# THE USE OF A COOPERATIVE CORPUS CONSULTATION TO PROMOTE THE ACQUISITION OF ADJECTIVE + PREPOSITION COLLOCATIONS AMONG L1 THAI LEARNERS OF ENGLISH

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A Dissertation Submitted in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy Program in English as an International Language
(Interdisciplinary Program)
Graduate School
Chulalongkorn University
Academic Year 2017

# การใช้คลังข้อมูลเป็นกลุ่มเพื่อส่งเสริมการรับคำปรากฏร่วมของคำวิเศษณ์และคำบุพบทของผู้เรียนที่มีภาษาไทยเป็นภาษาที่หนึ่ง

นางสาวสุภาพร กุลสิทธิบูรณ์



วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรดุษฎีบัณฑิต
สาขาวิชาภาษาอังกฤษเป็นภาษานานาชาติ (สหสาขาวิชา)
บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2560

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| Thesis Title | THE USE OF A COOPERATIVE CORPUS CONSULTATION TO PROMOTE THE ACQUISITION OF ADJECTIVE + PREPOSITION COLLOCATIONS AMONG L1 THAI LEARNERS OF ENGLISH |
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| Field of Study | English as an International Language |
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สุภาพร กุลสิทธิบูรณ์ : การใช้คลังข้อมูลเป็นกลุ่มเพื่อส่งเสริมการรับคำปรากฏร่วมของคำวิเศษณ์และคำบุพบทของผู้เรียนที่มีภาษาไทยเป็นภาษาที่หนึ่ง (THE USE OF A COOPERATIVE CORPUS CONSULTATION TO PROMOTE THE ACQUISITION OF ADJECTIVE + PREPOSITION COLLOCATIONS AMONG L1 THAI LEARNERS OF ENGLISH) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: รศ. ดร.ณัฐมา พงศ์ไพโรจน์, 223 หน้า.

งานวิจัยนี้มุ่งส่งเสริมการรับคำปรากฏร่วมของคำวิเศษณ์และคำบุพบทของผู้เรียนที่มีภาษาไทยเป็นภาษาแม่ผ่านการใช้คลังข้อมูลเป็นกลุ่ม งานวิจัยมีสามวัตถุประสงค์ คือ ศึกษาผลที่เกิดจากการใช้คลังข้อมูลเป็นกลุ่ม ศึกษากลยุทธ์ที่ผู้เรียนใช้ในการรับมือกับการใช้คลังข้อมูล และศึกษาทัศนคติของผู้เรียนที่มีต่อกระบวนการ งานวิจัยมีระยะเวลาศึกษาหนึ่งภาคการศึกษา และทดลองกับนักศึกษาชั้นปีที่หนึ่งของมหาวิทยาลัยศรีนครินทรวิโรฒจำนวน 74 คน ผู้เข้าร่วมวิจัยถูกแบ่งออกเป็นสองกลุ่ม กลุ่มหนึ่งคือกลุ่มทดลองที่ศึกษาคำปรากฏร่วมจากเอกสารประกอบการสอนและกิจกรรมออนไลน์ในรูปแบบกลุ่มย่อยที่มีสมาชิกสามถึงสี่คน อีกกลุ่มคือกลุ่มควบคุมที่ศึกษาคำปรากฏร่วมจากเอกสารประกอบการสอนและกิจกรรมออนไลน์เดียวกันโดยปัจเจกบุคคล เครื่องมือวิจัยประกอบไปด้วย ข้อสอบก่อนเรียน ข้อสอบหลังเรียน แบบสอบถามก่อนการทดลอง บันทึกประจำวันของผู้เรียน แบบจดบันทึกรายการการสังเกตในชั้นเรียน แบบสอบถามหลังจบการทดลอง แบบสอบถามความสามารถของผู้เรียน และการสัมภาษณ์กระตุ้นความจำ ผลการทดลองสามารถสรุปเป็นสามประเด็น ประเด็นที่หนึ่ง คะแนนเฉลี่ยของทั้งสองกลุ่มแตกต่างอย่างมีนัยสำคัญ ประเด็นที่สอง ผลชี้ให้เห็นการใช้กลยุทธ์ที่แตกต่างกัน โดยกลุ่มทดลองใช้การปรึกษากับเพื่อนร่วมกลุ่ม เครื่องมือทางเทคโนโลยี และพึ่งพาสมาชิกในกลุ่ม ในขณะที่กลุ่มควบคุมพึ่งพาครูผู้สอนและเพื่อน อีกทั้งยังใช้ภาษาแม่ ประเด็นที่สาม ถึงแม้ว่าผู้เรียนทั้งสองกลุ่มมีทัศนคติทางบวกต่อการใช้คลังข้อมูล กลุ่มควบคุมรายงานถึงปัญหาและความสับสน ซึ่งอาจส่งผลต่อการใช้คลังข้อมูลในอนาคต

