency participants and 45.83% of the low-proficiency participants reflected that they were capable of following the overall DDL procedures, albeit with a few difficulties. Although there were no comments or reflections reporting that the participants completely did not understand the overall DDL procedures, the information from the students' reflections indicated that both the low-proficiency and high-proficiency participants can encounter some difficulties while learning English collocation through DDL.

One of the problems reflected by the participants is that the overall DDL procedures are quite complicated. According to the findings from the students' reflections, there were 12 comments (27.27%) from the high-proficiency participants and 12 comments (28.57%) from the low-proficiency participant indicating that the DDL procedures are complicated. However, the participants did not consider this problem as too much of an obstacle for them because both the high-proficiency and low-proficiency participants also stated that after regularly practicing DDL, they were able to follow the DDL procedures skillfully. This finding is consistent with the previous studies conducted by Sripicharn (2002), in which the participants reported some difficulties during the first time of taking concordance-based lessons, but they soon became more familiar with this method after going through a few lessons. This

means that regular practice is one of the recommended problem-solving strategies to effectively handle the complicated steps involved in DDL, and it seems to be an effective strategy because most participants reflected that they were ultimately able to follow the DDL procedures. This conclusion resonates with Sripicharn (2002), who confirmed that the regular practice of DDL lessons is significant to becoming a successful DDL learner. Sripicharn (2002) also concluded that DDL learners might have needed the intensity and a longer period of exposure to concordance-based lessons to develop their context observation skills. Consequently, the findings from both the think-aloud task and the reflections of the present study revealed that, after regular practice, the Thai EFL students gained the ability to use DDL to facilitate their English collocations in general.

Although both low-proficiency and high-proficiency Thai EFL students understand the overall procedures involved in DDL, an in-depth investigation on the participants' DDL learning steps was performed individually to help reach a comprehensive conclusion and to inform the discussion about DDL learning procedures and problem-solving strategies. Consequently, based on the investigation on each individual step of the DDL method, it was found that there were some differences in DDL learning skills and problem-solving strategies utilized by the participants in the present study. These differences were also exhibited among the participants within the same proficiency group and across the participants of the different proficiency groups.

In terms of the Identification step, all of the six high-proficiency participants reflect though the think-aloud task that this step is relatively easy and they did not experience any problems in this step of DDL. For instance, the high-proficiency participants were capable of identifying the examined keywords from the questions in the collocation exercises and they were able to make a decision on selecting the appropriate words to put into the search page of the corpus. These participants also informed that their background knowledge about English collocations helped them figure out the type of each collocation tested in order to correctly choose the appropriate word type for its possible collocate. This finding was supported by the results from the students' reflections. Based on the data obtained from the reflections, problems with the Identification step was the least mentioned comments by the high-proficiency participants, with only 5 reflections out of 44 comments (11.36%), indicating that most of the high-proficiency participants did not

seem to have problems with the Identification step. Therefore, according to the qualitative data of the present study obtained from the think-aloud task and students' reflections, it can be logically concluded that the high-proficiency Thai EFL students understood the Identification step of DDL and were capable of following this step. This finding is also consistent with the aforementioned quantitative data collected from the Can-do Statement Checklist, where the high-proficiency Thai EFL students indicated their level of understanding in the Identification step at the 'Understand' level over the three self-evaluation rounds. Hence, all of the findings of the present study confirm that high-proficiency Thai EFL students can understand and follow the Identification step of the DDL method without any trouble.

Like the high-proficiency participants in the present study, the six low-proficiency participants informed during the think-aloud task that they understood and were able to do the Identification step of the DDL method. This meant that the low-proficiency participants did not have any trouble with identifying the examined keywords after reading the questions in the collocation exercises and could choose the appropriate words to put into the search option of the corpus. The findings from the students' reflections were also consistent with the data obtained from think-aloud task. That is, only 6 comments out of 41 comments from the low-proficiency participants (14.29%) indicated that the Identification step is problematic and the students' reflections on the difficulty of the Identification step ranked it in the lowest ranking. With reference to the qualitative data from both the think-aloud task and students' reflections, it can be concluded that almost all of the low-proficiency participants understood the Identification step and were capable of following this step of the DDL method. This qualitative data confirmed the quantitative data obtained from the Can-do Statement Checklist, which revealed that the low-proficiency Thai EFL students identified their levels of understanding of the Identification step as being at the 'Understand' level over the three self-evaluation rounds.

Although both the low-proficiency and high-proficiency participants seemed to similarly reflect their understanding of the Identification step at the same level and think that this step is not too difficult for them to follow, the information from the think-aloud task revealed both some differences and similarities in their learning and problem-solving strategies utilized during the Identification step. The first difference in the learning strategies applied in the Identification step is that the high-proficiency participants preferred making predictions about the possible

collocates of the examined keywords and putting both the keyword and its possible collocates into the search box of the 'KWIC' option to verify their predictions; while on the other hand, the low-proficiency participants did not make any prediction on the possible collocates of the examined keywords, and instead they preferred to put only the keywords in the search box of the 'Collocate' option to let the program provide them with the list of possible collocates of each examined keyword.

Even though the Identification step seemed to not be problematic for either the low-proficiency or high-proficiency participants, the information from the think-aloud transcriptions also indicated some problem-solving strategies that were applied by the participants in both proficiency groups in order to successfully identify the examined keywords. For instance, the participants mentioned that they had to carefully read the questions in the collocation exercises to identify the correct keyword. This meant that they sometimes got confused with some of the complicated questions and had to reread the question several times to correctly identify the examined keywords. This was also reflected in the students' reflections of both the low-proficiency and high-proficiency participants. Therefore, it can be concluded that when Thai EFL students get confused with some questions, their main problem-solving strategy is to carefully reread the questions in order to successful identify the correct examined keyword. However, this confusion is not considered a serious problem because they are ultimately able to identify the keyword after rereading the questions. That is to say, this is a practical and useful strategy for them.

With regard to the Generalization step of DDL, both differences and similarities in terms of learning and problem-solving strategies were shown to exist between the low-proficiency participants and the high-proficiency participants. According to the qualitative data obtained from the think-loud transcriptions of the 6 selected high-proficiency participants, the Generalization step did not cause them any trouble; however, they reported that they spent a lot more time reading the concordance lines retrieved from the corpus compared to the time they needed for identifying the examined keywords from the questions during the Identification step. This indicates that the high-proficiency participants understood the Classification step and were able to follow this step, albeit needing to spend a lot of time to do so. This finding also resonated with the information collected from the students' reflections of the high-proficiency participants. Based on the qualitative data of the reflections, there were only 7 comments out of 44 (15.90%) indicating that the Classification step

was difficult and time consuming for them. This means the most of the high-proficiency participants understood the Classification step and were capable of analyzing the retrieved concordance lines. In terms of the problem-solving strategies that the high-proficiency participants used to facilitate them during the Classification step, they also mentioned that the KWIC format helped save time when scanning the concordance lines because the keywords and collocates were highlighted and put in the middle of sentences. That is, most of the high-proficiency participants did not think scanning the concordance lines was difficult or time consuming. According to the qualitative data obtained from the students' reflections and the think-aloud task, the findings of the present study allow us to comprehensively conclude that the high-proficiency Thai EFL students understood the Classification step and were able to explore the concordance lines retrieved from the corpus. Similar to the high-proficiency participants, the low-proficiency participants expressed, through the think-aloud task, that the Classification step is more difficult than the Identification step and thus they had to spend relatively longer exploring the concordance lines. This qualitative data was consistent with the results collected from the students' reflections, in which there were 11 comments out of 42 comments (26.19%) reflecting that it was difficult and takes time to explore and read the concordance lines retrieved from the corpus. In spite of spending a lot more time, the low-proficiency participants were ultimately able to explore the concordance lines in general. When compared to the high-proficiency participants, the low-proficiency participants spent a relatively longer time on the Classification step because they had to scan the concordance lines of each possible collocate retrieved from the 'Collocate' option of the corpus. Unlike the high-proficiency participants, these low-proficiency participants did not make a prediction on the possible collocate of the keywords to put into the search box of the KWIC option. This strategy meant the low-proficiency participants had to use more time scanning the concordance lines of each possible collocate one by one to find possible collocates. However, some of the low-proficiency participants reported that, during their think-aloud task, they scanned the possible collocates with the high frequency of occurrence first. This assisted them and helped reduce the amount of time they needed to spend on the Classification step. Therefore, the time consumed may not be overall a serious problem or significant obstacle for the low-proficiency participants during the Classification step. As a result, it can be concluded from the findings of the present study that, although both the low-proficiency and high-

proficiency Thai EFL students had to spend a lot of time exploring the concordance lines, they understood and were able to follow the Classification step. These qualitative findings also confirmed the quantitative data collected from the Can-do Statement Checklist that showed that both the low-proficiency and high-proficiency Thai EFL students similarly evaluated their understanding of the Classification step of DDL as being at the level of 'Understanding' over the three self-evaluation rounds.

The final step of the DDL procedures, which is Generalization, seems to often be the most difficult step for both low-proficiency and high-proficiency Thai EFL students. To counter this difficulty, a variety of different problem-solving strategies can be utilized during this step. According to the qualitative data collected from the think-aloud transcriptions, the high-proficiency participants informed that the Generalization step is the most time-consuming and difficult step of DDL and requires logical consideration to construct the rules of collocation usage. This finding was consistent with the findings from the reflections of the high-proficiency participants. Based on the information from the students' reflections, there were 20 comments out of 44 comments (45.45%), meaning this issue was ranked 1st, indicating that most of the high-proficiency participants encountered a lot of difficulties in constructing the rules of collocation usage and finding the correct answers for the collocation exercises even after exploring the concordance lines. However, the high-proficiency participants were eventually able to construct the rules of collocation usage and provided the best answers to the collocation questions, albeit needing to spend a lot of time and to apply various problem-solving strategies to do so.

As a lot of problem-solving strategies were utilized by the high-proficiency participants during the Generalization step of DDL, we investigated these strategies to reach a comprehensive conclusion regarding the DDL learning procedures. Based on the information from the think-aloud transcriptions of the high-proficiency participants, the problem-solving strategy most frequently used was to consult the contexts provided with the concordance lines. The high-proficiency participants informed how, during the think-aloud task, the provided contexts were very useful to help them to get the correct answers or the most appropriate collocates for the examined keywords, especially in cases when the corpus provided them with more than one possible collocate and they had to analyze the provided contexts in order to decide on the correct answer.

The data obtained from the students' reflections of the high-proficiency participants also confirmed that using the context in the concordance lines was the most practical and useful strategy during the Generalization step. There were 18 comments (42.86%) about this strategy, which make it the most frequently commented on and reflecting that the high-proficiency participants used the context provided with the keywords in the concordance lines to help them figure out the rules of collocation usage and to ensure they get the right answers. Another strategy utilized by the high-proficiency participants during the Generalization step involved using various search options of COCA to get the right answers. Some of the high-proficiency participants stated through the think-aloud transcriptions that if they are uncertain with the answer retrieved from a search option that they use another search option to make sure that they get the correct answer for the collocation usage. The use of various search options was also reported through the students' reflections by some of the high-proficiency participants. There were 10 comments (23.81%), reflecting that the high-proficiency participants used various search options to ensure their answers were correct, especially when more than one possible collocate occurred with an examined keyword.

According to the think-aloud transcriptions, some high-proficiency participants also mentioned that whenever the 'Collocate' option provided them with more than one possible collocate for an examined keyword, they had to further compare the frequency of occurrence of each possible collocate through the use of the 'FREQUENCY' option. After looking at the frequency of occurrence, they then finally had to ensure their answer was correct by considering the context provided with the concordance lines retrieved from 'KWIC' option. This meant they applied various search options in order to construct the rules of collocation usage (Generalization step). As mentioned above, some high-proficiency participants also considered the frequency of occurrence of each possible collocate to ensure their answer was correct during the Generalization step, so considering the frequency of occurrence of collocates is regarded as another strategy utilized by the high-proficiency participants. Further, the information collected from the students' reflections also confirmed that this was a strategy utilized by the high-proficiency to assist them during the Generalization step of DDL. There were 2 comments (4.76%) reflecting that the high-proficiency participants considered and compared the frequency of occurrence of each possible collocate as well. However, it should be

noted that this strategy was not frequently used by all the high-proficiency participants. Also, in this strategy, after looking at the frequency of occurrence, they then had to analyze the context provided with the concordance lines retrieved from KWIC before making a final decision about the most appropriate collocation usage. This means the high-proficiency participants believed that, although considering the frequency of occurrence of each possible collocate could possibly facilitate them during the Generalization step, analyzing the context provided with the concordance lines seemed to be a more useful and practical problem-solving strategy. Interestingly, a few low-proficiency participants informed through their reflections that they used Google to check their answers. Based on the findings from the students' reflections, there were 2 comments (4.76%) reflecting that some of the low-proficiency participants applied other search methods, like Google, to arrive at their answers. This means that, apart from using the corpus, some of the high-proficiency participants applied other programs to facilitate their English collocations learning as well.

Similar to the high-proficiency participants, the low-proficiency participants reported that the Generalization step seemed to be the most difficult and problematic for them. Based on the qualitative data collected from the think-aloud transcriptions, most of the low-proficiency participants revealed that they had to spend a large amount of time and effort constructing the rules of collocation usage from the concordance lines retrieved from the corpus. The low-proficiency participants also mentioned the difficulty of the Generalization step through their reflection reports. In a nutshell, the qualitative data collected from the students' reflections of the low-proficiency participants was consistent with the data obtained from their think-aloud tasks. According to the students' reflections of the low-proficiency participants, there were 13 comments out of 42 comments (30.95%), ranking this issue in 1st position and reflecting how most of the low-proficiency participants believed that constructing the rules of collocation usage and finding the correct answers to the collocation exercises after exploring the concordance lines were very difficult. However, albeit needing to spend a lot of time and effort to tackle this step, most of the low-proficiency participants revealed that they were ultimately able to follow the Generalization step. In line with the Generalization step seeming to be the most difficult and problematic step of DDL, the low-proficiency participants had to utilize various problem-solving strategies during this step to be able to construct the rules of collocation usage.

Like those of the high-proficiency participants, the think-aloud transcriptions of the low-proficiency participants revealed that they frequently used the context provided with the concordance lines to help them figure out the rules of collocation usage. The data obtained from the students' reflections of the low-proficiency participants also resonated with their think-aloud transcriptions and this confirmed that using the context provided with the concordance lines was a practical and useful strategy during the Generalization step. There were 8 comments (25.81%) indicating that the low-proficiency participants used the context provided with the keywords in the concordance lines to help them arrive at their answers from constructing the rules of collocation usage from the concordance lines. In addition to analyzing the context of the concordance lines, the use of various search options was also reported through the students' reflections of the low-proficiency participants. Based on the low-proficiency participants' reflections, there were 7 comments (22.58%) reflecting that the low-proficiency participants had to use more than one search option to determine their answers, especially when more than one possible collocate could occur with the examined keyword. The qualitative data of the think-aloud transcripts also confirmed that various search options were applied by the low-proficiency participants during the Generalization step. With regard to the think-aloud transcriptions, most of the low-proficiency participants mentioned that, although they preferred using the 'Collocate' option, whenever this option provided them with more than one possible collocate, they used other search options, particularly the 'KWIC' option and 'FREQUENCY' option. Most of the low-proficiency participants analyzed and considered the context provided with the concordance lines retrieved from 'KWIC' option to determine their answers; however, one low-proficiency participant reporting that during the think-aloud task he determines his answers by looking at the frequency of occurrence of each possible collocate without analyzing the context provided with the examined keywords in the form of concordance lines. Therefore, considering the frequency of occurrence of each possible collocate is another strategy utilized by some of the low-proficiency participants. The findings from the students' reflections also confirmed that considering the frequency of occurrence is another one of the low-proficiency participants' problem-solving strategies they use during the Generalization step. With reference to the reflections of the low-proficiency participants, there was 1 comment (3.23%) reflecting that some of the low-proficiency participants considered and compared the frequency of occurrence of each possible

collocate to ensure their answers were correct. However, it should be noted that considering the frequency of occurrence is not a frequently used strategy by all of the low-proficiency participants and that most of the low-proficiency participants preferred consulting the context provided with the concordance lines to ensure their answers were correct.

5.1.4 Thai EFL students' attitudes toward learning English collocations through DDL

Apart from investigating the effectiveness of DDL on the collocational knowledge development of Thai EFL students, the present study also aimed to evaluate Thai EFL students' perceptions and attitudes toward learning English collocations through DDL. According to the overall results elicited from the three major data sources utilized, namely the questionnaires, students' written reflections, and think-aloud transcripts, it was revealed that both low-proficiency and high-proficiency Thai EFL students have, at the same time, both some positive attitudes and some negative attitudes toward learning English collocations through DDL. In other words, Thai EFL students perceive both advantages and disadvantages in the use of the DDL method in collocation learning. For a more comprehensive conclusion, the findings from the aforementioned data sources were triangulated and discussed in the following sections.

5.1.4.1 Thai students' attitudes toward learning English collocations

According to the reported attitudes of Thai EFL students toward learning English collocations as collected in the questionnaire, most of the high-proficiency and low-proficiency participants had a positive attitude about learning English collocations and perceived they could gain a lot of advantages through their increased collocational knowledge. The qualitative data collected from the semi-structured interview session also confirmed that both the low-proficiency and high-proficiency participants believed that collocational knowledge is important for language learners and essential to become a proficient user of English. They also stated that they would like to improve their English collocational knowledge so that they would be able to communicate in English more fluently and naturally, like a native-speaker of English. Although both the low-proficiency and high-proficiency participants believed that learning English collocations was necessary, it should be noted that, based on the comparison between the reported attitudes of the low-

proficiency and high-proficiency participants collected from the questionnaire, the low-proficiency participants seemed to have more positive attitudes toward English collocational knowledge than the high-proficiency participants when comparing their reported perceptions about this aspect. In spite of their significantly higher positive attitudes, from the findings of the present study, it can be concluded that both low-proficiency and high-proficiency Thai EFL students perceived some advantages to gaining increased collocational knowledge and hence they wanted to improve their knowledge of English collocations. These findings are consistent with many previous studies (i.e., Hashemi et al., 2012; Hill, 2000; Marton, 1997; McKeown & Radev, 2000; Nation, 2008), where the importance of collocational knowledge is perceived as being significant for anyone wanting to become a competent user of English. These studies expressed how English collocations are recognized as one of the core elements and key lessons in language learning and all remark that the most recognizable benefit of learning collocations is that learners will sound more native like because collocational knowledge allows learners to say or write things like a native speaker. The findings of the present study similarly confirmed the importance of teaching English collocations in EFL classrooms, as well as being in line with recommendations given by Hill (2000), who expressed that EFL students should be taught collocations.