สาขาวิชา ภาษาอังกฤษเป็นภาษานานาชาติ ลายมือชื่อนิสิต .....

ปีการศึกษา 2560 ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

## 5687817820 : MAJOR ENGLISH AS AN INTERNATIONAL LANGUAGE
KEYWORDS: CORPUS CONSULTATION, COOPERATIVE LEARNING, ADJECTIVE + PREPOSITION COLLOCATIONS, VOCABULARY ACQUISITION

SUPAPORN KULSITTHIBOON: THE USE OF A COOPERATIVE CORPUS CONSULTATION TO PROMOTE THE ACQUISITION OF ADJECTIVE + PREPOSITION COLLOCATIONS AMONG L1 THAI LEARNERS OF ENGLISH. ADVISOR: ASSOC. PROF. NATTAMA PONGPAIROJ, Ph.D., 223 pp.

The study was aimed at promoting the acquisition of adjective + preposition collocations of L1 Thai learners of English through a cooperative corpus consultation. The three objectives were to investigate the effects of a cooperative corpus consultation, explore learners' strategies in dealing with the corpus consultation and study learners' attitudes towards the approach. The study was conducted for one semester with 74 first year university students at Srinakharinwirot University. One group was assigned to be the experimental group working on the paper-based concordance handouts and hands-on concordance based tasks with a group of 3 - 4 members while the other represented the comparison group working on the same tasks individually. The research instruments included a pre-test and a post-test, a pre-project questionnaire, reflective journals, classroom observation schemes, a post-project questionnaire, a "can-do statement questionnaire and stimulated recall interviews. The findings can be summarized into three areas. Firstly, the average scores of the two groups were significantly different. Secondly, the results revealed different use of strategies. The experimental group employed group discussion, technological tools and positive interdependence while the control group relied on seeking help from the instructors and their peers and the use of their L1. Lastly, although both groups showed their positive attitudes, the control group reported problems and confusion which might have effects on future use of corpus consultation.



Field of Study: English as an International Language Student's Signature .....
Advisor's Signature .....

Academic Year: 2017

# ACKNOWLEDGEMENTS

Throughout this long academic journey, I have received tremendous support from a number of people. I would like to take this opportunity to express my appreciation to them.

First of all, I would like to express my sincere gratitude to my advisor, Assoc. Prof. Dr. Nattama Pongpairoj, for the continuous support of my Ph.D study and research, for her immense knowledge, patience, and motivation. Whenever I felt confused about this research study, meeting and consulting her increased my confidence and my motivation in continuing my work. I could not imagine having a better advisor and mentor for my Ph.D study. Also, I would like to thank my thesis committee: Assoc. Prof. Dr. Wirot Aroonmanakun, Asst. Prof. Dr. Raksangob Wijitsopon, and Ajarn Dr. Pramarn Subphadoongchone for their encouragement and suggestions. I would like to extend my appreciation to Asst. Prof. Dr. Passapong Sripicharn for his advice during various doctoral seminars and the oral defense and to Asst. Prof. Dr. Sudaporn Luksaneeyawin for her genuine interest in my research project on the first day we met in the interview room and her encouragement throughout this research project.