5.1.4.2 Perceived advantages and positive attitudes of Thai EFL students toward learning English collocations through DDL

In terms of the attitudes toward the application of DDL to facilitate English collocations learning, the present study found that Thai EFL students have both some positive attitudes and some negative attitudes toward learning English collocations through DDL. According to the quantitative data elicited from the questionnaire, the low-proficiency participants seemed to have a significantly higher positive attitude toward learning English collocations; whereas the high-proficiency participants mostly reported that they mostly only partly agreed with the overall statements indicating the positive attitudes toward learning English collocations through DDL; on the other hand, the low-proficiency participants generally indicated that they agreed with the overall statements related to the positive attitudes toward learning English collocations through DDL. The questionnaire results suggest that the low-proficiency participants possibly perceived the advantages of DDL to be greater than the high-proficiency participants did. This evidence also implies that low-

proficiency Thai EFL students have a higher motivation to learn English collocations through DDL. The findings of the present study are similar to a previous study conducted by Hardley (2002). According to the results from Hardley's study, beginner-level or low-proficiency learners demonstrated a high motivation to learn through the DDL approach because they believed that this learning method would help them improve their English.

Although the quantitative data from the questionnaire results showed a significant difference between the positive perceptions of the low-proficiency participants and those of the high-proficiency participants, the qualitative data elicited from the students' reflections demonstrated some agreements regarding the perceived advantages of DDL between the high-proficiency and low-proficiency participants. That is, both the low-proficiency and high-proficiency participants were aware of some advantages of DDL and the distinctive features of the corpus data. Both the low-proficiency and high-proficiency participants viewed the corpus (i.e., COCA) as a convenient tool to learn English collocations as the results from the students' reflections revealed that 42.86% of the high-proficiency participants' made positive comments and 50.00% of the low-proficiency participants' made positive comments reflecting that using COCA is faster than using collocation dictionaries. The qualitative data collected from the interviews also indicated that most of the participants included in the low-proficiency and high-proficiency groups preferred using the corpus data to collocation dictionaries to facilitate them learning English collocations because of its convenience. In other words, it can be concluded from the present study that Thai EFL students believe that using COCA or corpus data to learn English collocations is more convenient than using collocation dictionaries. These findings resonate with the results of a previous study conducted by Chatpunnarangsee (2013). The participants of Chatpunnarangsee's study reported that the corpora are more convenient for learning English collocations than other tools, like a paper-based dictionary or a talking dictionary. However, a few studies in the literature, especially Nam (2010), have reported different findings in terms of the convenience of DDL. The participants of Nam (2010)'s study reported negative attitudes toward the use of a concordance tool and they preferred using a thesaurus or a collocation dictionary as a tool to learn English collocations. The findings of the present study, on the other hand, revealed that most of the participants perceived more advantages of the corpus

data than disadvantages. Consequently, the present study confirmed that DDL is one of the most convenient collocation learning methods.

In addition to its convenience, the corpus (COCA) is believed to be a larger source of collocation data compared to collocation dictionaries. The results of the students' written reflections showed that 8.75% of the high-proficiency participants' positive comments and 7.57% of the low-proficiency participants' positive comments were about the COCA containing more information about English collocations than collocation dictionaries. This indicates that Thai EFL students believe that they can find various collocation patterns and useful information about collocations through the use of corpus data. Due to it being more convenient and containing a larger source of collocations, DDL is perceived to be one of the most effective and practical ways to learn English collocations by most Thai EFL students. Both the low-proficiency and high-proficiency participants also informed through their reflection writings that DDL is effective and practical for learning English collocations. Apart from the comments regarding the convenience of DDL, there were also 10 positive comments (28.57%) from the high-proficiency participants and 12 positive comments (30.00%) from the low-proficiency participants reflecting that DDL is one of the most effective and practical methods to learn English collocations. From the results of the present study, it can be concluded that both high-proficiency and low-proficiency Thai EFL students consider DDL as one of the most effective and practical collocation learning methods.

Apart from providing collocational knowledge, DDL is also recognized as an effective learning method that contributes to the development of vocabulary knowledge. Most of the low-proficiency and high-proficiency Thai EFL students believed that as well as learning English collocations, they could also learn the meaning of other words included in the concordance lines. The participants' views regarding the benefits of DDL in helping them improve their vocabulary knowledge were reported in the questionnaire, the written reflections, and the interviews. Based on the quantitative data elicited from the questionnaire results, both the low-proficiency and high-proficiency participants agreed that they could learn new vocabulary contained in the concordance lines retrieved from the corpus. These participants also confirmed through their reflection writings (20.00% of the positive comments from the high-proficiency participants and 12.50% of the positive comments from the low-proficiency participants) that DDL also provided them with

an opportunity to learn other vocabulary items included in the concordance lines. The qualitative data elicited from the semi-structured interviews also confirmed such benefits of DDL on the improvement of vocabulary knowledge. According to the interview transcripts, most of the low-proficiency and high-proficiency participants revealed that they were able to gain a lot of vocabulary knowledge by reading the concordance lines retrieved from the COCA. These results of the present study confirmed the findings of Geluso & Yamaguchi (2014)'s study, where most of the participants in their study believed that, apart from learning collocation patterns, searching the meaning and usage of collocations through concordance stimulated their interest in learning new vocabulary. Interestingly, some of the participants also reported that, besides learning the target collocations and new vocabulary, they unintentionally learned new English collocations that they were not intentionally looking for while analyzing the contexts provided with the target collocations or examined keywords. These participants indicated that they sometimes spotted other word patterns that usually appear together and realized that these pairs of words could possibly be considered as English collocations. This finding about the accidental learning of new collocations is consistent with the results of a previous study conducted by Chatpunnarangsee (2013). She concluded that some participants of her study were satisfied when they accidentally discovered language patterns or collocations while scanning the concordance lines. These participants perceived this unintentional learning as a delightful byproduct of the corpus-based learning. With respect to the findings of the present study, it can be concluded that Thai EFL students positively perceive that DDL can effectively contribute to the development of both collocational and vocabulary knowledge.

In conclusion, the aforementioned advantages of DDL support that both high-proficiency and low-proficiency Thai EFL students see the benefits of DDL in helping them learn English collocations more conveniently and efficiently and indicate that they both have positive attitudes toward this practical method of learning. They also believe that DDL can help them improve their knowledge of vocabulary as well. With respect to the perceived advantages and positive attitudes toward learning English collocations through DDL, the findings of the present study are consistent with many previous studies (i.e., Binkai, 2012; Chatpunnarangsee, 2013; Chao, 2010; Geluso & Yamaguchi, 2014; and Sripicharn, 2002), where the study participants reported some positive attitudes toward learning collocations

through concordance. These participants also believed that corpus-driven learning is one of the most appropriate methods to learn English collocations. As most participants of these previous studies had positive perceptions toward DDL, they believed that they would continue to use a corpus as well as would recommend this learning approach to other learners of English. This is similar to the perceptions of most of the participants of the present study who reported in the questionnaire that they will continue using DDL for their learning English collocations in the future.

5.1.4.3 Perceived disadvantages and negative attitudes of Thai EFL students toward learning English collocations through DDL

The questionnaire results regarding the negative attitudes of Thai EFL students toward learning English collocations revealed that there was no significant difference between the attitudes of low-proficiency and high-proficiency participants. That is, both the low-proficiency and high-proficiency participants partly agreed with the statements indicating some disadvantages of DDL. According to the questionnaire results, most of the high-proficiency participants agreed that the DDL procedures are quite complicated and require a lot of time and effort during the initial stages, while the low-proficiency participants only partly agreed with this negative statement; however, the participants of both proficiency groups reported through their reflection writings that they were able to follow these steps faster after regular practice. Some negative feedback about the complicated steps involved in the DDL method was also reported in the students' written reflections and the interview transcripts as well. Overall, 50.00% of the high-proficiency participants' negative comments and 52.08% of the low-proficiency participants' negative comments reflected that DDL requires a lot of effort and practice in order to fully comprehend its procedures. The interview transcriptions of both the low-proficiency and high-proficiency participants also highlighted the complicated procedures involved in DDL. These participants informed during the interview sessions that they it took them a relatively long time to understand the DDL procedures during the first time of taking the DDL classes; however, later as they became more familiar with the DDL procedures and after practice, they were able to follow these steps faster. It can, therefore, be concluded from the findings elicited from the questionnaire, the students' reflection writings, and interview transcripts that Thai EFL students perceive the complicated procedures involved in DDL as being one of its main drawbacks; however, most of them can overcome this after some time of learning

English collocations through DDL and by practicing several times. That is to say, the complicated steps involved in DDL do not prevent Thai EFL students from achieving their ultimate goal of learning English collocations through DDL.

Another perceived disadvantage of DDL is the sentence pattern of the concordance lines retrieved from the corpus (COCA). The questionnaire results showed some negative attitudes from both the low-proficiency and high-proficiency participants toward the incomplete sentences in the concordance lines. The high-proficiency participants agreed that the incomplete sentences in the concordance lines caused them some difficulties in learning English collocations through DDL, while the low-proficiency participants only partly agreed with this perceived disadvantage of DDL. The qualitative data collected from the students' reflections also revealed this perceived disadvantage regarding the incomplete sentences in the concordance lines. Also, based on the findings from the students' reflections, 11.36% of the high-proficiency participants' negative comments and 16.67% of the low-proficiency participants' negative comments reflected that the cut-down concordance lines made it difficult to comprehend the overall meaning of the sentences. Such negative attitudes toward the incomplete sentences in concordance lines were also reported by Geluso and Yamaguchi (2014). The participants in Geluso and Yamaguchi (2014)'s study reported that as the concordance lines were cut-down, incomplete sentences, they had difficulties in understanding the meaning of such concordances. Based on these findings, it can, therefore, be concluded that Thai EFL students do not like the structure of the concordance lines as incomplete sentences because they think that it is quite difficult to comprehend such cut-down sentences. In other words, Thai EFL students would prefer analyzing complete sentences in the concordance lines and they might perform better if the corpora provide them with such.

The last perceived disadvantage of DDL is not about the DDL procedures themselves, but is related to the corpus system or the facilities utilized, including the Internet connection and computers. The questionnaire results revealed that both the low-proficiency and high-proficiency participants partly agreed that a lack of DDL learning facilities, such as Internet access and computers, is one of the major disadvantages of learning English collocation through DDL. These participants also reported this disadvantage through their reflection writings. The high-proficiency participants provided a number of negative comments, with 9.09% reflecting that the COCA system does not function smoothly and 6.81% indicating that there was a

problem with the Internet access. Similarly, the low-proficiency participants also reflected that the COCA system sometimes malfunctions (8.33%) and they sometimes encounter problems with Internet access (4.16%). The interview data of both the low-proficiency and high-proficiency participants also included some negative feedback regarding the unstable nature of the COCA system and the limited access to the Internet. These participants reported that they sometimes struggled with the COCA system as it did not always function smoothly. They also considered the lack of Internet access as one of the main disadvantages of DDL. The findings about the disadvantages of DDL resulting from the unreliable Internet access and COCA system have also been reported in previous studies; for example, Geluso and Yamaguchi (2014) concluded that, with regard to the difficulty of using corpus, some participants reported that learning to use COCA was quite difficult and the lack of Internet access was problematic. Thus, it can be concluded that, apart from the DDL procedures, other factors, like the corpus system and Internet access, can be considered as obstacles to Thai EFL students learning English collocations through DDL.

5.2 Implications of the Study

With respect to the findings about the effectiveness of DDL on the overall development of Thai EFL students' collocational knowledge, the pedagogical implications of the present study are provided to support the application of DDL on English collocations learning. However, there might be some concerns that language educators should keep in mind when implementing the DDL method in their language classrooms to avoid any possible limitations of this learning method. This means a well-designed DDL lesson should be prepared to achieve the maximum efficiency of utilizing the DDL method. The following section therefore provides some recommendations and guidelines for language learners who would like to improve their collocational knowledge through the application of the DDL method as well as language teachers who would like to apply this method in their classrooms.

Based on the findings of the present study, it is explicitly suggested that a DDL training session should be provided to prepare DDL learners prior to the implementation of this learning method. Although both the low-proficiency and high-proficiency participants in the present study reported that they understood the overall DDL procedures (i.e., Identification, Classification, and Generalization) and were

eventually able to follow these steps, they also reflected that the DDL method is a complicated learning approach that requires clear instructions and guidelines at the initial stages of first taking DDL classes. This means a DDL training session is essential to prepare DDL learners and to maximize the efficiency of this learning method. This requires not only a training session about DDL procedures, but also training on how to operate the corpora utilized as data sources for the concordance lines. This training session should be provided to ensure that DDL learners thoroughly understand the search options of each corpus and are able to effectively operate such search options to retrieve the most suitable concordance lines relevant to their queries. Although DDL is regarded as an autonomous learning method, this does not mean that all students will be able to follow this learning method successfully without proper initial guidance and guidelines. Guan (2013) mentioned that the DDL procedures, especially the Generalization step, may cause issues for some learners who are more familiar with traditional methods that value the memorization of language rules rather than the production of Generalizations. This means that assistance from language teachers and proper guidelines may be required for the first few DDL classes. It is, therefore, important for language teachers who want to apply this learning method to their classes to have a clear understanding of the DDL procedures so that they can prepare appropriate instructions and training sessions, especially when first introducing the DDL method to learners.

In addition to the DDL training session, most of the participants in the present study, in both the low-proficiency and high-proficiency groups, also indicated that they needed regular practice of DDL lessons to enable them to be able to follow the learning procedures smoothly. They reflected that a lot of time and effort are required to understand the complicated steps involved in the DDL method. Indeed, the findings of the present study suggest that DDL learners should be provided with a lot of opportunities to familiarize themselves with this learning method. Language teachers, therefore, should bear in mind that more time and practice are required to allow DDL learners to become used to the DDL procedures. That is, teachers should provide more opportunities for DDL learners to practice the DDL method and to explore a vast amount of corpus data. Although a lot of opportunities to handle corpus data should be provided to DDL learners, this does not mean that teachers should bombard learners with such corpus data without any directions or instructions. Instead, it is also recommended that teachers should provide step-by-step guidelines

or should scaffold DDL activities so that learners will not become confused and will be able to successfully handle a large amount of corpus data. By doing this, DDL learners will become familiar with DDL procedures and will be more able to effectively discover collocation patterns or construct the rules of collocation usage through the corpus data.

Apart from the training sessions and regular practice, the findings from the present study also indicated that low-proficiency DDL learners should be encouraged to make a prediction of the possible collocates of an examined keyword as well as making a good decision on selecting the appropriate words to put into the search page of the corpus so that the amount of time required during the DDL procedures can possibly be reduced. The findings of the present study revealed that the low-proficiency participants spent relatively longer time than the high-proficiency participants in carrying out the DDL procedures, mainly because the low-proficiency participants analyzed the concordance lines of all possible collocates provided in the corpus one by one, rather than making predictions. The high-proficiency participants, on the other hand, always made a prediction about the possible collocates of the examined keyword and put both the examined keyword and its possible collocate in the search box, and so they did not have to analyze the concordance lines of every single collocate provided by the corpus. This meant the high-proficiency participants took a shorter amount of time analyzing the concordance lines. The ability to make a prediction of some possible collocates was also recommended by Chatpunnarangsee (2013), who concluded that successful DDL learners are those who demonstrate the use of several problem-solving techniques, including hypothesizing the possible collocates of examined keywords and planning how to select good words to put into the search box. Teachers, therefore, should encourage DDL learners to make a prediction on a possible collocate for each examined keyword and to make good decisions to select the proper words to put into the search box in order to help the learners save time from analyzing the concordance lines of some irrelevant collocates.

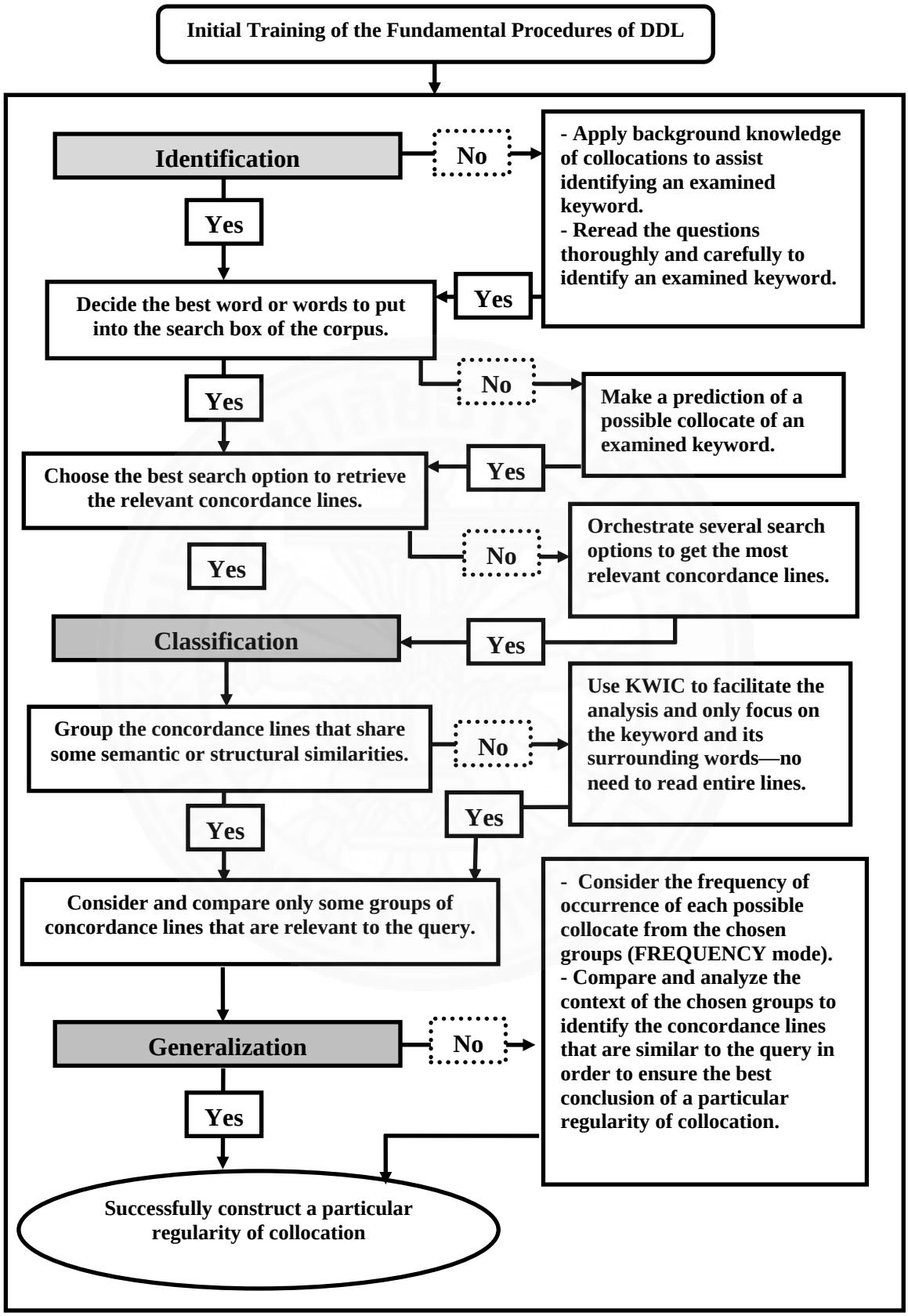
As mentioned earlier in section 5.1, both the low-proficiency and high-proficiency participants encountered a lot of difficulties and problems during the Generalization step when they had to construct the rules of collocation usages from the retrieved concordance lines. Consequently, to help DDL learners overcome such obstacles, the following recommendations and suggestions are provided. With regard to the findings from successful DDL learners who were able to proficiently solve the

problems during the Generalization step, they informed that considering the context provided with the examined keywords was very important to helping them construct the rules of collocation usage. This suggests that DDL learners should be encouraged to analyze the context of the concordance lines whenever they are uncertain or confused with some collocation patterns. For example, when the corpus provides them with more than one possible collocate for an examined keyword, it is recommended that DDL learners should compare and analyze the context provided with the concordance lines to ensure they choose the most appropriate collocation usage for a particular context. It is also suggested that learners should apply their logical thinking ability during this process of comparing and analyzing the context provided with the concordance lines. This is because the logical thinking ability is considered one of the key factors to success in effectively utilizing the corpus data as a linguistic resource to solve collocation problems. Zhen (2005) supported the importance of logical thinking by stating that, unlike with traditional language teaching and a learning environment where learners passively learn from teachers, DDL requires learners to utilize their logical thinking ability to make a self-discovery in order to acquire the language rules and patterns from the examples given in the concordance lines. Teachers, therefore, should find ways to foster learners' logical thinking ability so that learners will be able to effectively handle the retrieved concordance lines and successfully construct the rules of collocation usage from those concordance lines during the Generalization step. In addition to the logical thinking ability, it is recommended that the ability to apply a variety of appropriate search options of a corpus is necessary to maximize the efficiency of the DDL method. In other words, DDL learners should be able to effectively orchestrate various search options to ensure they can determine the most appropriate collocation pattern for each query. According to the findings of this study, most competent DDL learners sometimes have to apply more than one search option to confirm the most appropriate collocate of an examined keyword during the Generalization step. In other words, the ability to effectively orchestrate several search options may be required to find the most appropriate collocation pattern for each particular context. Teachers, therefore, are advised to encourage DDL learners to use more than one search option whenever they encounter some confusion and uncertainty about their answers. Despite taking relatively longer time, the use of more than one search option to ascertain the most

appropriate collocation pattern for a particular context is considered a useful and practical technique.

With respect to the aforementioned recommendations for implementing DDL and the findings of the present study, the researcher would like to propose that the modified DDL procedures with some steps added to the original DDL procedures proposed by Johns (1991) should be introduced to DDL learners to facilitate them learning English collocations. The researcher still supports Johns' (1991) DDL procedures, which emphasize the use of three main steps, i.e., Identification, Classification, and Generalization; however, as recommended by Sripicharn (2002), although DDL is recognized as an effective approach to teach English for Thai EFL students, an adaptation of the DDL tasks is needed to meet Thai EFL students' specific needs. Therefore, the researcher would like to propose a new instructional model with the aim to facilitate Thai EFL students to learn English collocations through DDL and to help them handle the difficulties within the DDL method by applying the problem-solving strategies mentioned in the findings of the present study.

Figure 5.1 The Modified DDL Procedures



As shown in Figure 5.1 above, the most essential step before the implementation of DDL is the initial training of the fundamental processes involved in the DDL method. Although DDL is considered an autonomous learning method in which learners have to take responsibility for managing their own learning, this learning method may not suitable for all learners, especially Thai EFL learners, who are more familiar with a spoon-feeding and deductive teaching approach. The DDL procedures also represent a somewhat complicated learning method, so a novice DDL learner definitely needs clear direction and instruction. Therefore, a training session is required to prepare DDL learners with clear instructions and guidelines at the initial stage of first taking DDL classes in order to maximize the efficiency of this learning method.

After receiving such a training session, DDL learners may still encounter some difficulties during learning English collocations through DDL, so some learning strategies are required to facilitate them handling such obstacles. With reference to Figure 5.1, it is recommended that DDL learners should be able to apply their background knowledge about English collocations whenever they are unable to identify the examined keyword. Apart from using their background knowledge, if DDL learners are confused with a question, they should reread the question carefully and thoroughly in order to come up with the examined keyword. After identifying the examined keyword, the learners should make a prediction about the possible collocate of the keyword so that they can choose the best word or words to put into the search box option. Based on the findings of the present study, learners who make a prediction about the possible collocate and put both the examined keyword along with its possible collocate into the search box of the KWIC option tend to spend a relatively shorter time on the Classification step. This means that DDL learners should select the best search option to retrieve the most relevant concordance lines for their queries. If they are unable to choose the best search option, they need to be able to orchestrate several search options to get the most relevant concordance lines, but this will likely take a longer time. When exploring the retrieved concordance lines during the Classification step, it is recommended that learners should group the concordance lines together that have some common semantic or structural similarities; for example, concordance lines where the examined keyword come after the same verb. If DDL learners are struggling with the grouping process, it is recommended that they should use KWIC to facilitate their analysis of the concordance lines and

should only focus on the keyword and its surrounding words. In other words, they should not read all the concordance lines because this might be confusing as well as time consuming. It is important that DDL learners should consider and compare only the groups of concordance lines that are relevant to their queries to avoid confusion and to save time during the Generalization step. The Generalization step is the most important process in DDL because it determines whether learners are competent or successful DDL learners or not; however, most novice DDL learners encounter a lot of problems and difficulty constructing the rules of collocation usage. With respect to the findings of the present study, most of the successful DDL learners considered the frequency of occurrence of each possible collocate from the chosen groups through the FREQUENCY mode to ascertain the particular regularity of a collocation. It is thus also suggested that DDL learners should compare and analyze the context of the chosen groups to identify the concordance lines that are similar to the query so that they are able to ensure the best conclusion regarding a particular regularity of collocation.

In addition to this instructional model of DDL, Sripicharn (2002) recommended that teachers who would like to apply DDL to their language classrooms should select the activity types that are most appropriate for their learners. Therefore, teachers should consider several factors, such as the learners' English proficiency, familiarity with corpus-based lessons, learners' needs, and the degree of learner autonomy. The most suitable way to implement DDL with a group of novice DDL learners is to combine different activity types and to divide the tasks into different stages. It is suggested that a scaffolding activity may provide some benefits to learners. That is, teachers should possibly start with a series of concordance-based activities with a more teacher-centered lesson and then gradually move forwards to an independent concordance-based task, where DDL learners independently take an action for their own learning.

5.3 Recommendations and Suggestions for Future Studies

Although the present study aimed to comprehensively provide a definite conclusion regarding the effectiveness of DDL on English collocations learning, there may be some possible limitations that should be eliminated and some research gaps that should be bridged in future studies. The following information can provide ideas

for the possible directions and recommendations for a researcher wishing to conduct a study to investigate the effectiveness of DDL on English collocations learning.

As the scope of the present study was focused only on examining the effectiveness of DDL on the English collocations learning of high-proficiency and low-proficiency English learners, the findings may not adequately cover the intermediate ones. The participants in this study were also recruited through a convenience sampling technique from Thai EFL students of a Thai university in Bangkok, so the findings of this study may not be generalized to a larger population in other academic contexts, especially where English is studied as a second language. To bridge these gaps, it is suggested that a future study should possibly be conducted with a larger population, including intermediate-proficiency English learners and learners who study English as their first language or second language. By doing this, the findings of such studies could possibly help to examine the effectiveness of DDL on these groups of learners, and should allow the findings to be generalized to a larger population. Also, it is recommended that the future studies should include a control group, which would serves as a comparison group, to confirm that the gain scores of the participants in the experimental group resulted from the effects of the particular treatment (DDL). For example, future studies may use the control group to investigate the learning effects of DDL in comparison with traditional classrooms focused on a deductive learning approach. Moreover, a random assignment of participants to an experimental group and control group is suggested for future studies so that researchers are able to claim that the participants in both groups are almost identical. That would mean the moderator variables (e.g., sex, age, and culture), that can affect the relationship between the independent and dependent variables but that were not the focus of the present study, could be held constant, neutralized, and balanced, such that they would not have an effect on the other variables.

In addition to the research design of the present study, the target collocations of this study consisted of only two main types of collocations, namely lexical collocations and grammatical collocations, so the findings might only apply to the effectiveness of DDL on teaching and learning lexical and grammatical collocations. In other words, the results of the study might not be generalized to other types of formulaic sequences, such as idioms and free word combinations. For a more comprehensive conclusion regarding the wider effectiveness of DDL, it is recommended that future studies should select other types of language patterns as the

target of the study in order to investigate how DDL contributes to the development of learners' knowledge of a variety of formulaic sequences. Additionally, as the present study only used COCA as the primary source of the corpus data, it is recommended that future studies should apply various corpora as other sources of concordance lines to allow a useful Generalization of the DDL method beyond the application of only the COCA corpus. It is also suggested that future studies should include a follow-up test to ascertain the effects of DDL on learners' collocational knowledge in the long term. That means the collocation test should be administered again after the post-test (such as a month later after the post-test) to ensure that DDL has effectively and precisely contributed to the participants' collocational knowledge development.

REFERENCES

Allport, G.W. (1935). Attitudes. In C. Murchison (Ed.), *Handbook of Social Psychology* (pp. 798-784). Worcester MA: Clark University Press.

Antle, J. B. (2013). Teaching collocations. In N. Sonda & A. Krause (Eds.), *JALT 2012 Conference Proceedings*. Tokyo: JALT.

Aston, G. (1999). Corpus use and learning to translate. *Textus*, 12, 289-314. [Online] Available: http://www.sslmit.unibo.it/guy/textus.html.

Baker, P. (2010). *Sociolinguistics and corpus linguistics*. Edinburgh: Edinburgh University Press.

Bastone, R. (1995). Product and process: Grammar in the second language classroom. In M. Bygate, A. Tonkyn, & E. Williams, (Eds.), *Grammar and the language teacher* (pp. 224- 236). London: Prentice Hall.

Benson, M., Benson, E & Ilson, R. (1986). *The BBI combinatory dictionary of English*. Amsterdam: John Benjamins.

Benson, M., Benson, E., & Ilson, R. (1997). *The BBI dictionary of English word combinations*. Amsterdam: John Benjamins.

Binkai, J. (2012). An empirical study on corpus-driven English vocabulary learning in China. *English Language Teaching*, 5(4), 131-137.

Bisk-up, D. (1992). L1 influence on learner's renderings of English collocations: A Polish/German empirical study. In P. J. Arnaud, & H. Béjoint (Eds.), *Vocabulary and applied linguistics* (pp. 85-93). Macmillan.

Boonyasaquan, S. (2006). An analysis of collocational violations in translation. *Journal of Humanities*, *27*, 79-91. Bangkok: Faculty of Humanity, Srinakharinwirot University.

Boulton, A. (2009). Testing the limits of data-driven learning: language proficiency and training. *ReCALL*, *21*(1), 37-51.

Boulton, A. (2010). Data-driven learning: On paper, in practice. In T. Harris & M. Moreno Jaén (Eds.), *Corpus linguistics in language teaching* (pp. 17-52). Bern: Peter Lang.

Boulton, A. (2010). Data-Driven Learning: Taking the Computer Out of the Equation. *Language Learning*, *60*, 534–572.

Brashi, A. (2009). Collocability as a problem in L2 Production. *Reflections on English Language Teaching*, *8*(1), 21-34.

Broughton, G., Brumfit, C., Flavell, R., Hill, P. & Pincas, A. (1978). *Teaching English as a foreign language.* London: Geoffrey Broughton.

Brown, D. F. (1974). Advanced vocabulary teaching: The problem of collocation. *RELC Journal*, *5*(2), 1-11.

Brown, H. D. (2000). *Teaching by principles: An interactive approach to language pedagogy (2nd ed.)*. Longman press.

Carter, R. & McCarthy, M. (1988). *Vocabulary and language teaching*. London: Pearson Education Limited.

Chambers, A. (2007). Popularising corpus consultation by language learners and teachers. In Hidalgo, E., Quereda, L. & Santana, J. (eds.), C*orpora in the foreign language classroom* (pp.3-16). Amsterdam: Rodopi.

Chao, P. (2010). A study of collocation learning of junior high students in Taiwan via concordance. Paper presented at the 2010 international conference on English teaching, Kaohsiung, Taiwan. Retrieved January 20, 2016, from http://www2.kuas.edu.tw/edu/afl/20100430Final/Word/2010comp_EPCA.pdf

Chatpunnarangsee, K. (2013). Incorporating corpus technology to facilitate learning of English collocations in a Thai university EFL writing course. Ph.D. Thesis. Indiana University.

Cowie, A. P. (1988). Stable and creative aspects of vocabulary. In R. Carter & M. McCarthy (Ed.), *Vocabulary and Language Teaching* (pp.126-139). London: Pearson Education Limited.

Chomsky, N. (1965). *Aspects of the Theory of Syntax*. Cambridge: M.I.T. Press.

Creswell, J. W. (2002). *Educational research*. New Jersey: Pearson Education.

Darasawang, P. (2007). English Language Teaching and Education in Thailand: A Decade of Change. In D. Prescott (Ed.), *English in Southeast Asia: Varieties, Literacies and Literatures* (pp. 187-204). Newcastle upon Tyne: Cambridge Scholars Publishing.

Dorkchandra, D. (2015). The Effects of Instruction of Noticing Collocation on Thai EFL Learners. *Journal of Advances in English Language Teaching 2015, 3*(1), 1-11.

Durrant, P. (2009). Investigating the viability of a collocation list for students of English for academic purposes. *English for Specific Purposes, 28*(3), 157-169.

Durrant, P. & Schmitt, N. (2009). To what extent do native and non-native writers make use of collocations?. *International Review of Applied Linguistics in Language Teaching, 47*, 157-177.

Ellis, R. (1993). Second language acquisition research: how does it help teachers? *ELT Journal*, 47, 3-11.

Fan, M. (2009). An exploratory study of collocational use by ESL students – A task based approach. *System, 37*(1), 110-123.

Farr, F. (2008). Evaluating the use of corpus-based instruction in a language teacher education context: Perspectives from the users. *Language Awareness*, 17(1), 25-43.

Farrokh, P. (2012). Raising Awareness of Collocation in ESL/EFL Classrooms. *Journal of Studies in Education, 2* (3), 55-74.

Finch, G. (2000). *Linguistic terms and concepts*. London: Macmillan Press Ltd.

Firth, J. (1957). Modes of meaning. In F. Palmer (ed.), *Papers in linguistics* (pp. 190-215). London: Oxford University Press.

Firth, J. R. (1957). *Papers in linguistics, 1934-1951*. London: Oxford University Press.

Firth, J.R. (1968). *A Synopsis of Linguistic Theory, 1930-55.* In R. Palmer (ed), *Selected Papers of J.R. Firth* (pp. 168-205). London: Longmans, Green and Co.

Gairns, R. & Redman, S. (1986). *Working with words: A guide to teaching and learning vocabulary.* Cambridge: Cambridge University Press.

Geluso, J. & Yamaguchi, A. (2014). Discovering formulaic language through data-driven learning: Students' attitudes and efficacy. *ReCALL*, 26(2), 225-242.

Gitsaki, C. (1996). *The development of ESL collocation knowledge.* Doctoral dissertation. University of Queensland, Australia.

Granath, S. (2009). Who benefits from learning how to use corpora? In K. Aijmer (Ed.), *Corpora and language teaching* (pp. 47-65). Amsterdam: John Benjamins.

Granger, S. (1998). Prefabricated patterns in advanced EFLwriting: Collocations and formulae. In A. Cowie (ed.), *Phraseology: Theory, analysis and applications* (pp.145-160). Oxford: Oxford University Press.

Guan, X. (2013). A Study on the Application of Data-driven Learning in Vocabulary Teaching and Leaning in China's EFL Class. *Journal of Language Teaching and Research*, 4 (1), 105-112.

Halliday, M.A.K. 1966. Lexis as a linguistic level. In C. E. Bazell et al (eds), *In Memory of J.R. Firth* (pp. 150-161). London: Longman.

Hardley, G. (2002). Introduction to Data-Driven Learning. *RELC Journal*, 33 (2), 99-124.

Hashemi, M., Azizinezhad, M. & Darvishi, S. (2012). Collocation a neglected aspect in teaching and learning EFL. *Procedia Social and Behavioral Science*, 31, 522-525.

Hedge, T. (2000). *Teaching and learning in the language classroom*. Oxford: Oxford University Press.

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.

Hoey, M. (1991) *Patterns of lexis in text*. Oxford: Oxford University Press.

Hoey, M. (2005). *Lexical priming: A new theory of words and language.* London: Routledge.

Holliday, A. (1994). *Appropriate methodology and social context*. Cambridge: Cambridge University Press.

Howarth, P. (1998). Phraseology and Second Language Proficiency. *Applied Linguistics*, *19* (1), 24-44. Oxford: Oxford University Press.

Hsu, J. (2007). Lexical collocations and their relation to the online writing of Taiwanese college English majors and non-English majors. *Electronic Journal of Foreign Language Teaching*, *4*(2), 192-209.

Hsu, J. & Chiu, C. (2008). Lexical collocations and their relation to speaking proficiency of college EFL learners in Taiwan. *The Asian EFL Journal*, *10*(1), 181-204.

Huang, L. (2001). Knowledge of English collocations: An analysis of Taiwanese EFL learners. [Online] Available:www.utexas.edu/students/flesa/tpfle/contents7.doc

Jafarpour, A. A. & Koosha, M., (2006). Data-driven learning and teaching collocation of prepositions: The case of Iranian EFL adult learners. *Asian EFL journal*, 8(4), 192-209.

Jenkins, J. (2009). *World Englishes A Resource Book for Students*. London: Routledge.

Johns, T. (1991a) Should you be persuaded: Two examples of Data-driven Learning. In T.F. Johns, & P. King (eds.) *ELR Journal Vol.4: Classroom Concordancing.* Birmingham, CELS, The University of Birmingham, p.116.

Johns, T (1991b) From printout to handout: Grammar and vocabulary teaching in the context of data-driven learning. In T.F. Johns, & P. King (eds.) *ELR Journal Vo1.4:Classroom Concordancing.* Birmingham, CELS, The University of Birmingham, p.27-46.

Johns, T. & King, P. (eds). (1991). Classroom Concordancing. *English Language Research Journal*, 4. Birmingham: The University of Birmingham.

Johns, T. (1997). 'Kibbitxing One-to-Ones'. Paper delivery at the BALEAP Meeting on Academic Writing, University of Reading, 29th November 1997. Online http://web.bham.ac.uk/johnstf/pimnotes.htm.

Jones, C., & Waller, D. (2015). *Corpus Linguistics for Grammar: A guide for Research*. London: Routledge.

Karoly, A. (2005). The importance of raising collocational awareness in the vocabulary development of intermediate level learners of English. *Eger Journal of English Studies, V,* 58-69.

Kennedy, G. (1998). *An Introduction to Linguistic, London: Longman.*

Khamkhien, A. (2010). Teaching English speaking and English speaking tests in the Thai context: A Reflection from Thai Perspective. *English Language Teaching, 3*(1), 184-190.

Kirkpatrick, A. (2012). Teaching English as a lingua franca in ASEAN: Maintaining linguistic and cultural diversity. Proceeding of *the 2012 International Conference on Cultural and Linguistic Diversity in ASSEAN*, Suan Dusit Rajabhat Unversity, Bangkok, Thailand, 17-25.