This project would not have been possible without my participants. Thank you my students for participating enthusiastically in my project and for believing in this learning process. Thank you one of my students, Wasupol Kuhood for helping me sorting out the data. I thank my EIL fellows: Nattharmma Thong-iam, Patricia Visser, Nopthira Jawaut, Naruethai Chantap, Sawaros Jaiprasong for the stimulating discussions, for moral support, and for all the fun we have had in the last five years. Lastly, I would like to thank my parents for giving birth to me at the first place and for giving opportunities and freedom to follow any dream I have had throughout my life and for that I dedicate any achievement I have attained in my life, including this dissertation to them.

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# CHAPTER I
# INTRODUCTION

## 1.1 Background of the study

The term "collocation" is first introduced by Firth (1957, p. 183) as *"*the company that words keep*".* Since then, collocations have increasingly received attention in the field of teaching and learning a second language (L2) (Bahns, 1993; Bahns & Eldaw, 1993; Nesselhauf, 2003, 2005). Among the first few pioneers, Brown (1974) states that learners benefit greatly from learning collocations such as gaining collocational knowledge, realizing language chunks used by native speakers in oral and written production, and improving their communicative competence. Pawley and Syder (1983) suggest that collocations promote the development of fluent communication and native-like word selection. Moreover, learning collocations can promote grammar learning. Hill (2000) and Lewis (2000a) share the same idea that learning lexical chunks which possess certain grammatical structures might help learners to acquire such grammatical structures. Wry (2002) also points out that the mastery of collocations enhances not only fluency, but also accuracy. Brashi (2009) advocates the important role of collocations since they lead to cohesion and coherence, later on leading to the mastery of L2.



Despite their advantages, previous studies have revealed that collocations are one of the difficult areas for second language learners (Bahns, 1993; Bahns & Eldaw, 1993; Hill, 2000; Phoocharoensil, 2011, 2014; Siyanova & Schmitt, 2008). Various studies have investigated learner collocation. Bahns and Eldaw (1993) discovered that the learners' productive knowledge of collocation did not progress at the same speed as their lexical knowledge, and that the collocational errors accounted for nearly 50 % of all errors. The analysis of native and non-native speakers' corpus showed that the non-native speakers produced fewer collocations (Howarth, 1996). Nesselhauf (2003) found that even the advanced learners in her study encountered problems of collocation mastery. Nesselhauf (2003) suggested that, to identify learners' collocation problems, collocational production should be analyzed because

collocation comprehension was not as problematic as production of collocation. On the contrary, Siyanova and Schmitt (2008) reported that the advanced learners' underlying intuitions were relatively poor because they did not perceive high frequent common collocations and even judge uncommon collocations as more common.

Concerning the causes of learning difficulties, a number of factors are reported. Yamashita and Jiang (2010) point to two unique features of collocations namely the flexibility of component words and its cross-linguistic nature. Firstly, the flexibility of component words means a component of collocations which is not strictly fixed. At times, component words change their collocates. The example that Yamashita and Jiang provide is that the word "heavy" collocates not only with "traffic", but also with "stone" and "smoker". However, they point out that there are other cases in which the flexibility is restricted. For example, the word "argument" can be found with the following collocates "strong" and "powerful", resulting in "strong argument" and "powerful argument", but the word "car" can only go with "powerful" as in "a powerful car". The flexibility leads to less salient multiword units, resulting in the lack of noticing of learners and production of unsuitable combination of words. Secondly, the cross-linguistic nature occurs when a collocation in one language has a counterpart in other languages. However, in terms of specific lexical items, there might be both similar lexical items and different component words. To illustrate this, the researchers compare the collocation of "hot tea", which occurs in English and in Japanese. What is dissimilar is that "strong tea" in English means "dark tea" in Japanese. The same thing happens between English and Chinese because "black tea" in English is called "red tea" in Chinese. Yamashita and Jiang (2010) conclude that due to this cross-linguistic relationship, a difference between collocational equivalents and non-equivalents needs to be explained because learners' first language can influence collocational learning both positively and negatively. This is because when collocations appear in both languages, positive transfer tends to occur. For example, the following collocations "in fact" and "in reality" have their counterpart in Thai. However, when L1 and L2 collocations do not match, unacceptable collocations which are assumed to be the results of negative transfer tend to arise. For instance, Phoocharoensil (2011, p. 111) reported that the Thai participants produced "I listen music all day" and "He always takes care me" due to