Kirkpatrick, A. (2012). *English as an International Language in Asia: Implications for Language Education*. Dordrecht: Springer.

Kirschner, P.A., Sweller, J., & Clark, R.E. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem based, experiential, and inquiry-based teaching. *Educational Psychologist*, 46(2), 75-86.

Kjellmer, G. (1982). Some problems relating to the study of collocations in the Brown corpus. In S. Johansson (ed.), *Computer Corpora in English Language Research* (25-33). Bergen: Norwegian Computing Centre for the Humanities.

Klerk, V. (2006). *Corpus linguistics and world Englishes*. London: Continuum.

Koosha, M., & Jafarpour, A. A. (2006). Data-driven learning and teaching collocation of prepositions: The case of Iranian EFL adult learners. *Asian EFL Journal*, 8(4), 192-209

Kuiper. K., Columbus, G., & Schmitt, N. (2009). The acquisition of phrasal vocabulary. In S. Foster-Cohen (Ed.), *Language acquisition* (pp. 216-240). Hamshire: Palgrave Macmillan.

Lee, C. Y., & Liou, H. C. (2003) A study of using web concordancing for English vocabulary learning in a Taiwanese high school context. *English Teaching and Learning, 27* (3), 33-56.

Leech, G., Cruickshank, B. & Ivanic, R. (2001). *An A-Z of English grammar & usage*. London: Pearson Education Limited.

Lewis, M. (1993). *The lexical approach*. London: Commercial Colour Press Plc.

Lewis, M. (2000). *Teaching collocation: Further development in the lexical approach.* London: Commercial Colour Press Plc.

Lin, Y. P. (2002). *The effects of collocation instruction on English vocabulary development of junior high school students in Taiwan*. Unpublished master thesis, National Kaohsiung Normal University, Kaohsiung, Taiwan.

Longman dictionary of contemporary English 5th edition (2009). Essex: Pearson Education Ltd.

Louw, B. (1993). Irony in the text or insincerity in the writer? In M. Baker et al. (eds),

Text and Technology: In Honour of John Sinclair (pp. 157-176). Amsterdam: Benjamins.

Mallikamas, P. & Pongpairoj, N. (2005). Thai learners' knowledge of English collocations. *HKBU Papers in Applied Language Studies*, 5, 1-28.

Marton, W. (1977). Foreign vocabulary learning as problem no. 1 of language teaching at the advanced level. *Interlanguage Studies Bulletin*, 2, 33-57.

Martynska, M. 2004. Do English language learners know collocations? *Investigationes Linguisticae*, 11, 2-12.

McCarthy, M. (1990). *Vocabulary*. New York: Oxford University Express.

McCarthy, M. (2006). *Explorations in corpus linguistics*. New York: Cambridge University Press.

Mongkolchai, A. (2008). A study of university students' ability in using English collocations. Master's project. Srinakharinwirot University.

Nation, I.S.P. (1997). Vocabulary size, text coverage, and word lists. In N. Schmitt & M. McCarthy (eds), *Vocabulary: Description, Acquisition and Pedagogy* (pp. 6-19). Cambridge: Cambridge University Press.

Nation, I.S.P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.

Nation, I. S. P. (2008). Teaching vocabulary. Strategies and techniques. Boston, MA: Heinle Cengage Learning.

Nattinger, J. (1980). A lexical phrase grammar for ESL. *TESOL Quarterly*, 14, 337-344.

Nattinger, J. & DeCarrico, J. (1992). *Lexical phrases and language teaching*. New York: Oxford University Press.

Nesselhauf, N. (2003). The use of collocations by advanced learners of English and some implications for teaching. *Applied Linguistics, 24*(2), 223-242.

Nesselhauf, N. (2005). *Collocations in a learner corpus*. Amsterdam: John Benjamins.

Noom-ura, S. (2013). English-teaching problems in Thailand and Thai Teachers' Professional Development Needs. *English Language Teaching, 6*(11), 139-147.

O' Dell, F. & McCarthy, M. (2005). *English collocations in Use*. Cambridge: Cambridge University Press.

O' Dell, F. & McCarthy, M. (2008). *English collocations in Use*: *Advanced*. Cambridge: Cambridge University Press.

O'Sullivan, I. (2007). Enhancing a process-oriented approach to literacy and language learning: The role of corpus consultation literacy. *ReCALL,* 19(3), 269-286.

Palmer, F.R. (1968). *Selected Papers of J.R. Firth 1952-59*. London and Harlow: Longman Linguistic Library.

Palmer, H. (1938). *A grammar of English words*. London: Longman.

Pennington, M. (1996). *The Power of CALL*. Houston: Athelstan.

Phoocharoensil, S. (2010). A corpus-based study of English synonyms. *InternationalJournal of Arts and Sciences, 3(10),* 227-245.

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.

Poole, S. (1999). *An introduction to linguistics*. London: Macmillan Press Ltd.

Rahimi, M., & Momeni, G. (2011). The effect of teaching collocations on English language proficiency. *Procedia: Social and Behavioral Sciences, 31*, 37-42.

Richards, J.C., & Schmidt, R. (Eds.). (2010). *Longman dictionary of language teaching and applied linguistics* (4th ed.). London: Longman.

Reber, A.S. (1989). Implicit learning and tactic knowledge. *Journal of experimental psychology: General, 118*, 219-235.

Robinson, P. (1997). Generalizibility and automaticity of second language learning under implicit, incidental, enhanced, and instructed conditions. *Studies in second language acquisition*, *19*, 233-247.

Rutherford, W. E. (1987). *Second Language Grammar: Learning and Teaching*. London: Longman.

Rutherford, W. & Smith, M. (1988). (Eds.) *Grammar and Second Language Teacher: A Book of Readings*. In Sinclair, J. (ed.), 1987, *Looking Up: An account of the COBUILD project* (pp. 107- 116). Boston: Heinle and Heinle.

Salimi, A. ,Tavakoli, M. & Ketabi, S.(2010). The effect of noticing on the judgment of lexical collocations; The case of language proficiency and complexity of patterns. *The Asian EFL Journal Quarterly*, *11*, 85-98.

Saville-Troike, M. (2006). *Introducing second language acquisition*. Cambridge: Cambridge University Press.

Shei, C., & Pain, H. (2000). An ESL Writer's Collocational Aid. *Computer Assisted Language Learning*, *13*(2), 167-182.

Shih, R. H. H. (2000). *Collocation Deficiency in a Learner Corpus of English: From an overuse perspective.* In Pacific Asia Conference on Language.

Sinclair, J. (1991). *Corpus concordance collocation*. Oxford: Oxford University Press.

Siyanova, A., & Schmitt, N. (2008). L2 Learner Production and Processing of Collocation: A Multi-study Perspective. *The Canadian Modern Language Review*, *64* (3), 429-458.

Skehan, P. (1996). Second language acquisition research and task-based instruction. In Willis, D. and J. Willis (eds.), *Challenge and Change in Language Teaching* (pp. 17.30). Oxford: Heinemann.

Sripicharn, P. (2002) Introducing Data-Driven Learning: Theory, Practice, and Evaluation. *Journal of Liberal Arts, Faculty of Arts.* Thammasat University 2(2), 100-111.

Sripicharn, P. (2002). Evaluate Data-driven Learning: the use of classroom concordancing by Thai learners of English. Ph.D. Thesis. The University of Birmingham.

Stoitchkov, R. (2008). *Building collocation competence.* Retrieved April 16, 2015 from: http://www.beta-iatefl.org/1749/blog-publications/building-collocation-competence/

Stubbs, M. (1996). *Text and Corpus Analysis*. Oxford: Blackwell.

Swan, M. (1997). The influence of the mother tongue on second language vocabulary. In N. Schmitt & M. McCarthy (Eds.),*Vocabulary: Description, acquisition, and pedagogy* (pp. 40-63). Cambridge: Cambridge University Press.

Tian, S. (2005). The impact of learning tasks and learner proficiency on the effectiveness of data-driven learning. *Journal of Pan-Pacific Association of Applied Linguistics 9 (2),* 263-275.

Timmis, I. (2015). *Corpus Linguistics for ELT: Research and Practice*. London: Routledge.

Todd, R. (2001). Building and using your own corpus and concordance. *Thai TESOL Bulletin, 14(2),* 1-9.

Todd, R. (2001). Induction from self-selected concordances and self-correction. *System,29,* 91-102.

Turnbull, J. & Burston, J. (1998). Towards independent concordance work for students: lessons from a case study. *ON-CALL, 12 (2),* 10–21.

Ucar, S. & Yukselir, C. (2015). The effects of corpus-based activities on Verb-Noun collocations in EFL classes. *The Turkish Online Journal of Educational Technology, 14(2),* 195-205.

Wattanapichet, W. (2013). Collocation: Major cause of unstandard English competency of Thais.[Online] Available: www.dicthai.com/collocation.ph.

Wilkins, D.A. (1972). *Linguistics in language teaching*. London: Edward Arnold.

Willis, D., Shortall, T. and Johns, T.F. (1995). *Pedagogic Grammar*. Birmingham: University of Birmingham Press.

Willis, D. and Willis, J (1996). Consciousness-raising activities in the language classroom. In J. Willis & D. Willis (Eds.), *Challenge and Change in Language Teaching* (pp. 63-76). Oxford: Heinemann.

Wray, A. (2002). *Formulaic language and the lexicon*, Cambridge: Cambridge University Press.

Ying, S. (2009). Study on collocations in English writing by Chinese students. *Sino-US Eng. Teach*, *6*(3), 25-30.

Ying, Y. & Hendricks, A. (2004). Collocation awareness in the writing process. *Reflections of English Language Teaching*, 3, 51-78.

Yumanee, C., & Phoocharoensil, S. (2013). Analysis of collocational errors of Thai EFL students. *Language Education and Acquisition Research Network,* 1(1), 90-100.

Zhen, F.C. (2005). Corpus-based data-driven foreign language learning: ideas, methods and techniques. *Foreign Language World*, 4, 19-27.

Zughoul, M. R. & Abdul-Fattah, H. S. (2001). Collocational competence of Arabic speaking learners of English: A study in lexical semantics. [Online] Available: http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1b/4f/28.pdf

APPENDICES

APPENDIX A

PRETEST

Part I: Choose the most appropriate word to complete these sentences.

1.	The CEO of Apple Co., Ltd. was _____ criticized for his unfair behaviors. a) highly b) deeply c) utterly d) strictly
2.	Tom thinks it will be difficult to _____ his goal because of various obstacles. a) earn b) achieve c) win d) receive
3.	The evidences help the police to _____ connect him with the crime so they have to ask for more information from the witnesses. a) slightly b) mildly c) loosely d) softly
4.	Jonathan has tried several times to _____ suicide by hanging himself. a) commit b) do c) perform d) make
5.	The flight from Bangkok to Phuket is _____ cheap. It costs only 199 Baht. a) foolishly b) stupidly c) ridiculously d) funnily

6.	The customers are _____ complaining about the bad qualities of the food. a) bitterly b) extremely c) utterly d) deeply
7.	It is _____ offensive that you are unable to understand the humor in the cartoon. a) softly b) loosely c) mildly d) faintly
8.	Mike would like to buy a _____ car so that he can win the racing. a) fast b) prompt c) quick d) swift
9.	All children will be _____ forbidden from using the sports grounds during winter. a) strictly b) highly c) utterly d) strongly
10.	If you want to be _____ successful as a business owner, you must have strong determination. a) highly b) strongly c) deeply d) utterly
11.	You are just facing a _____ problem so there is no need to worry. a) light b) small c) low d) mild
12.	Michael has always been _____ concerned about the environment and would like to work for a conservation organization. a) utterly b) deeply c) strictly d) absolutely

13.	Jessica _____ yoga every day to maintain a healthy weight and gain flexibility. a) goes b) does c) plays d) completes
14.	Nowadays, customers want to buy all products at _____ prices in order to save money. a) little b) small c) low d) light
15.	The novel is _____ based on the true story; many chapters were completely made up. a) slightly b) loosely c) mildly d) faintly
16.	The teacher has warned her students not to come to a _____ decision but they should think carefully instead. a) hasty b) prompt c) brisk d) instant
17.	This article is _____ related to our study so it might not be useful to us as a reference. a) softly b) loosely c) mildly d) faintly
18.	Although there is a lot of evidence against him, Nathan is able to _____ the charge if he believes that he is innocent. a) disclaim b) deny c) object d) refuse
19.	The weather forecast reports that there will be _____ rain tonight so you should bring an umbrella. a) hard b) strong c) heavy d) thick

20.	My son _____ attention to what I told him and started working harder. a) gave b) paid c) provided d) made
21.	Julia was diagnosed _____ lung cancer and died a year later. a) with b) for c) about d) on
22.	Victor's addiction _____ playing VDO games is a problem leading to his poor scores. a) with b) to c) about d) for
23.	It's important _____ me to understand this topic because I have to take the exam tomorrow. a) for b) with c) on d) of
24.	Mike's grandfather died _____ a heart attack last year. a) for b) in c) with d) of
25.	My father does not like travelling by plane because of his fear _____ flying. a) about b) of c) with d) at
26.	The building is extremely striking _____ its long lines and bold curves. a) with b) for c) in d) at

27.	Danny's reaction _____ winning the prize was quite funny. a) in b) with c) at d) to
28.	The book consists _____ five main chapters that explain world history. a) with b) of c) in d) on
29.	Billy's essay is very well-organized, so the readers are clear _____ what he is trying to explain. a) with b) of c) in d) on
30.	You should make a decision _____ your future right now before it is too late for you to have your own business. a) on b) with c) at d) to
31.	Farmers should not use any pesticides because they are very harmful _____ the environment. a) with b) on c) for d) to
32.	After being asked by the reporter, Jackie refused to speculate _____ the reason why he did not win the award for best actor. a) for b) on c) to d) with
33.	The Prime Minister of Japan had the particular responsibility _____ providing food and water to the victims of the flood. a) for b) upon c) at d) about

34.	My daughter did not prepare for her final test but she got an A. I was so amazed ___ her grade. a) in b) upon c) at d) over
35.	Jane was punished _____ stealing her friend's mobile phone. a) for b) from c) on d) about

Part II: Translate the following passage from Thai to English

เมื่อสัปดาห์ที่ผ่านมาขณะที่ฉันกำลังเล่นสกีกับเพื่อนๆอยู่บนเนินเขา ขณะนั้นลมพัดแรงมากฉันและเพื่อนๆเลยตัดสินใจที่จะกลับไปที่แคมป์เพราะพวกเรากลัวว่าลมจะสร้างความเสียหายให้กับที่พักของเรา ขณะที่ฉันกำลังเดินลงเขาฉันบังเอิญเห็นผู้หญิงคนหนึ่งยืนอยู่หลังต้นไม้ ในเวลานั้นฉันรู้สึกประหลาดใจเล็กน้อยว่าหล่อนเป็นใคร แต่ฉันก็ไม่ได้สนใจที่จะคิดหาคำตอบว่าผู้หญิงคนดังกล่าวเป็นใครมาจากไหนเพราะตอนนั้นฉันกำลังจดจ่อกับเส้นทางเดินกลับที่พัก เมื่อถึงแคมป์ที่พักฉันรู้สึกกังวลเกี่ยวกับความปลอดภัยของผู้หญิงคนนั้นฉันจึงรีบตัดสินใจที่จะเดินกลับขึ้นไปบนเขาเพียงลำพัง ในตอนนั้นฉันเชื่อมั่นในความสามารถของตัวเองที่จะสามารถเดินกลับไปบนเขาคนเดียวได้เนื่องจากฉันมีประสบการณ์เกี่ยวกับการเดินป่า เมื่อฉันเดินมาได้ครึ่งทางฉันรู้สึกเหนื่อยมาก ฉันจึงหยุดพักบริเวณริมลำธาร ขณะที่ฉันกำลังล้มตัวนอนลงบนพื้นฉันเห็นผู้หญิงคนนั้นยืนอยู่อีกฝั่งของลำธาร เธอตะโกนมาที่ฉันพร้อมกับท่าทางตื่นตระหนก ในเวลานั้นฉันรู้สึกตกใจมากที่เห็นผู้หญิงคนนั้นมีท่าทางเช่นนั้นฉันจึงมองไปรอบๆเพื่อตรวจสอบความผิดปกติรอบตัวฉัน ทันใดนั้นเองฉันเห็นสิงโตตัวใหญ่มันกำลังเดินตรงมาที่ฉัน ในเวลานั้นฉันรู้สึกกลัวมาก ฉันได้แต่ภาวนาขอให้ปลอดภัยจากอันตราย ราวกลับปาฏิหาริย์สิงโตตัวนั้นเดินผ่านฉันไปราวกลับว่าไม่เห็นฉันนั่งอยู่ตรงนั้น ฉันอยากขอบคุณผู้หญิงคนนั้นแต่พอฉันมองหาเทอฉันก็ไม่เห็นเธอแล้ว จนทุกวันนี้ฉันก็ยังหาคำตอบไม่ได้ว่าหล่อนเป็นใครแต่อย่างไรก็ตามฉันต้องขอบคุณเธอมาก

APPENDIX B

POSTEST

Part I: Choose the most appropriate word to complete these sentences.

1.	The CEO of Apple Co., Ltd. was _____ criticized for his unfair behaviors. a) highly b) deeply c) utterly d) strictly
2.	Tom thinks it will be difficult to _____ his goal because of various obstacles. a) earn b) achieve c) win d) receive
3.	The evidences help the police to _____ connect him with the crime so they have to ask for more information from the witnesses. a) slightly b) mildly c) loosely d) softly
4.	Jonathan has tried several times to _____ suicide by hanging himself. a) commit b) do c) perform d) make
5.	The flight from Bangkok to Phuket is _____ cheap. It costs only 199 Baht. a) foolishly b) stupidly c) ridiculously d) funnily

6.	Jessica _____ yoga every day to maintain a healthy weight and gain flexibility. a) goes b) does c) plays d) completes
7.	Nowadays, customers want to buy all products at _____ prices in order to save money. a) little b) small c) low d) light
8.	The novel is _____ based on the true story; many chapters were completely made up. a) slightly b) loosely c) mildly d) faintly
9.	The teacher has warned her students not to come to a _____ decision but they should think carefully instead. a) hasty b) prompt c) brisk d) instant
10.	This article is _____ related to our study so it might not be useful to us as a reference. a) softly b) loosely c) mildly d) faintly
11.	Although there is a lot of evidence against him, Nathan is able to _____ the charge if he believes that he is innocent. a) disclaim b) deny c) object d) refuse
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13.	The customers are _____ complaining about the bad qualities of the food. a) bitterly b) extremely c) utterly d) deeply
14.	It is _____ offensive that you are unable to understand the humor in the cartoon. a) softly b) loosely c) mildly d) faintly
15.	Mike would like to buy a _____ car so that he can win the racing. a) fast b) prompt c) quick d) swift
16.	All children will be _____ forbidden from using the sports grounds during winter. a) strictly b) highly c) utterly d) strongly
17.	If you want to be _____ successful as a business owner, you must have strong determination. a) highly b) strongly c) deeply d) utterly
18.	You are just facing a _____ problem so there is no need to worry. a) light b) small c) low d) mild
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27.	My son _____ attention to what I told him and started working harder. a) gave b) paid c) provided d) made
28.	Julia was diagnosed _____ lung cancer and died a year later. a) with b) for c) about d) on
29.	Victor's addiction _____ playing VDO games is a problem leading to his poor scores. a) with b) to c) about d) for
30.	It's important _____ me to understand this topic because I have to take the exam tomorrow. a) for b) with c) on d) of
31.	Mike's grandfather died _____ a heart attack last year. a) for b) in c) with d) of
32.	My father does not like travelling by plane because of his fear _____ flying. a) about b) of c) with d) at
33.	The building is extremely striking _____ its long lines and bold curves. a) with b) for c) in d) at

34.	My daughter did not prepare for her final test but she got an A. I was so amazed ___ her grade. a) in b) upon c) at d) over
35.	Jane was punished _____ stealing her friend's mobile phone. a) for b) from c) on d) about

Part II: Translate the following passage from Thai to English

เมื่อสัปดาห์ที่ผ่านมาขณะที่ฉันนั่งดูเพื่อนๆเล่นสกีอยู่บนเนินเขา ทันได้นั้นลมพัดแรงมากฉันและเพื่อนๆรู้สึกกลัวเลยตัดสินใจที่จะกลับไปที่โรงแรมเพราะกลัวว่าลมจะสร้างความเสียหายให้กับรถยนต์ของเราที่จอดไว้บริเวณเนินเขา ขณะที่ฉันกำลังเดินลงเขาฉันบังเอิญเห็นหญิงแก่คนหนึ่งเดินสวนกับขึ้นไปบนเขา ฉันรู้สึกประหลาดใจเล็กน้อยว่าหล่อนเป็นใคร แต่ฉันก็ไม่ได้สนใจที่จะคิดหาคำตอบว่าทำไมหล่อนต้องเดินขึ้นเขาในเวลานี้เพราะฉันกำลังจดจ่อกับการดูแผนที่เพื่อหาทางลงเขา เมื่อถึงบริเวณที่จอดรถฉันรู้สึกกังวลเกี่ยวกับความปลอดภัยของหญิงชราผู้นั้น ฉันจึงรีบตัดสินใจเดินกลับขึ้นไปบนเขาเพียงลำพัง ในตอนนั้นฉันเชื่อมั่นในความสามารถของตัวเองที่จะจดจำทางกลับไปบนเขาได้ เนื่องจากฉันมีประสบการณ์เกี่ยวกับการเดินป่า เมื่อฉันเดินมาได้ครึ่งทางฉันรู้สึกเพลียมาก ฉันนั่งพักบริเวณพุ่มไม้ริมทาง ขณะที่ฉันกำลังล้มตัวนอนลงบนพื้นฉันเห็นผู้หญิงคนนั้นยืนอยู่อีกด้านหนึ่งของทางเดิน เธอตะโกนมาที่ฉันพร้อมกับท่าทางหวาดกลัวและตกใจ ในเวลานั้นฉันรู้สึกตกใจมากที่เห็นผู้หญิงคนนั้นมีท่าทางเช่นนั้น ฉันจึงมองไปรอบๆเพื่อตรวจสอบความผิดปกติรอบตัวฉัน ทันใดนั้นเองฉันเห็นเสือตัวใหญ่มันกำลังเดินตรงมาที่ฉัน ในเวลานั้นฉันรู้สึกกลัวมาก ฉันได้แต่ภาวนาขอให้ปลอดภัยจากอันตราย แต่แล้วเสือตัวนั้นเดินผ่านฉันไปราวกลับว่าไม่เห็นฉันนั่งอยู่ตรงนั้น ฉันจึงอยากขอบคุณหญิงชราคนนั้นแต่พอฉันมองกลับไปหาเธอฉันก็ไม่เห็นเธอแล้ว จนทุกวันนี้ฉันก็ยังหาคำตอบไม่ได้ว่าหล่อนเป็นใครทำไมหล่อนถึงได้มาช่วยเตือนฉัน

APPENDIX C
QUESTIONNAIRE

แบบสำรวจทัศนคติต่อการเรียนการสอนคำปรากฏร่วมในภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูล

คำชี้แจง:

1. แบบสำรวจนี้จัดทำขึ้นเพื่อเก็บข้อมูลเบื้องต้นเกี่ยวกับทัศนคติของผู้เรียนต่อการเรียนการสอนคำปรากฏร่วมในภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูล

3. แบบสำรวจแบ่งออกเป็น 3 ตอน ประกอบด้วย

ตอนที่ 1 ข้อมูลสถานภาพผู้ตอบแบบสำรวจ

ตอนที่ 2 แบบสำรวจทัศนคติต่อการเรียนการสอนคำปรากฏร่วมในภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูล

ตอนที่ 3 ความคิดเห็นและข้อเสนอแนะเพิ่มเติม

4. กรุณาเขียนเครื่องหมาย ✓ ใน ☐ หรือเติมคำในช่องว่างตามความจริง

ผู้วิจัยขอขอบคุณผู้ตอบแบบสำรวจทุกท่านที่ได้เสียสละเวลาในการตอบแบบสำรวจไว้ ณ โอกาสนี้ด้วย ทั้งนี้ ข้อมูลทั้งหมดจะนำมาใช้เพื่อการศึกษาทัศนคติต่อการเรียนการสอนคำปรากฏการร่วมในภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูลเท่านั้น

คำชี้แจง โปรดทำเครื่องหมาย✓ ลงใน ☐ หรือเติมคำในช่องว่างตามความจริง

1. เพศ ☐ 1) ชาย ☐ 2) หญิง
2. กำลังศึกษา ☐ 1) ปริญญาตรีชั้นปีที่ 1 ☐ 2) ปริญญาตรีชั้นปีที่ 2
   ☐ 3) ปริญญาตรีชั้นปีที่ 3 ☐ 4) ปริญญาตรีชั้นปีที่ 4
4. คณะ ..... ภาควิชา.....
   มหาวิทยาลัย.....

5. กำลังศึกษาวิชาภาษาอังกฤษพื้นฐานในรายวิชา

☐ 1) English for General Communication (SWU 121)

☐ 2) English for Effective Communication (SWU 122)

☐ 3) English for International Communication (SWU 123)

☐ 4) English for Advanced Communication (SWU 124)

6. คะแนน SWU-SET ของท่านเท่ากับ _____ คะแนน อยู่ในระดับ

☐ 1) A 1 and Below ☐ 2) A 2 ☐ 3) B 1

☐ 4) B 2 and Above

ตอนที่ 2 แบบสำรวจทัศนคติต่อการเรียนการสอนคำปรากฏร่วมในภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูล

คำชี้แจง โปรดทำเครื่องหมาย ✓ลงในช่องระดับความคิดเห็น ตามความต้องการของท่านหากมีข้อเสนอแนะเพิ่มเติมกรุณาเขียนลงในช่องว่างที่กำหนด

แบบสำรวจความต้องการส่วนบุคคลต่อการเรียนระดับปริญญาตรี แบ่งระดับความต้องการแต่ละรายการประเมินออกเป็น 5 ระดับ คือ

5	หมายถึง	เห็นด้วยอย่างมาก
4	หมายถึง	เห็นด้วย
3	หมายถึง	ไม่มีความเห็น
2	หมายถึง	ไม่เห็นด้วย
1	หมายถึง	ไม่เห็นด้วยอย่างมาก

ข้อที่	ทัศนคติต่อการเรียนการสอนคำปรากฏร่วมในภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูล	ระดับความเห็นด้วย				
		5	4	3	2	1
ทัศนคติต่อการเรียนคำปรากฏร่วมภาษาอังกฤษ						
1.	ฉันคิดว่าการเรียนรู้คำปรากฏร่วมภาษาอังกฤษเป็นเรื่องสำคัญ					
2.	ฉันคิดว่าความรู้เกี่ยวกับคำปรากฏร่วมช่วยพัฒนาทักษะการสื่อสารภาษาอังกฤษ					
3.	ฉันต้องการเพิ่มพูนความรู้เกี่ยวกับคำปรากฏร่วมภาษาอังกฤษ					
ทัศนคติต่อการเรียนการสอนคำปรากฏร่วมในภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูล						
4.	ฉันสามารถเรียนรู้เพื่อทำความเข้าใจวิธีการสืบค้นคำปรากฏร่วมจากคลังข้อมูลได้อย่างง่าย					
5.	ฉันหาข้อมูลเกี่ยวกับคำปรากฏร่วมที่ฉันต้องการศึกษาได้ทุกคำผ่านคลังข้อมูล					
6.	ฉันสามารถเข้าใจความหมายของคำปรากฏร่วมที่ฉันต้องการศึกษาผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูล					
7.	ฉันสามารถเข้าใจวิธีการใช้คำปรากฏร่วมที่ฉันต้องการศึกษาผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูล					
8.	ฉันเรียนรู้คำศัพท์อื่นๆนอกเหนือจากคำปรากฏร่วมที่ฉันต้องการศึกษาผ่านการอ่านบริบทรอบคำปรากฏร่วมดังกล่าวจากตัวอย่างประโยคในคลังข้อมูล					
9.	ฉันคิดว่าความลำบากจากการศึกษาคำปรากฏร่วมผ่านคลังข้อมูลส่วนหนึ่งมาจากการที่ฉันไม่ค่อยได้มีโอกาสใช้คอมพิวเตอร์ หรือ อินเตอร์เน็ต					
10.	ฉันต้องใช้เวลาและความพยามอย่างมากเพื่อวิเคราะห์ตัวอย่างประโยคในคลังข้อมูลเพื่อให้เข้าใจหลักการใช้คำปรากฏร่วมดังกล่าว					
11.	ฉันต้องใช้เวลาและความพยามอย่างมากเพื่อทำความเข้าใจคำศัพท์ที่เป็นบริบทรอบคำปรากฏร่วมที่ฉันต้องการศึกษาผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูล					
12.	ฉันคิดว่าการศึกษาคำปรากฏร่วมผ่านคลังข้อมูลเป็นเรื่องยากเนื่องจากรูปแบบของประโยคตัวอย่างในคลังข้อมูลเป็นประโยคที่ไม่สมบูรณ์					
13.	ฉันคิดว่าปริมาณประโยคตัวอย่างในคลังข้อมูลมีมากเกินไปเกินความจำเป็น					
14.	ฉันคิดว่าโดยภาพรวมแล้วฉันสามารถพัฒนาและเพิ่มพูนความรู้เกี่ยวกับคำปรากฏร่วมในภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูล					
15.	ฉันจะใช้วิธีการศึกษาคำปรากฏร่วมในภาษาอังกฤษผ่านการเรียนภาษาอังกฤษจากคลังข้อมูลต่อไปในอนาคต					

ตอนที่ 3 ความคิดเห็นและข้อเสนอแนะเพิ่มเติม

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ผู้วิจัยขอขอบคุณผู้ตอบแบบสำรวจทุกท่านที่ได้เสียสละเวลาในการตอบแบบสำรวจไว้ ณ โอกาสนี้ด้วย

APPENDIX D

STUDENTS' REFLECTION

Effectiveness of Data-driven Learning (DDL) in Teaching English Collocations to Thai EFL Students
Student Reflection

1.ระบุปัญหาและความยุ่งยากที่เกิดขึ้นระหว่างการเรียนคำปรากฏร่วมภาษาอังกฤษผ่านวิธีการเรียนผ่านคลังข้อมูล

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2.ท่านสามารถเรียนคำปรากฏร่วมภาษาอังกฤษผ่านขั้นตอนการเรียนผ่านคลังข้อมูล (Identification, Classification, Generalization) ได้หรือไม่ อย่างไร หากมีปัญหาหรือความยุ่งยากระหว่างแต่ละขั้นตอนโปรดอธิบาย

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3. กลวิธีการเรียนรู้อะไรบ้างที่ท่านใช้ขณะเรียนคำปรากฏร่วมภาษาอังกฤษผ่านคลังข้อมูล และกลวิธีดังกล่าวถูกใช้ต่างกันหรือไม่ระหว่างการเรียนคำปรากฏร่วมประเภท lexical and grammatical

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4. การเรียนคำปรากฏร่วมภาษาอังกฤษผ่านวิธีการเรียนผ่านคลังข้อมูลมีประสิทธิภาพหรือไม่ อย่างไร

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**************************END OF THE REFLECTION************************

APPENDIX E

CAN-DO STATEMENT CHECKLIST

Effectiveness of Data-driven Learning (DDL) in Teaching English Collocations to Thai EFL Students
Can-do Statement Checklists

ฉันสามารถ.....

1.ระบุปัญหาของการเลือกใช้คำปรากฏร่วมที่พบในแบบฝึกหัดเพื่อค้นคว้าจากคลังข้อมูลต่อไปได้ (Identification)

ดีมาก				ไม่ดี
5	4	3	2	1

2. ใช้คลังข้อมูลสืบค้นข้อมูลเพื่อหาคำตอบในการเลือกใช้คำปรากฏร่วมภาษาอังกฤษในแบบฝึกหัดได้ (Classification)

ดีมาก				ไม่ดี
5	4	3	2	1

3. สรุปกฎการใช้หรือหลักการใช้คำปรากฏร่วมต่างๆในแบบฝึกหัดหลังจากศึกษาข้อมูลจากคลังข้อมูลได้ (Generalization)

ดีมาก				ไม่ดี
5	4	3	2	1

APPENDIX F
INTERVIEW QUESTIONS

แบบสัมภาษณ์เกี่ยวกับทัศนคติต่อการเรียนการสอนคำปรากฏร่วมภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูล

1. โปรดเล่าประสบการณ์และอธิบายความรู้สึกโดยรวมของท่านจากการเรียนคำปรากฏร่วมในภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูลหรือไม่

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2. ท่านคิดว่ามีข้อดีของการเรียนคำปรากฏร่วมในภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูลหรือไม่ หากมีโปรดอธิบาย

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3. ท่านคิดว่ามีข้อเสียของการเรียนคำปรากฏร่วมในภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูล หรือไม่ หากมีโปรดอธิบาย

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4. ท่านคิดว่าอะไรคือสิ่งท้าทายสำคัญในการเรียนคำปรากฏร่วมในภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูล

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5. ท่านคิดว่าการเรียนคำปรากฏร่วมในภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูลช่วยพัฒนาและเพิ่มพูนความรู้เกี่ยวกับคำปรากฏการร่วมในภาษาอังกฤษของท่านหรือไม่ อย่างไร

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6. ท่านคิดว่าท่านจะใช้วิธีการเรียนคำปรากฏร่วมในภาษาอังกฤษผ่านวิธีการเรียนภาษาอังกฤษจากคลังข้อมูลต่อไปในอนาคตหรือไม่ เพราะอะไร

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7. ท่านมีข้อเสนอแนะและคำแนะนำเพิ่มเติมหรือไม่ อย่างไร

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APPENDIX G

COLLOCATION EXERCISE (THINK-ALOUD TASK)

Part I: Choose the most appropriate word to complete these sentences.

1.	Mike's grandfather died _____ a heart attack last year. a) for b) in c) with d) of
2.	Jenny has to _____ an experiment to test her hypothesis. a) do b) make c) perform d) have
3.	The evidences help the police to _____ connect him with the crime so they have to ask for more information from the witnesses. a) slightly b) mildly c) loosely d) softly
4.	My father does not like travelling by plane because of his fear _____ flying. a) about b) of c) with d) at
5.	Although there is a lot of evidence against him, Nathan is able to _____ the charge if he believes that he is innocent. a) disclaim b) deny c) object d) refuse

Part II: Read the following statements and decide whether the underlined collocation of each statement correct or not. Put 'T' if it is correct and put 'F' if it is incorrect.

_____ 1) The Prime Minister **denies the claims** of corruption made against him.

_____ 2) I don't like driving in the **quick lane** on the motor way because it's dangerous.

_____ 3) Michael has **dreamed for** being a flight attendant since she was a child.

_____ 4) I'm very **proud with** my daughter, she has worked very hard since high school.

_____ 5) All children will be **highly forbidden** from using the sports grounds during winter.

**********END OF EXERCISE**********

APPENDIX H

LESSON PLAN OF 15-WEEK OF COLLOCATION CLASSES

Lesson Plan: Introduction to English Collocations

Topic **Introduction to English Collocations**

Instructor Wachirapong Yaemtui

Length of Time 60 minutes

Learning Objectives Upon completion of the lesson, students will be able to

1. Give the definition of English collocations.
2. Differentiate between English collocations and other word combinations
3. Classify different types of English collocations.
4. Explain the importance of collocational knowledge

Contents

1. *What is an English collocation?*
2. *How many types of English collocations?*
3. *Why learn English collocations?*

Teaching and Learning Activities

1. Description of Learning Objectives	5	minutes
2. Lecture	30	minutes
3. Extra Practice	20	minutes
4. Evaluation	5	minutes

Teaching and Learning Materials

1. Supplementary materials
2. Worksheet

Evaluation

Extra Practice consisting of:

1. Multiple Choice Questions with 4 alternatives
2. True vs. False Questions
3. Matching Questions
4. Open-ended Questions

References

F. O'Dell & M. McCarthy (2008). *English Collocations in Use: Intermediate.* Cambridge University Press.

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Lead-in	1.Teacher activates students' background knowledge about English collocations by asking students the following questions: **“Have you ever heard the term Collocation?”** **“What is a collocation?”** 2.Teacher writes students’ answers on the board and respond to students’ answers	-To introduce the lesson -To activate students' prior knowledge about English collocations -To prepare students for the next activity	Whiteboard	ST

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
30	Presentation	3.Teacher carefully and thoroughly give a lecture about - What is an English collocation? - How many types of English collocations? - Why learn English collocations?	-To provide an opportunity for students to learn about English collocations -To ensure that students have general knowledge about English collocations	PowerPoint/ Handout	TS
20	Extra Practice	4. Teacher assigns students to work in group of 4 and complete the paper-based exercises consisting of 4.1 Multiple Choice Questions with 4 alternatives 4.2 True vs. False Questions 4.3 Matching Questions 4.4 Open-ended Questions Teacher should monitor students while they doing exercises	-To provide an opportunity for students to do exercises about English collocations. -To provide an opportunity for students to share their knowledge with friends	Handout	SS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Evaluation	5. Teacher asks volunteers to share their answers with the class. 6. Teacher asks the class if there is any mistake in their classmates' answers (Teacher should provide the correction feedback and commend if necessary).	-To provide an opportunity for students to share their knowledge with the class. -To provide students with opportunity to check their understanding about English collocations.	Handout	SS/TS

Lesson Plan: How to Use Corpus for Finding Information about English Collocations

Topic **Corpus and English Collocations**

Instructor Wachirapong Yaemtui

Length of Time 60 minutes

Learning Objectives Upon completion of the lesson, students will be able to

1. Effectively use corpus for finding information about English collocations.

Contents

1. *What is Corpus?*
2. *How English collocations can be learned through corpora?*

Teaching and Learning Activities

1. Description of Learning Objectives	5	minutes
2. Lecture	30	minutes
3. Extra Practice	20	minutes
4. Evaluation	5	minutes