direct transfer from their L1 to L2 . In fact, the role of L1 is likely to impede learners' learning process as the previous studies have confirmed the negative effects of learners' first language on collocations (Bahns, 1993; Bahns & Eldaw, 1993; Phoocharoensil, 2011; Walker, 2011; Yumanee & Phoocharoensil, 2013). Moreover, there are other possible causes from learners themselves. Learners' learning strategies namely the use of synonym and analogy can also cause collocational errors (Phoocharoensil, 2011, 2014; Yumanee & Phoocharoensil, 2013). One possible cause is that the role of collocations in class is ignored as Bahns and Eldaw (1993) hypothesize that learners' collocational knowledge is not parallel to lexical knowledge partly because collocations are not highlighted in class and learners' attention is not drawn to collocations.

Acknowledging the significance of collocations and potential difficulties learners are faced with, scholars have two conflicting views about teaching and learning collocations. Nation (2001) believes that collocations can be learnt incidentally through implicit learning. On the other hand, other researchers (Bahns & Eldaw, 1993; Hill, 2000; Nesselhauf, 2003) propose that learners must be taught collocations explicitly. Bahns and Eldaw (1993) strongly recommend that learners should be taught collocations. Hill (2000) also proposes that collocation teaching should play an important part in teaching from lesson one. However, both views have been under attack. Siyanova and Schmitt (2008) assert that learners do not learn effectively new items in implicit instruction, and that they need multiple exposures. In fact, explicit instruction has limitations due to a large number of collocations. Besides, some traditional teaching techniques might not yield productive results. Reviewing collocation teaching techniques from previous studies, Rahimi and Momeni (2012) report little chance of vocabulary retention from the following techniques: physical demonstration, verbal explanation, provision of synonyms and antonyms, translation, using visual aids, asking learners to check the meaning in the dictionary, exemplification and presenting a word in the context.

Recently, considerable attention has been paid to potential applications of electronic corpora in language teaching and learning (Boulton, 2010). One of the corpus-based approaches in classroom derives from Johns's work (1991) on data-driven learning (DDL). In data driven learning, learners are not taught language rules,

but they have opportunities to explore corpora to investigate patterns as well as vocabulary by receiving sufficient authentic linguistic samples, observing and, classifying the data derived from the search process before testing or generalizing a language hypothesis. Through DDL, authentic data enables learners to get used to target language communication and assist them to acquire the language use successfully. As stated by Johns (1991), taking a role of researchers, learners work on the samples derived from the searching process. Learners gradually develop their ability to see patterning through the regularities and consistencies encountered and later are able to form generalizations for such pattern. This has changed the focus from deductive to inductive learning and the roles of both learners and teachers who now act as classroom researchers and facilitators, respectively.

The introduction of digital computers and corpus linguistics has brought new trends into the teaching of collocations (Koosha & Jafarpour, 2006). With digital database from corpora and one useful program so called concordancing, it is possible for learners to explore collocations on their own. Once learners identify and type a word into a search box, a concordancer will provide a list of sentences or portions of sentences containing that word, called the Key-Word-In Context (KWIC), where the search word is in the middle of the computer screen surrounded by contexts. Learners can observe collocations or words most often found together with the key word in sample sentences of real language. Boulton (2010, p. 3) states that "Corpora can provide information on usage in context, especially in the form of concordances, as well as on frequency, distribution, collocation, and so on". According to Hunston (2002), corpora can be a good source for collocation teaching and learning because collocations can be observed informally but more reliably and statistically through corpus data. Teaching collocations through corpus data can highlight not only patterns, but also association between meaning and patterns. Nesselhauf (2005) also recommends that exercises be based on concordance lines for collocation learning and teaching.