Teaching and Learning Materials

1. Electronic concordance lines (Corpus)
2. Supplementary materials
3. Worksheet

Evaluation

Extra Practice consisting of:

1. Multiple Choice Questions with 4 alternatives
2. True vs. False Questions
3. Matching Questions
4. Open-ended Questions

References

F. O'Dell & M. McCarthy (2008). *English Collocations in Use: Intermediate.* Cambridge University Press.

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Lead-in	1. Teacher explains the objective of the lesson to students. 2. Teacher activates students' background knowledge about English corpus by asking the following questions: - What is a corpus? - What can be learned through a corpus? - How English collocations can be learned through a corpus? 3. Teacher gives feedback to students' answers.	- To introduce the lesson - To activate students' background knowledge about corpora	Whiteboard and Handout	TS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
30	Lecture	4. Teacher gives lecture about using corpora for finding information about English collocations by focusing on the following topics: - What is a corpus? - How English collocations can be learned through corpora? This lesson is considered a training session where students should be trained how to use corpora.	- To trained students how to use corpora, particularly for finding information about English collocations	Computer with electronic concordance lines (corpus)	TS
20	Extra Practice	5. Teacher assigns students to work in pair and complete the exercises consisting of: 5.1 Multiple Choice Questions with 4 alternatives 5.2 Matching Questions 6. Students must work with their pair and consult the corpora in order to complete the exercises. 7. Teacher should monitor students doing tasks	- To provide an opportunity for students to practice using corpora for finding information about English collocations - To provide an opportunity for students to exchange their knowledge with his/her partner	Paper-based Exercises and Electronic concordance lines (corpora)	TS/SS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Evaluation	1. Teacher asks volunteers to share their answers with the class 2. Teachers asks every students to check if any mistake in the volunteers' answers (Teacher should provide correction feedback and comments if necessary) 3. Students must check whether their answers are correct or not	- To provide an opportunity for students to share their knowledge with their friends - To provide an opportunity for students to check their knowledge about using corpora for finding information about English collocations.	Whiteboard and Handout	TS

Lesson Plan: Lexical Collocations I

Topic **Everyday Verbs I (Verb + Noun Collocations)**

Instructor Wachirapong Yaemtui

Length of Time 60 minutes

Learning Objectives Upon completion of the lesson, students will be able to

1. Correctly use the target V + N collocations.
2. Explain the differences and similarities of the target V + N collocations

Contents

1. Do / Make / Commit + N that mean *make*
2. Gain/ Win/ Earn/ Achieve + N that mean *receive*

Teaching and Learning Activities

1.	Description of Learning Objectives	5	minutes
2.	DDL Approach	45	minutes
3.	Evaluation	10	minutes

Teaching and Learning Materials

1. Electronic concordance lines (Corpus)
2. Supplementary materials
3. Worksheet

Evaluation

Exercises consisting of:

1. Multiple Choice Questions with 4 alternatives
2. True vs. False Questions
3. Matching Questions
4. Gap-filling the Questions

References

F. O'Dell & M. McCarthy (2008). *English Collocations in Use: Intermediate*. Cambridge University Press.

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Lead-in	1. Teacher explains the objective of the lesson to students. 2. Teacher activates students' background knowledge about V+ N collocations by having students identify some unacceptable V + N collocations in an example passage 3. Teacher gives feedback to students' answers.	- To introduce the lesson - To activate students' background knowledge about V + N collocations - To prepare students for the next activities	PowerPoint	TS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
45	DDL	4. **Identification**: Teacher identify the examined structure (target V + N collocations) by giving students paper-based collocation exercises consisting of 1. Multiple Choice Questions with 4 alternatives 2. True vs. False Questions 3. Matching Questions 4. Gap-filling the Questions The questions in the exercises function as areas of inquiry creating an immediate interest with students and probably responding to learners' questions. 5. **Classification**: Students are encouraged to explore electronic concordance lines retrieved from corpora (COCA) in order to find the answers to questions in the exercises. 6. **Generalization**: Students have to construct a particular regularity of V + N collocations presented in the concordance lines and must give correct answers to the questions.	- To provide an opportunity for students to learn target V + N collocations through DDL.	Computer with electronic concordance lines (corpus) and paper-based exercises	SS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
10	Evaluation	1. Teacher asks volunteers to share their answers with the class 2. Teacher asks every student to check if any mistake in the volunteers' answers but he won't provide the correct answers to students. Additionally, he encourages students to follow DDL procedures again in order to check whether their answers are correct or not	- To provide an opportunity for students to share their knowledge with their friends - To provide more opportunity for students to learn the target V + N collocations through DDL	Whiteboard and Handout	TS

Lesson Plan: Lexical Collocations I

Topic **Everyday Verbs I (Verb + Noun Collocations)**

Instructor Wachirapong Yaemtui

Length of Time 60 minutes

Learning Objectives Upon completion of the lesson, students will be able to

1. Correctly use the target V + N collocations.
2. Explain the differences and similarities of the target V + N collocations

Contents

1. Do / Make / Commit + N that mean *make*
2. Gain/ Win/ Earn/ Achieve + N that mean *receive*

Teaching and Learning Activities

1. Description of Learning Objectives	5	minutes
2. DDL Approach	45	minutes
3. Evaluation	10	minutes

Teaching and Learning Materials

1. Electronic concordance lines (Corpus)
2. Supplementary materials
3. Worksheet

Evaluation

Exercises consisting of:

1. Multiple Choice Questions with 4 alternatives
2. True vs. False Questions
3. Matching Questions
4. Gap-filling the Questions

References

F. O'Dell & M. McCarthy (2008). *English Collocations in Use: Intermediate.* Cambridge University Press.

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Lead-in	1. Teacher explains the objective of the lesson to students. 2. Teacher activates students' background knowledge about V+ N collocations by having students identify some unacceptable V + N collocations in an example passage 3. Teacher gives feedback to students' answers.	- To introduce the lesson - To activate students' background knowledge about V + N collocations - To prepare students for the next activities	PowerPoint	TS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
45	DDL	4. **Identification**: Teacher identify the examined structure (target V + N collocations) by giving students paper-based collocation exercises consisting of 1.Multiple Choice Questions with 4 alternatives 2.True vs. False Questions 3.Matching Questions 4.Gap-filling the Questions The questions in the exercises function as areas of inquiry creating an immediate interest with students and probably responding to learners' questions. 5. **Classification**: Students are encouraged to explore electronic concordance lines retrieved from corpora (COCA) in order to find the answers to questions in the exercises. 6. **Generalization**: Students have to construct a particular regularity of V + N collocations presented in the concordance lines and must give correct answers to the questions.	- To provide an opportunity for students to learn target V + N collocations through DDL.	Computer with electronic concordance lines (corpus) and paper-based exercises	SS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
10	Evaluation	1. Teacher asks volunteers to share their answers with the class 2. Teacher asks every student to check if any mistake in the volunteers' answers but he won't provide the correct answers to students. Additionally, he encourages students to follow DDL procedures again in order to check whether their answers are correct or not	- To provide an opportunity for students to share their knowledge with their friends - To provide more opportunity for students to learn the target V + N collocations through DDL	Whiteboard and Handout	TS

Lesson Plan: Lexical Collocations II

Topic **Everyday Verbs II (Verb + Noun Collocations)**

Instructor Wachirapong Yaemtui

Length of Time 60 minutes

Learning Objectives Upon completion of the lesson, students will be able to

1. Correctly use the target V + N collocations.
2. Explain the differences and similarities of the target V + N collocations

Contents

1. Have / Take / Pay / Get + N
2. Do / Play / Go + N (Sport collocations)

Teaching and Learning Activities

1. Description of Learning Objectives	5	minutes
2. DDL Approach	50	minutes
3. Evaluation	5	minutes

Teaching and Learning Materials

1. Electronic concordance lines (Corpus)
2. Supplementary materials
3. Worksheet

Evaluation

Exercises consisting of:

1. Multiple Choice Questions with 4 alternatives
2. True vs. False Questions
3. Matching Questions
4. Gap-filling the Questions

References

F. O'Dell & M. McCarthy (2008). *English Collocations in Use: Intermediate.* Cambridge University Press.

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Lead-in	1. Teacher explains the objective of the lesson to students. 2. Teacher activates students' background knowledge about V+ N collocations by having students identify some unacceptable V + N collocations in an example passage 3. Teacher gives feedback to students' answers.	- To introduce the lesson - To activate students' background knowledge about V + N collocations - To prepare students for the next activities	PowerPoint	TS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
45	DDL	4. **Identification**: Teacher identify the examined structure (target V + N collocations) by giving students paper-based collocation exercises consisting of 1.Multiple Choice Questions with 4 alternatives 2.True vs. False Questions 3.Matching Questions 4.Gap-filling the Questions The questions in the exercises function as areas of inquiry creating an immediate interest with students and probably responding to learners' questions. 5. **Classification**: Students are encouraged to explore electronic concordance lines retrieved from corpora (COCA) in order to find the answers to questions in the exercises. 6. **Generalization**: Students have to construct a particular regularity of V + N collocations presented in the concordance lines and must give correct answers to the questions.	- To provide an opportunity for students to learn target V + N collocations through DDL.	Computer with electronic concordance lines (corpus) and paper-based exercises	SS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
10	Evaluation	1. Teacher asks volunteers to share their answers with the class 2. Teacher asks every student to check if any mistake in the volunteers' answers but he won't provide the correct answers to students. Additionally, he encourages students to follow DDL procedures again in order to check whether their answers are correct or not	- To provide an opportunity for students to share their knowledge with their friends - To provide more opportunity for students to learn the target V + N collocations through DDL	Whiteboard and Handout	TS

Lesson Plan: Lexical Collocations III

Topic **Noun + Verb Collocations**

Instructor Wachirapong Yaemtui

Length of Time 60 minutes

Learning Objectives Upon completion of the lesson, students will be able to

1. Correctly use the target N + V collocations.
2. Explain the differences and similarities of the target N + V collocations

Contents

1. Common N + V collocations expressing number and frequency
2. Common N used with *deny*, *reject*, *refuse* to give sense of denying

Teaching and Learning Activities

1. Description of Learning Objectives 5 minutes
2. DDL Approach 50 minutes
3. Evaluation 5 minutes

Teaching and Learning Materials

1. Electronic concordance lines (Corpus)
2. Supplementary materials
3. Worksheet

Evaluation

Exercises consisting of:

1. Multiple Choice Questions with 4 alternatives
2. True vs. False Questions
3. Matching Questions
4. Gap-filling the Questions

References

F. O'Dell & M. McCarthy (2008). *English Collocations in Use: Intermediate.* Cambridge University Press.

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Lead-in	1. Teacher explains the objective of the lesson to students. 2. Teacher activates students' background knowledge about N + V collocations by having students identify some unacceptable N + V collocations in an example passage 3. Teacher gives feedback to students' answers.	- To introduce the lesson - To activate students' background knowledge about N + V collocations - To prepare students for the next activities	PowerPoint	TS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
45	DDL	4. **Identification**: Teacher identify the examined structure (target N + V collocations) by giving students paper-based collocation exercises consisting of 1.Multiple Choice Questions with 4 alternatives 2.True vs. False Questions 3.Matching Questions 4.Gap-filling the Questions The questions in the exercises function as areas of inquiry creating an immediate interest with students and probably responding to learners' questions. 5. **Classification**: Students are encouraged to explore electronic concordance lines retrieved from corpora (COCA) in order to find the answers to questions in the exercises. 6. **Generalization**: Students have to construct a particular regularity of N + V collocations presented in the concordance lines and must give correct answers to the questions.	- To provide an opportunity for students to learn target N + V collocations through DDL.	Computer with electronic concordance lines (corpus) and paper-based exercises	SS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
10	Evaluation	1. Teacher asks volunteers to share their answers with the class 2. Teacher asks every student to check if any mistake in the volunteers' answers but he won't provide the correct answers to students. Additionally, he encourages students to follow DDL procedures again in order to check whether their answers are correct or not	- To provide an opportunity for students to share their knowledge with their friends - To provide more opportunity for students to learn the target N + V collocations through DDL	Whiteboard and Handout	TS

Lesson Plan: Lexical Collocations IV

Topic **Adjective + Noun Collocations**

Instructor Wachirapong Yaemtui

Length of Time 60 minutes

Learning Objectives Upon completion of the lesson, students will be able to

1. Correctly use the target Adj + N collocations.
2. Explain the differences and similarities of the target Adj + N collocations

Contents

1. Adjectives mean 'much' (e.g. large, heavy, strong, hard, thick, dense and etc. + N)
2. Adjectives mean 'little' (e.g. light, weak, soft, small and etc. + N)

Teaching and Learning Activities

1. Description of Learning Objectives	5	minutes
2. DDL Approach	50	minutes
3. Evaluation	5	minutes

Teaching and Learning Materials

1. Electronic concordance lines (Corpus)
2. Supplementary materials
3. Worksheet

Evaluation

Exercises consisting of:

1. Multiple Choice Questions with 4 alternatives
2. True vs. False Questions
3. Matching Questions
4. Gap-filling the Questions

References

F. O'Dell & M. McCarthy (2008). *English Collocations in Use: Intermediate.* Cambridge University Press.

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Lead-in	1. Teacher explains the objective of the lesson to students. 2. Teacher activates students' background knowledge about Adj + N collocations by having students identify some unacceptable Adj + N collocations in an example passage 3. Teacher gives feedback to students' answers.	- To introduce the lesson - To activate students' background knowledge about Adj + N collocations - To prepare students for the next activities	PowerPoint	TS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
45	DDL	4. **Identification**: Teacher identify the examined structure (target Adj + N collocations) by giving students paper-based collocation exercises consisting of 1.Multiple Choice Questions with 4 alternatives 2.True vs. False Questions 3.Matching Questions 4.Gap-filling the Questions The questions in the exercises function as areas of inquiry creating an immediate interest with students and probably responding to learners' questions. 5. **Classification**: Students are encouraged to explore electronic concordance lines retrieved from corpora (COCA) in order to find the answers to questions in the exercises. 6. **Generalization**: Students have to construct a particular regularity of Adj + N collocations presented in the concordance lines and must give correct answers to the questions.	- To provide an opportunity for students to learn target Adj + N collocations through DDL.	Computer with electronic concordance lines (corpus) and paper-based exercises	SS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
10	Evaluation	1. Teacher asks volunteers to share their answers with the class 2. Teacher asks every student to check if any mistake in the volunteers' answers but he won't provide the correct answers to students. Additionally, he encourages students to follow DDL procedures again in order to check whether their answers are correct or not	- To provide an opportunity for students to share their knowledge with their friends - To provide more opportunity for students to learn the target Adj + N collocations through DDL	Whiteboard and Handout	TS

Lesson Plan: Lexical Collocations V

Topic **Adjective + Noun Collocations**

Instructor Wachirapong Yaemtui

Length of Time 60 minutes

Learning Objectives Upon completion of the lesson, students will be able to

1. Correctly use the target Adj + N collocations.
2. Explain the differences and similarities of the target Adj + N collocations

Contents

1. Adjective mean 'fast' (e.g. *speedy/ fast/ quick/ hasty/ prompt/ rapid/ brisk/ swift +N*)

Teaching and Learning Activities

1. Description of Learning Objectives	5	minutes
2. DDL Approach	50	minutes
3. Evaluation	5	minutes

Teaching and Learning Materials

1. Electronic concordance lines (Corpus)
2. Supplementary materials
3. Worksheet

Evaluation

Exercises consisting of:

1. Multiple Choice Questions with 4 alternatives
2. True vs. False Questions
3. Matching Questions
4. Gap-filling the Questions

References

F. O'Dell & M. McCarthy (2008). *English Collocations in Use: Intermediate.* Cambridge University Press.

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Lead-in	1. Teacher explains the objective of the lesson to students. 2. Teacher activates students' background knowledge about Adj + N collocations by having students identify some unacceptable Adj + N collocations in an example passage 3. Teacher gives feedback to students' answers.	- To introduce the lesson - To activate students' background knowledge about Adj + N collocations - To prepare students for the next activities	PowerPoint	TS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
45	DDL	4. **Identification**: Teacher identify the examined structure (target Adj + N collocations) by giving students paper-based collocation exercises consisting of 1.Multiple Choice Questions with 4 alternatives 2.True vs. False Questions 3.Matching Questions 4.Gap-filling the Questions The questions in the exercises function as areas of inquiry creating an immediate interest with students and probably responding to learners' questions. 5. **Classification**: Students are encouraged to explore electronic concordance lines retrieved from corpora (COCA) in order to find the answers to questions in the exercises. 6. **Generalization**: Students have to construct a particular regularity of Adj + N collocations presented in the concordance lines and must give correct answers to the questions.	- To provide an opportunity for students to learn target Adj + N collocations through DDL.	Computer with electronic concordance lines (corpus) and paper-based exercises	SS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
10	Evaluation	1. Teacher asks volunteers to share their answers with the class 2. Teacher asks every student to check if any mistake in the volunteers' answers but he won't provide the correct answers to students. Additionally, he encourages students to follow DDL procedures again in order to check whether their answers are correct or not	- To provide an opportunity for students to share their knowledge with their friends - To provide more opportunity for students to learn the target Adj + N collocations through DDL	Whiteboard and Handout	TS

Lesson Plan: Lexical Collocations VI

Topic **Adverb + Adjective Collocations**

Instructor Wachirapong Yaemtui

Length of Time 60 minutes

Learning Objectives Upon completion of the lesson, students will be able to

1.Correctly use the target Adv + Adj collocations.
2.Explain the differences and similarities of the target Adv + Adj collocations

Contents

1.Intensifying adverbs that mean 'very' or 'extremely' + Adj
2.Softening adverbs that mean 'a little bit' + Adj

Teaching and Learning Activities

1.Description of Learning Objectives	5	minutes
2.DDL Approach	50	minutes
3.Evaluation	5	minutes

Teaching and Learning Materials

1. Electronic concordance lines (Corpus)
1. Supplementary materials
2. Worksheet

Evaluation

Exercises consisting of:

1.Multiple Choice Questions with 4 alternatives

2.True vs. False Questions

3.Matching Questions

4.Gap-filling the Questions

References

F. O'Dell & M. McCarthy (2008). *English Collocations in Use: Intermediate.* Cambridge University Press.

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Lead-in	1. Teacher explains the objective of the lesson to students. 2. Teacher activates students' background knowledge about Adv + Adj collocations by having students identify some unacceptable Adv + Adj collocations in an example passage 3. Teacher gives feedback to students' answers.	- To introduce the lesson - To activate students' background knowledge about Adv + Adj collocations - To prepare students for the next activities	PowerPoint	TS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
45	DDL	4. **Identification**: Teacher identify the examined structure (target Adv + Adj collocations) by giving students paper-based collocation exercises consisting of 1.Multiple Choice Questions with 4 alternatives 2.True vs. False Questions 3.Matching Questions 4.Gap-filling the Questions The questions in the exercises function as areas of inquiry creating an immediate interest with students and probably responding to learners' questions. 5. **Classification**: Students are encouraged to explore electronic concordance lines retrieved from corpora (COCA) in order to find the answers to questions in the exercises. 6. **Generalization**: Students have to construct a particular regularity of Adv + Adj collocations presented in the concordance lines and must give correct answers to the questions.	- To provide an opportunity for students to learn target Adv + Adj collocations through DDL.	Computer with electronic concordance lines (corpus) and paper-based exercises	SS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
10	Evaluation	1. Teacher asks volunteers to share their answers with the class 2. Teacher asks every student to check if any mistake in the volunteers' answers but he won't provide the correct answers to students. Additionally, he encourages students to follow DDL procedures again in order to check whether their answers are correct or not	- To provide an opportunity for students to share their knowledge with their friends - To provide more opportunity for students to learn the target Adv + Adj collocations through DDL	Whiteboard and Handout	TS

Lesson Plan: Lexical Collocations VII

Topic **Adverb + Verb Collocations**

Instructor Wachirapong Yaemtui

Length of Time 60 minutes

Learning Objectives Upon completion of the lesson, students will be able to

1.Correctly use the target Adv + V collocations.
2.Explain the similarities and differences of the target Adv + V collocations

Contents

1.Common business and academic Adv + V collocations

Teaching and Learning Activities

1.Description of Learning Objectives	5	minutes
2.DDL Approach	50	minutes
3.Evaluation	5	minutes

Teaching and Learning Materials

1. Electronic concordance lines (Corpus)
1. Supplementary materials
2. Worksheet

Evaluation

Exercises consisting of:

1.Multiple Choice Questions with 4 alternatives

2.True vs. False Questions

3.Matching Questions

4.Gap-filling the Questions

References

F. O'Dell & M. McCarthy (2008). *English Collocations in Use: Intermediate.* Cambridge University Press.

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Lead-in	1. Teacher explains the objective of the lesson to students. 2. Teacher activates students' background knowledge about Adv + V collocations by having students identify some unacceptable Adv + V collocations in an example passage 3. Teacher gives feedback to students' answers.	- To introduce the lesson - To activate students' background knowledge about Adv + V collocations - To prepare students for the next activities	PowerPoint	TS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
45	DDL	4. **Identification**: Teacher identify the examined structure (target Adv + V collocations) by giving students paper-based collocation exercises consisting of 1.Multiple Choice Questions with 4 alternatives 2.True vs. False Questions 3.Matching Questions 4.Gap-filling the Questions The questions in the exercises function as areas of inquiry creating an immediate interest with students and probably responding to learners' questions. 5. **Classification**: Students are encouraged to explore electronic concordance lines retrieved from corpora (COCA) in order to find the answers to questions in the exercises. 6. **Generalization**: Students have to construct a particular regularity of Adv + V collocations presented in the concordance lines and must give correct answers to the questions.	- To provide an opportunity for students to learn target Adv + V collocations through DDL.	Computer with electronic concordance lines (corpus) and paper-based exercises	SS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
10	Evaluation	1. Teacher asks volunteers to share their answers with the class 2. Teacher asks every student to check if any mistake in the volunteers' answers but he won't provide the correct answers to students. Additionally, he encourages students to follow DDL procedures again in order to check whether their answers are correct or not	students to share their knowledge with their friends - To provide more opportunity for students to learn the target Adv + V collocations through DDL	Whiteboard and Handout	TS

Lesson Plan: Grammatical Collocations I

Topic **Verb + Preposition Collocations**

Instructor Wachirapong Yaemtui

Length of Time 60 minutes

Learning Objectives Upon completion of the lesson, students will be able to

1.Correctly use the target V + Preposition collocations.
2.Explain the differences and similarities of the target V + Preposition collocations

Contents

1.Common Verbs + preposition

Teaching and Learning Activities

1.Description of Learning Objectives	5	minutes
2.DDL Approach	50	minutes
3.Evaluation	5	minutes

Teaching and Learning Materials

1. Electronic concordance lines (Corpus)
1. Supplementary materials
2. Worksheet

Evaluation

Exercises consisting of:

1.Multiple Choice Questions with 4 alternatives

2.True vs. False Questions

3.Matching Questions

4.Gap-filling the Questions

References

F. O'Dell & M. McCarthy (2008). *English Collocations in Use: Intermediate.* Cambridge University Press.

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Lead-in	1. Teacher explains the objective of the lesson to students. 2. Teacher activates students' background knowledge about V + Prep collocations by having students identify some unacceptable V + Prep collocations in an example passage 3. Teacher gives feedback to students' answers.	- To introduce the lesson - To activate students' background knowledge about V + Prep collocations - To prepare students for the next activities	PowerPoint	TS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
45	DDL	4. **Identification**: Teacher identify the examined structure (target V + Prep collocations) by giving students paper-based collocation exercises consisting of 1.Multiple Choice Questions with 4 alternatives 2.True vs. False Questions 3.Matching Questions 4.Gap-filling the Questions The questions in the exercises function as areas of inquiry creating an immediate interest with students and probably responding to learners' questions. 5. **Classification**: Students are encouraged to explore electronic concordance lines retrieved from corpora (COCA) in order to find the answers to questions in the exercises. 6. **Generalization**: Students have to construct a particular regularity of V + Prep collocations presented in the concordance lines and must give correct answers to the questions.	- To provide an opportunity for students to learn target V + Prep collocations through DDL.	Computer with electronic concordance lines (corpus) and paper-based exercises	SS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
10	Evaluation	1. Teacher asks volunteers to share their answers with the class 2. Teacher asks every student to check if any mistake in the volunteers' answers but he won't provide the correct answers to students. Additionally, he encourages students to follow DDL procedures again in order to check whether their answers are correct or not	- To provide an opportunity for students to share their knowledge with their friends - To provide more opportunity for students to learn the target V + Prep collocations through DDL	Whiteboard and Handout	TS

Lesson Plan: Grammatical Collocations II

Topic **Adjective + Preposition Collocations**

Instructor Wachirapong Yaemtui

Length of Time 60 minutes

Learning Objectives Upon completion of the lesson, students will be able to

1.Correctly use the target Adj + Preposition collocations.
2.Explain the differences and similarities of the target Adj + Preposition collocations

Contents

1.Common Adj+ preposition

Teaching and Learning Activities

1.Description of Learning Objectives	5	minutes
2.DDL Approach	50	minutes
3.Evaluation	5	minutes

Teaching and Learning Materials

1. Electronic concordance lines (Corpus)
1. Supplementary materials
2. Worksheet

Evaluation

Exercises consisting of:

1.Multiple Choice Questions with 4 alternatives

2.True vs. False Questions

3.Matching Questions

4.Gap-filling the Questions

References

F. O'Dell & M. McCarthy (2008). *English Collocations in Use: Intermediate.* Cambridge University Press.

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Lead-in	1. Teacher explains the objective of the lesson to students. 2. Teacher activates students' background knowledge about Adj + Prep collocations by having students identify some unacceptable Adj + Prep collocations in an example passage 3. Teacher gives feedback to students' answers.	- To introduce the lesson - To activate students' background knowledge about Adj + Prep collocations - To prepare students for the next activities	PowerPoint	TS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
45	DDL	4. **Identification**: Teacher identify the examined structure (target Adj + Prep collocations) by giving students paper-based collocation exercises consisting of 1.Multiple Choice Questions with 4 alternatives 2.True vs. False Questions 3.Matching Questions 4.Gap-filling the Questions The questions in the exercises function as areas of inquiry creating an immediate interest with students and probably responding to learners' questions. 5. **Classification**: Students are encouraged to explore electronic concordance lines retrieved from corpora (COCA) in order to find the answers to questions in the exercises. 6. **Generalization**: Students have to construct a particular regularity of Adj + Prep collocations presented in the concordance lines and must give correct answers to the questions.	- To provide an opportunity for students to learn target Adj + Prep collocations through DDL.	Computer with electronic concordance lines (corpus) and paper-based exercises	SS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
10	Evaluation	1. Teacher asks volunteers to share their answers with the class 2. Teacher asks every student to check if any mistake in the volunteers' answers but he won't provide the correct answers to students. Additionally, he encourages students to follow DDL procedures again in order to check whether their answers are correct or not	- To provide an opportunity for students to share their knowledge with their friends - To provide more opportunity for students to learn the target Adj + Prep collocations through DDL	Whiteboard and Handout	TS

Lesson Plan: Grammatical Collocations III

Topic **Noun + Preposition Collocations**

Instructor Wachirapong Yaemtui

Length of Time 60 minutes

Learning Objectives Upon completion of the lesson, students will be able to

1.Correctly use the target N + Preposition collocations.
2.Explain the differences and similarities of the target N + Preposition collocations

Contents

1.Common N + preposition

Teaching and Learning Activities

1.Description of Learning Objectives	5	minutes
2.DDL Approach	50	minutes
3.Evaluation	5	minutes

Teaching and Learning Materials

1. Electronic concordance lines (Corpus)
1. Supplementary materials
2. Worksheet

Evaluation

Exercises consisting of:

1.Multiple Choice Questions with 4 alternatives
2.True vs. False Questions
3.Matching Questions
4.Gap-filling the Questions

References

F. O'Dell & M. McCarthy (2008). *English Collocations in Use: Intermediate.* Cambridge University Press.

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
5	Lead-in	1. Teacher explains the objective of the lesson to students. 2. Teacher activates students' background knowledge about N + Prep collocations by having students identify some unacceptable N + Prep collocations in an example passage 3. Teacher gives feedback to students' answers.	- To introduce the lesson - To activate students' background knowledge about N + Prep collocations - To prepare students for the next activities	PowerPoint	TS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
45	DDL	4. **Identification**: Teacher identify the examined structure (target N + Prep collocations) by giving students paper-based collocation exercises consisting of 1.Multiple Choice Questions with 4 alternatives 2.True vs. False Questions 3.Matching Questions 4.Gap-filling the Questions The questions in the exercises function as areas of inquiry creating an immediate interest with students and probably responding to learners' questions. 5. **Classification**: Students are encouraged to explore electronic concordance lines retrieved from corpora (COCA) in order to find the answers to questions in the exercises. 6. **Generalization**: Students have to construct a particular regularity of N + Prep collocations presented in the concordance lines and must give correct answers to the questions.	- To provide an opportunity for students to learn target N + Prep collocations through DDL.	Computer with electronic concordance lines (corpus) and paper-based exercises	SS

Time (Minutes)	Activity	Procedures	Aims / Objectives	Materials	Interaction pattern
10	Evaluation	1. Teacher asks volunteers to share their answers with the class 2. Teacher asks every student to check if any mistake in the volunteers' answers but he won't provide the correct answers to students. Additionally, he encourages students to follow DDL procedures again in order to check whether their answers are correct or not	- To provide an opportunity for students to share their knowledge with their friends - To provide more opportunity for students to learn the target N + Prep collocations through DDL	Whiteboard and Handout	TS

APPENDIX I

COLLOCATION EXERCISES

Introduction to English Collocations

What is a collocation?

A collocation is a pair or group of words that are often used together. These combinations sound natural to native speakers, but students of English have to make a special effort to learn because they are difficult to guess. Some combinations just sound 'wrong' to native speakers of English. For example, the adjective *fast* collocates with *cars*, but not with *a glance*.

We say……..	*We don't say……..*
fast cars **fast food**	**~~quick~~ cars** **~~quick~~ food**
a quick glance **a quick meal**	**a ~~fast~~ glance** **a ~~fast~~ meal**

Learning collocations is an important part of learning vocabulary of language. Some collocations are fixed, or very strong; for example, **take a photo**, where no word other than *take* collocates with *photo* to give the same meaning. Some collocations are more open, where different words may be used to give similar meaning; for example, **keep to/ stick to the rules**.

What are the differences between compound, idioms, and collocations?

Compounds are unit of meaning formed with two or more words. Sometimes the words are written separately, sometimes they have a hyphen and sometimes they are written as one word. Usually the meaning of the compound can be guessed by knowing the meaning of the individual words.

Idioms are groups of words in a fixed order that have a meaning that have a meaning that cannot be guessed by knowing the meaning of the individual words. For example, **pass the buck** is an idiom meaning 'to pass responsibility for the problem to another person to avoid dealing with it oneself'.

Idioms	Collocations	Compounds
to kick the bucket	to trade actively	car park
dead end	table of content	teapot
to catch up	orthogonal projection	narrow-minded

Strong, fixed and weak collocations

Strong collocations

A strong collocations is one in which the words are very closely associated with each other. For example, the adjective **mitigating** almost always collocates with **circumstances** or **factors**; it rarely collocates with any other word.

Fixed collocations

Fixed collocations are collocations so strong that they cannot be changed in any way. For example, you can say *I was walking to and fro* (meaning I was walking in one direction and then in the opposite direction, a repeated number of times). No other words can replace *to* or *fro* or *and* in this collocation. This means it is completely fixed.

Weak collocations

Weak collocations are made up of words that collocate with a wide range of other words. For example, you can say you are in broad agreement with someone (meaning generally in agreement with them). However, broad can also be used with a number of other words- a broad avenue, a broad smile, broad shoulders, a broad accent (strong accent) and so on.

Lexical and Grammatical collocations

The lexical collocations are those word pairs which are lexically restricted. This type of collocations generally comprises two or more content words, i.e. verbs, nouns, adverbs, and adjectives. The following information exemplifies this type of collocations:

noun + *verb*:	e.g. *bombs explode*, *bees string*
verb + *noun*:	e.g. *reject an appeal*, *launch a missile*
adjective + *noun*:	e.g. *strong tea*, *blonde hair*
adverb + *adjective*:	e.g. *homelessly addicted*, *sound asleep*
verb + *adverb*:	e.g. *argue heatedly*, *apologize humbly*
adverb + *verb*:	e.g. *soundly sleep*, *gently remind*

The grammatical collocations are the word combinations consisting of a content word and a function word which is usually a preposition, including paired syntactic categories, and a grammatical structure such as an infinitive or a clause as illustrated below:

noun + *preposition*:	e.g. *apathy towards*, *blockade against*
verb + *preposition*:	e.g. *apologize for*, *refer to*
adjective + *preposition*:	e.g. *angry at*, *fond of*

Why learn collocations?

Learning collocations is a good idea because they can:

a) Give you the most natural way to say something: *smoking is* ***strictly forbidden*** is more natural than *smoking is* ***strongly forbidden***.

b) Give you alternative way to say something, which may be more colourful, expressive, or more precise: instead of repeating *It was* ***very cold*** *and* ***very dark***, we can say *It was* ***bitterly cold*** *and* ***pitch dark***.

c) Improve your style of writing: instead of saying *poverty* ***causes crime***, you can say *poverty* ***breeds crime***. You may not need or want to use this in informal language, but in writing they can give your text more variety and make it read better.

Exercise I: Introduction to English Collocations

Task I:Give short answers to the following questions

1. What is a collocation?

_____

_____

_____

_____

_____

2. What are the two main types of collocations? Give examples of each collocation type.

_____

_____

_____

_____

_____

_____

Task II: Put the expressions from the box into correct category in the table below.

make a mistake	a storm in a tea cup	live music	checkpoint
key ring	pull somebody's leg	heavy snow	valid passport
teapot	bitterly disappointed	book a table	sea water

Compound	Collocation	Idiom

Task III: Underline collocations in the text

When I left university I made decision to take up a profession in which I could be creative. I could play the guitar, but I'd never written any songs. Nonetheless I decided to become a singer-songwriter. I made some recordings but I had a rather heavy cold so they didn't sound good. I made some more, and sent them to a record company and waited for them to reply. So, while I was waiting to become famous, I got a job in a fast-food restaurant. That was five years ago. I'm still doing the same job.

Task III: Write 'T' if the statement is TRUE and write 'F' if the statement is FLASE

_____ 1) Learning collocations will make your English sound more natural.

_____ 2) Learning collocations will help you to express yourself in a variety of ways.

_____ 3) Learning collocations will help you write better English.

_____ 4) Using collocations properly will help you write better English.

_____ 5) You will not be understand unless you use collocations properly.

----------END OF EXERCISE----------

Lexical Collocations I Exercise: Do/ Make/ Commit + Noun Collocations

Task I: Choose the correct collocation, 'do', 'make', or 'commit'

1. Did the fire *do/ make/ commit* much damage to the factory.
2. I hate to *do/ make/ commit* my homework at the last minute.
3. You must *do/ make/ commit* an effort to work harder.
4. Did you *do/ make/ commit* any work at the weekend?
5. We are trying to *do/ make/ commit* improvements to the system for registering.
6. Do you think it would *do/ make/ commit* any harm if I cut some leaves off the plants?
7. I don't believe that Thomas will *do/ make/ commit* the crime.
8. The school can *do/ make/ commit* arrangement for pupils with special needs.
9. The teacher says that all that matters in the exam is to *do/ make/ commit* your best.
10. I have heard the news about Nathan who has been trying several times to *do/ make/ commit* suicide.
11. The new manager is planning to *do/ make/ commit* some changes.
12. We are about to *do/ make/ commit* an experiment to test how the metal reacts with water.
13. Jeffery should *do/ make/ commit* a useful contribution to his decision.
14. I'm glad it's you who has to *make/ do/ commit* the decision, not me.
15. We will *do/ make/ commit* some exercises practicing these collocations tomorrow.
16. They have to *make/ do/ commit* a mistake in our bill.
17. My son has to *do/ make/ commit* his homework straight after school.
18. I've got to *make/ do/ commit* some phone calls before dinner.
19. I will *do/ make/ commit* the washing after lunch.
20. Harriet is trying to *make/ do/ commit* progress with all her schoolwork.

Task II: Choose the correct collocation to complete the conversation

1. Miriam: The bill says we have had three desserts. We only had two?
   Rosa: The waiter must *make/ do/ commit* a mistake.
2. Kim: It's so difficult. Should I take the job or not?
   Todd: I know it's difficult. But you have to *do/ commit/ make* a decision.
3. Jane: Can you and Brian come to dinner on Saturday?

Jill: Yes, we have to *commit/ make/ do* an arrangement to get a babysitter, but it should be OK.

4. Brona: Did you hear about the air traffic controllers' strike in the USA?

Aaron: Yes. We had to *make/ do/ commit* a change with our travel itinerary because of it.

5. Pete: Can I have chips and rice with my lunch?

Clare: No, you have to *do/ commit/ make* a decision, chips or rice.

6. Fran: Do you intend to speak at the meeting?

Gloria: Yes, I hope I can *commit/ make/ do* a contribution to the debate.

7. Nick: Do you ever *make/ commit/ do* the cooking at home?

Mike: Yes, I always do it because I love cooking.

8. Victor: Why don't you move to other country?

Abby: I think if I move to other country, it will be difficult for me to *commit/do/ make* friends with people.

9. Todd: Do you ever *do/ make/ commit* negative comments about your friends' hair, clothes, etc?

Cathy: No…I think it's not a good idea.

10. Robby: Do you *make/ commit/ do* excuses if someone ask you to *do/ make/ commit* a big favor for them?

Eddie: No, I always help others.

Lexical Collocations I Exercise: Gain/ Achieve/ Earn/ Win + Noun Collocations

Task III: Use a verb from the box in the correct form to compete each collocation.

achieve	**earn**	**gain**	**win**

1. Jack has already _____ a very good reputation as a talented lawyer.
2. Kim has _____ prizes for singing.
3. It is important to have goals even if you do not always _____ such goals.
4. In the tournament Hannah beats all her opponents and _____ the gold medal.
5. Nowadays John _____ a very good salary.
7. In the cycle race, Henrik _____ an advantage when several of his opponents had punctures.