Previous studies have pointed out the benefits of corpora on collocations (Koosha & Jafarpour, 2006; Sun & Wang, 2003; Yoon, 2008). Li (2017) mentions that benefits from corpus application can be access to authentic language, promotion of learner autonomy in concordance analysis, and opportunities for learners to

investigate how language really behaves and to increase their awareness of natural collocational use. Koosha and Jafarpour (2006) discovered the positive effects of Data Driven Learning on learning collocation of prepositions. Yoon (2008) found that corpus consultation could raise language awareness, the importance of common usage and collocation. Liu (2010) states that corpus-based cognitive analysis can promote not only better collocational understanding, but also productive use of collocations as compared to the noticing/memorization approach. Liu explains that there are too many collocations for learners to remember; therefore, the cognitive process during corpus consultation tends to be more helpful. What is more, the process of corpus exploration can raise collocational awareness which promotes better word retention.

However, corpus consultation should not be considered as a magical tool (Sripicharn, 2003). Various studies have disclosed the learners' problems while consulting the corpora (O'Sullivan & Chambers, 2006; Varley, 2009). Sripicharn (2003) pointed out one important difficulty which was learning cultures of learners. In his study, the concordance group learners had very little exposure to inductive learning, which was vital in corpus consultation. Liu and Jiang (2009) reported the following problems: sorting a large amount of data, the confusion from irrelevant examples, and low levels of motivation to use corpus. There are also other problems, such as a long period of searching time, confusion resulting from an excessive number of concordance lines, and the unfamiliarity with the inductive learning and technological and research skills. These mentioned problems tend to affect learners' motivation.



In fact, findings from previous studies have suggested some solutions for successful corpus implementation as follows. To begin with, training and practice in corpus use is suggested (Tasanameelarp & Laohawiriyanon, 2010; Yoon & Hirvela, 2004; Yoon & Jo, 2014). Regarding the excessive number of concordance lines which might lead to confusion and demotivation, Gilmore (2009) recommended that teachers or researchers facilitate their materials by editing concordance lines. Lastly, some studies (Gavioli & Aston, 2001; O'Sullivan, 2007) have proposed group work as an alternative to corpus consultation. Although the focus of their work was not on the effects of group work, Gavioli and Aston (2001) observed that the group work could facilitate co-construction of the learning process of corpus consultation. They

also discovered that the learners tended to have different ways in observing things and drawing conclusions from analyzing concordance lines. For instance, a group of learners worked on the word “food” and its Italian counterpart “cibo”. Certain learners observed and pointed out the higher number of the concordance lines of the word “food” as compared with the number of concordance lines of the word “cibo”. Other learners concluded that “cibo” was frequently found with negatively connotated expressions such as “mancanza di cibo” (a lack of food) and “il cibo scarseggia” (food is short). Gavioli and Aston (2001) also hypothesized that comparing the learners’ analyses would enable more comprehensive or generalizable interpretations. In addition, Long and Porter (1985) state that the use of group work in classroom settings has received attention from second language acquisition research because of the following five rationales: an increase in language practice opportunities, development of learner talk, individualized instruction, positive affective environment in the classroom, and increasing learner motivation.

Among various group-based instructional methods, cooperative learning and collaborative learning might be used interchangeably. Both terms are influenced by Vygotskian’s theory (1978) in that children are able to develop their knowledge, skills, ideas, attitudes, and values when they interact with others. Within the area so called “zone of proximal development”, children who face unsolved problems alone might be capable of solving problems due to adult guidance and more capable peers’ support and cooperation. Teachers’ roles are facilitators who provide any forms of assistance. Despite some similarities, Oxford (1997) explains that these two concepts are different in the following ways. Firstly, the purpose of cooperative learning is to increase cognitive and social skills while that of collaborative learning is to acculturate learners into knowledge communities. Secondly, the structure of cooperative learning is higher than that of collaborative learning. In addition, the relationship of learners in cooperative learning is equal, and teachers are facilitators. On the other hand, learners in collaborative learning engage with more capable people such as their peers and teachers who provide them advice and support. Oxford concludes that cooperative learning is considered more structured and provides details for teachers about classroom techniques as well as directions for learners about how to work together in a group whereas collaborative learning is philosophically

orientated with a goal of changing learners' ideas and behaviors into an immediate community.

According to Johnson, Johnson, and Smith (1998), cooperative learning takes place when learners work together in a small cooperative group to accomplish shared learning goals. Each learner's learning gold is achieved if their peers achieve their goals. Various scholars affirm that cooperative learning is a beneficial approach in second/foreign language teaching (Kagan, 1995; Long & Porter, 1985). Johnson and Johnson (2009) state that cooperative learning has steadily progressed and has been widely used in various educational settings in various subject areas and from preschool through graduate school levels. Cooperative language learning has received attention in language learning classrooms for various reasons. To begin with, Kagan (1995) states that cooperative language learning can be an effective instructional approach in promoting the cognitive and linguistic development of learners of English as a Second Language (ESL) or English as a Foreign Language (EFL) because cooperative learning provides sufficient opportunities for meaningful input and output in a highly interactive and supportive environment. Johnson, Johnson, and Smith (2014) make a point that cooperative learning provides some opportunities which will not be seen when learners learn individually and competitively. When working cooperatively in a group, learners engage in discussions where they construct and extend conceptual understanding of what is being learned and develop shared mental models of complex phenomena. During cooperative learning, not only does each member have a role in a group to perform, but also learners can observe behavioral models from their team members such as learning strategies as well as attitudes and values (such as the need for continuous improvement). Moreover, cooperative learning can create an effective climate for language learning and teaching (Zhang, 2010). Zhang (2010) explains that cooperative learning provides learners more time to think and feedback from their group members, leading to more active participation and lower level of anxiety and creating relaxing learning atmospheres. What Zhang adds is that more participation tends to increase learners' self-confidence and self-esteem. Lastly, cooperative learning is said to increase L2 learners' motivation and psychosocial adjustment (Dörnyei, 1997).

**1.2 Research context of the study**

Like other language learners, Thai learners of English as a foreign language seem to face problems about the mastery of collocation regardless the learners' language proficiency. Previous studies conducted in Thai contexts have revealed various collocational errors produced by L1 Thai learners (Boonyasaquan, 2009a, 2009b; Mallikamas & Pongpairoj, 2005; Mongkolchai, 2008; Phoocharoensil, 2014; Yumanee & Phoocharoensil, 2013). The causes of miscollocations are as follows: interference from learners' first language, limited knowledge of collocations, the use of synonymy, the creative invention, and the strategy of analogies. Moreover, insufficient collocational knowledge of Thai learners seems to be affected by another cause, transfer of training. As Selinker (1972) has claimed, what happens inside the learning classroom has a huge effect on learners' comprehension and production. In the Thai setting, the focus of teaching new words is on definitions and the usage (Mallikamas & Pongpairoj, 2005). Boonyasaquan (2009a, 2009b) also points out that Thai education and Thai teachers highlight the significance of grammar and neglect the important role of vocabulary as well as collocations. Another cause of miscollocations results from low knowledge of grammatical collocations as Yumanee and Phoocharoensil (2013) explain that L1 Thai learners are unaware of the compulsory use of the prepositions with the main words or the preceding words, producing numerous grammatical collocations.