----------END OF EXERCISE----------

Lexical Collocations II Exercise: Make/ Provide / Pay/ Have/ Take + Noun

Task I: Choose the correct collocation

1. She *made/ provided/ paid* attention to what I told her and started working harder.
2. I *paid/ had/ took* a bad dream last night and woke up sweating.
3. The President *provided/ paid/ made* tribute to all the people who supported him.
4. I *paid/ provided/ had some* information to customer so that they could choose the best thing.
5. I *had/ provided/ paid* a feeling I had met Richard before, but I couldn't remember where.
6. She *provided/ paid/ made* me a nice compliment yesterday.
7. I went to Douglas Farnham's funeral to *make/ pay/ provide* my last respects to a fine man.
8. Shall we *pay/ take/ have* a party for Jane? She's leaving school next week.
9. We need to *provide/ pay/ take* action immediately unless it is too late.
10. I *had/ provided/ paid* a feeling that he was trying to hide something from me.

Task II: Read the letter and choose the correct collocations.

Hi, Jean

We so glad we decided to *pay/ take/ make* a holiday here. Yesterday we *got/ paid/ took* a trip to the mountains. First we paid/ had/ took a train to various villages and got off when we saw one that we *took/ paid/ had* a liking to. Of course, we were having/ taking/ paying a risk as we didn't know exactly what we'd find there. But we were lucky. Some kids *took/ paid/ had* an interest in us and showed us some great places. We *took/ paid / had* a lot of photos.

Have you do anything yet about your job? I'd *pay/ have/ take* a chance and leave if I were you. No point in staying somewhere where the boss has *paid/ had/ taken* a dislike to you! *Take/ Pay/ Have* advantage of being in London— there are always plenty of jobs there. You'll soon find something else, so *take/ have/ pay* action, that's my advice! Good luck!

Ellen

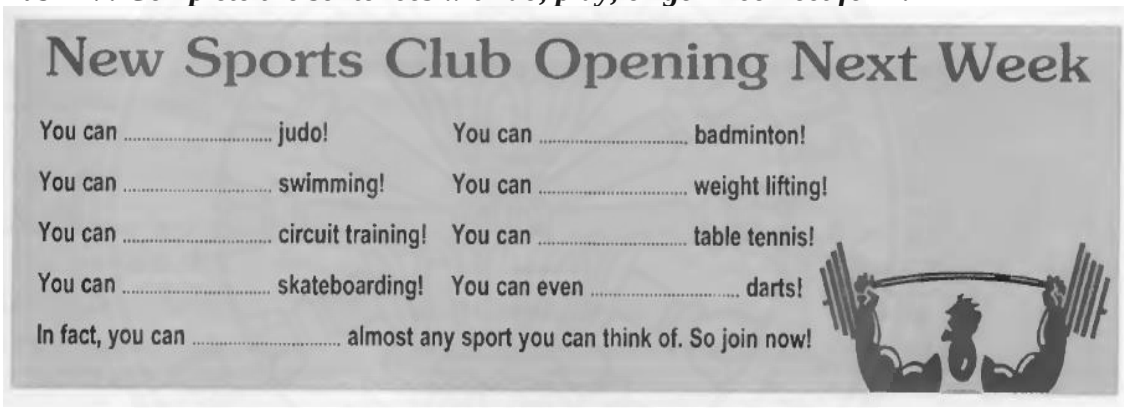
Lexical Collocations II Exercise: Go/ Do/ Play + Sports

Task III: Put Do/ Play/ Go into the correct column

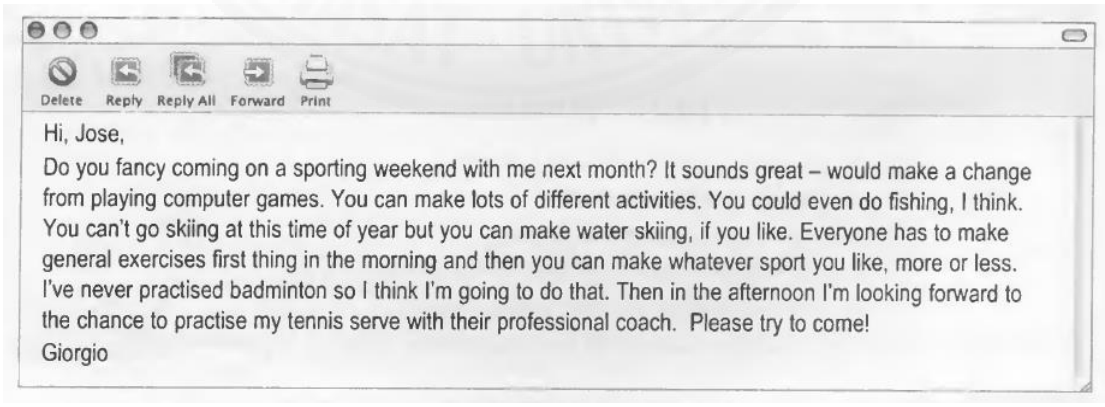
gymnastics	fishing	games	skiing	aerobics	yoga
wrestling	archery	cycling	rugby	golf	climbing
athletics	cards	hockey	surfing	chess	sailing

Verb	Sports
Do	
Play	
Go	

Task IV: Complete the sentences with do, play, or go in correct form.



Task III: There are six verb + noun errors in this e-mail. Find and correct them.



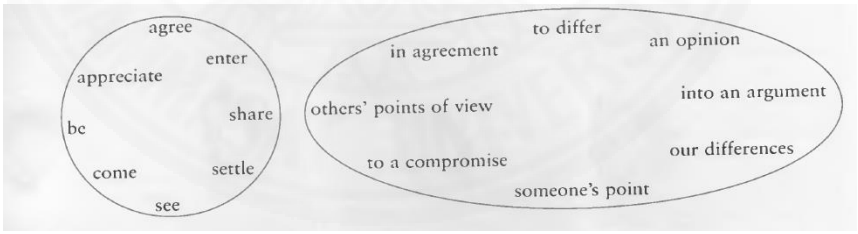
----------END OF EXERCISE----------

Lexical Collocations VI Exercise: V + N collocations

Task I: Choose correct collocations

1. I think we should *accept/ receive / agree* Jill's invitation to their New Year's Party, don't you?
2. I hope they won't *disclaim/ object/ reject* my suggestion about their study.
3. Despite the evidence against them, they *disclaim/ deny/ reject* the charges.
4. I will *disclaim/ object/ refuse* Mike's offer because I believe he is not sincere.
5. The students *disclaim/ refuse/ deny* their responsibility to clean the classroom after class.
6. Nathan must *object/ deny/ reject* the accusation if he is innocent.
7. The committees always *reject/ refuse/ deny* my idea about the new marketing plans.
8. The pop star has *disclaimed/ rejected/ denied* all the rumors about her marriage.
9. The Prime Minister *refuses/ denies/ disclaims* the claims of corruption made against him.
10. The manager of the company has to *disclaim/ refuse/ deny* the allegation if he doesn't do anything against the company's regulations.

Task II: Make collocations by matching the verbs from the circle on the left with the nouns from the oval on the right.



1._____ 2._____

3._____ 4._____

5._____ 6._____

7._____ 8._____

----------END OF EXERCISE----------

Lexical Collocations III Exercise: Adj meaning 'much' and 'little' + N Collocations

Task I: Choose the correct adjectives to make correct adjective + noun collocations

1. There is *thick/ strong/ heavy* fog on the motorway this morning.
2. You should avoid going on the beach at midday when there is a *heavy/ strong/ high* sun.
3. The road conditions are difficult because of the *strong/ dense/ heavy* rain.
4. There will be a *hard/ thick/ high* frost tonight.
5. The radio reports that there will be the *strong/ heavy/ thick* wind tomorrow.
6. I don't want to carry a *fat/ strong/ large* book because it is too heavy.
7. I think this is just a *small/ light/ low* problem for you so just take it easy.
8. Susana doesn't like having *small/ little/ light* talk with strangers.
9. There were a *little/ low/ small* quantities of milk in the bottle.
10. I like buying things at *little/ low/ small* prices because I can save my money.

Task II: Cross out the five collocation errors in the text and write the correct words in the provided spaces.

Although we had a little increase in our pay

_____

last month, we still earn very small wages.

_____

We have not had a big deal of help from the

_____

union, and tall prices mean that life is not

_____

easy. Luckily, we only have a small level of

_____

inflation at the moment.

Task III: Change the underlined words so that each sentence has the <u>opposite</u> meaning.

1. Cilla is having some <u>minor</u> difficulties at work.
2. She was wearing red boots with <u>low</u> heels.
3. The company manufacturers these components on a <u>small</u> scale.
4. We have had <u>low</u> interest rates for the last three years.
5. There were <u>small</u> quantities of oil in the tanks.

----------END OF EXERCISE----------

Lexical Collocations IV Exercise: Adj meaning 'fast' + N Collocations

Task I: Choose the correct collocation.

1. Joe gave Lynne a *speedy/ fast/ quick* glance to see if she was OK.
2. If you come to a *hasty/ prompt/ brisk* decision, it may well be the wrong one.
3. I marked my e-mail as urgent so I hope I get a *brisk/ prompt/ rapid* response.
4. The missile attacks provoked a *fast/ swift/ hasty* reaction from other side.
5. There has been a *fast/ rapid/ quick* increase in the number of tourists visiting the city since the museum was opened.
6. Luke has a passion for *quick/ swift/ fast* cars.
7. I'm glad to say that business has been very *brisk/ prompt/ swift* all morning.
8. I think I'd better bring the meeting to a *brisk/ speedy/ fast* conclusion now, as we are running out of time.
9. I don't like driving in the *fast/ quick/ speedy* lane on the motor way because it's dangerous.
10. The government took *quick/ swift/ speedy* action to change the law.

Task II: Correct the collocation errors in these sentences.

1. Let's take the speedy train to Paris even though it's more expensive.
2. She bought a motorbike with a hasty speed of almost 200 kilometers per hour.
3. Let's have a rapid lunch and then get back to work as soon as possible.
4. Charlie always does everything in a speedy manner.
5. We should not make a brisk decision because we may regret it later.

----------END OF EXERCISE----------

Lexical Collocations V Exercise: Intensifying and Softening Adverbs

Task I: Choose an adverb from the box to replace 'very' in each of these expressions

utterly	**strongly**	**bitterly**	**ridiculously**	**highly**	**deeply**

1. very ashamed = _____
2. very cheap = _____
3. very controversial = _____
4. very stupid = _____
5. very successful = _____
6. very disappointing = _____
7. very opposed = _____
8. very ridiculous = _____
9. very easy = _____
10. very concerned = _____

Task II: In each of these sets of phrases, one is not a correct collocation. Cross out the incorrect one.

1.	strongly recommend	strongly influence
	strongly love	strongly dislike
2.	highly educated	highly profitable
	highly unusual	highly exhausted
3.	bitterly regard	bitterly regret
	bitterly resent	bitterly criticize
4.	absolutely convinced	absolutely tired
	absolutely devastated	absolutely absurd
5.	deeply unhappy	deeply religious
	deeply successful	deeply committed

Task III: In this short text, the writer has often misused the word 'strongly'. Correct the wrong collocations using adverbs from the box. Use each adverb once only.

strictly	**bitterly**	**utterly**	**deeply**

Everyone was complaining strongly when they heard about the new plan. People were strongly shocked to hear that children would be strongly forbidden to use sports ground and most people were strongly opposed to the new rules. Even people who normally never expressed an opinion were strongly appalled by the proposal.

Task IV: Choose an adverb from the box to replace 'a little bit' in each of these expressions

slightly	**mildly**	**loosely**	**faintly**

1. a little bit surprised = _____
2. a little bit based on = _____
3. a little bit ridiculous = _____
4. a little bit different = _____
5. a little bit amusing = _____
6. a little bit centered = _____
7. a little bit patronizing = _____
8. a little bit irritated = _____
9. a little bit related = _____
10. a little bit absurd = _____
11. a little bit offensive = _____
12. a little bit connected = _____

----------END OF EXERCISE----------

Grammatical Collocations I Exercise: Verb + Preposition Collocations

Task I: Choose correct collocations

1. The research study should consist *of/ in/ with* five chapters—introduction, literature review, methodology, findings, and discussion.
2. Nathalie was punished *about/ at/ for* not telling the truth to her parents.
3. The president apologized *with/ for/ to* everyone that he could not effectively solve many problems of the country.
4. After being diagnosed *on/ with/ for* anemia, Nathan recovers from the illness in a week.
5. Julia's grandmother died *of/ with/ at* lung cancer two years ago.
6. Tommy has to speculate *on/ for/ about* the reason for buying his new car.
7. All students are asked to participate *in/ with/ on* the class discussion.
8. It is a good idea that we are able to adapt *with/ for/ to* changing circumstances.
9. Everyone should agree *on/ with/ about* the plan to move our factory to a foreign country.
10. Bike doesn't agree *on/ with/ about* his group members so he decides to form a new team.
11. Mike apologized *for/ to/ about* being late for the meeting.
12. Most of people in the country believe *about/ in/ at* the principles of sustainable economy.
13. The teacher has told students to concentrate *about/ on/ for* reading books before the exam.
14. Michael has dreamed *of/ for/ at* being a flight attendant since she was a child.
15. I always pray *for/ about/ of* being healthy because I don't want to have any sickness.
16. Jane smiled *at/ to/ with* Jack when she saw him at the department store last week.
17. My father has worked *for/ at/ with* Sony Co., Ltd. for almost 15 years.
18. Ken thinks that he can succeed *in/ for/ with* his education if he goes to study in USA.
19. You should respond *to/ with/ for* the customers' inquiries immediately unless they will buy products from other companies.
20. My cat has suffered *from/ with/ about* illness for a long time after being bitten by a dog.

----------END OF EXERCISE----------

Grammatical Collocations II Exercise: Adjective + Preposition Collocations

Task I: Choose correct collocations

1. My mother is disappointed *in/ with/ of* my English examination results.
2. Natalie is very amazed *in/ at/ over* the audiences' reaction after her performance.
3. After reading the book for several times, John still isn't clear *on/ with/ in* what the writer trying to explain.
4. Working experience is important *with/ for/ on* candidates if they want to get a job.
5. Thai national costume is very striking *in/ for/ with* its uniqueness.
6. The use of pesticides in agricultural sections can be harmful *with/ on/ to* environment.
7. Mike's mother is really worried *about/ with/ in* his study because he got F in English.
8. The government is interested *in/ at/ with* the new development plan of the country.
9. Florence is famous *with/ in/ for* its art treasures.
10. My father is very excellent *at/ in/ about* repairing things.
11. Are you excited *with/ about/ in* going on holiday next week?
12. I'm very proud *with/ for/ of* my daughter, she has worked very hard since high school.
13. Jane has been married *with/ to/ for* her husband for almost 10 years.
14. My niece is really afraid *of/ with/ for* dogs.
15. Are you pleased *about/ in/ with* your new car and house?
16. Lucy is extremely good *for/ in/ at* learning new languages and she is a quick learner.
17. My son is allergic *with/ to/ for* peanuts so I have to take a very good care of his food.
18. Jonathan is really angry *at/ to/ with* his neighbors who had a party very late last night.
19. I am very anxious *at/ for/ about* the result of my job interview.
20. Mike is really envious *of/ for/ at* his sister's wealth.

----------END OF EXERCISE----------

Grammatical Collocations III Exercise: Noun + Preposition Collocations

Task I: Choose correct collocations

1. Annie's dedication *to/ on/ for* her work has been improved during the past 5 years.
2. Bobby's reaction *at/ to/ on* his son's aggressive behaviors makes his wife angry.
3. The teacher asks me to share my interest *in/ at/ for* studying aboard.
4. Danny's experience *with/ on/ in* working as a volunteer makes him a strong candidate for this job.
5. Frank's mother is worried about his addiction *with/ on/ to* watching TV.
6. I don't like travelling by airplanes because of my fear *of/ about/ with* height
7. After making a decision *for/ on/ to* my study, I apply for a university in Hong Kong.
8. Government officers have a particular responsibility *about/ for/ of* providing the shelter for the victims of the earthquake.
9. Maria anxiety *about/ of/ for* speaking in public caused her to lose the job.
10. Jacky has more opportunity to get this job because she has the advantage *on/ of/ in* speaking English fluently.
11. Kenny's belief *in/ about/ of* not harming animals was something he has learned from his mother.
12. The delay *of/ on/ in* processing the visa caused a lot of problems to the tourists.
13. My devotion *to/ for/ on* swimming allowed me to win the competition.
14. Mike believes his memories *of/ about/ on* travelling in Africa will stay with him.
15. The process *of/ in/ for* painting an aircraft is more complicated than you might think.
16. My main reason *for/ on/ of* taking this course is to improve my English skills.
17. Lucy's reputation *of/ for/ on* lying is known by everyone.
18. My son's talent *for/ on/ at* learning languages is so impressive.
19. The criminal's regretted *on/ for/ in* committing the crime did not convince the judge.
20. This figure could reflect their dissatisfaction *of/ in/ with* the lack of training.

----------END OF EXERCISE----------

BIOGRAPHY

Name	Mr. Wachirapong Yaemtui
Date of Birth	July 24, 1984
Education Attainment	2004-2207: Bachelor of Arts, English Language and Literature, Thammasat University 2004-2011: Bachelor of Political Sciences, Ramkamheang University 2008-2010: Master of Arts, Teaching English as a Foreign Language (International Program), Thammasat University
Work Position	Full-time English Lecturer Language and Academic Services Center, International College for Sustainability Studies, Srinakharinwirot University
Scholarship	2015: MEDLIT-Project (International Media Studies: Media Literacy as Media Competence Program for Social Change; Erasmus+ Capacity Building for Higher Education Project

Publications

Yaemtui, W. (2015). Investigating Reading Strategies Utilized by Able English Users and Less Able English Users of Thai EFL Students. *International Forum of Teaching and Studies*, 11 (1-2), 55-68.

Yaemtui, W. (2018). The Effects of ASEAN English Accents on Listening Comprehension and Attitudes of Thai Students: The Phenomenon of English as a Lingua Franca in ASEAN. *The ASIAN EFL Journal*, 20 (9.2), 90-107.

Athiworakun, C., Rajprasit, K., Thongprayoon, T., Vathanalaoha, K. & Yaemtui, W. (2018). SWU-SET as a CEFR Standardized English Test. *Journal of Language Teaching and Research*, 9(2), 261-267.

Work Experience	2014-Present: Full-time English Lecturer Language and Academic Services Center, College for Sustainability Studies, Srinakharinwirot University
	2014-Present: Part-time English Lecturer. Faculty of Liberal Arts, King Mongkut's University of Teachnology Thonburi
	2011-2016: Part-time English Lecturer, Language Institute, Rangsit University
	2011-2014: Part-time English Lecturer, Language Institute, Burapha University
	2009-2011: Cabin Crew Member, Krabi Airlines Co, Ltd.