Previous studies in Thai contexts have paid more attention to lexical collocations than to grammatical ones. According to Yunus and Awab (2012), ESL learners are less likely to be familiar with grammatical collocations as compared to lexical collocations and the combinations or patterns convey different meanings. Mallikamas and Pongpairoj (2005) discovered that first year university learners performed the worst in lexical collocations in the learners' productive task. Another study by Boonyasaquan (2009a) pointed out that adjective + noun collocations were ranked the biggest problem. However, in the field of error analysis, errors involving prepositions and their collocation patterns are found in the list of common types of errors among English language learners. Studies by Pongpairoj (2002), Hemchua and Schmitt (2006) and Watcharapunyawong and Usaha (2013) conducted with Thai

undergraduate learners, reveal that L1 Thai learners struggle to master preposition usage and make a great number of errors involving prepositions, leading this type of errors to the top five of the most frequent errors. Lekawatana (1974) pointed out that there are a greater number of English prepositions than, Thai and English prepositions have more linguistic functions. Moreover, the previous studies (Yuan, 2014; Yumanee & Phoocharoensil, 2013) disclose that learners' L1 interference is one of the major factors of collocation errors. Learners receive limited input; hence relying on their L1 and choosing English prepositions whose meanings are similar to those of their L1. Lastly, according to Flowerdew (1999), learners usually try to learn the meaning and use of prepositions separately without paying sufficient attention to their collocational properties. In fact, the recent findings from Phoocharoensil (2011), Alotaibi and Alotaibi (2015) and Alsulayyi (2015) have drawn attention to grammatical collocations since the findings revealed that grammatical collocations could also cause learners problems. Among grammatical collocational patterns, those patterns containing prepositions were problematic the most, accounting for approximately 42% of all grammatical collocational errors (Phoocharoensil, 2011). The participants in these studies used their first language as the most frequent learning strategy, resulting in preposition omission, preposition insertion, and incorrect choice of prepositions.



**1.3 Statement of the problem**

Few studies have paid attention to implementing a cooperative corpus consultation. In fact, some previous studies assigned the learners to work in pair (Yoon & Hirvela, 2004). In the study of Tasanameelarp and Laohawiriyanon (2010), the learners turned to ask their peer for guidance during the consultation. Yet, the effects of a cooperative corpus consultation have been less investigated. Moreover, to the best of my knowledge, no studies have been conducted to investigate the effects of a cooperative corpus consultation in assisting collocation teaching in Thai contexts, particularly the pattern of adjective + preposition collocations. As mentioned earlier, language learners have been encouraged to individually consult corpora and deal with various problems. Cooperative learning will create a group community requiring the

target learners to consult a corpus in a group. Cooperative learning will provide learners with the exposure to corpus consultation and the opportunities to work with their peers. As the group completes the tasks, they need to interact with one another in their group. Their interaction is important as it functions as peer scaffolding. According to Johnson et al. (2014), interaction and discussion during cooperative learning allow and encourage learners to construct conceptual understanding of what is being learnt and provide feedback as well as support for one another. Moreover, the training and materials from the teacher will provide corpus consultation guidelines, which can be seen as another form of scaffolding.

The pattern of adjective + preposition collocations has been underexplored by language researchers. Yet, the pattern is worth investigating for the following reasons. Adjective + preposition collocations tend to frequently appear in both spoken and written texts. Moreover, L1 Thai learners' attention has rarely been drawn to collocations in general, particularly potential difficulties of adjective + preposition collocations. As confirmed by Boonyasaquan (2009a, 2009b), grammar has received more significance, but vocabulary as well as collocations has been neglected. In addition, this particular pattern of collocations consists of challenging combinations, namely adjectives and prepositions. Chaiyaphat (2013) points out collocations that are related to adjectives could be problematic to Thai learners of English. Jabbour-Lagocki (1990) affirms that prepositions cause problems as they are frequently found to combine strongly with other word classes such as nouns, verbs, and adjectives to form collocations of prepositions. Besides, traditional grammar textbooks tend not to pay attention to collocations of prepositions (Schmied, 2003). Lastly, the adjective + preposition collocation pattern seems challenging to L1 Thai learners due to arbitrary commutability of prepositional collocates as well as noun collocates. For instance, various adjectives can have more than one prepositional collocate without the change of meaning such as "annoyed at", "annoyed about" and "annoyed by" whereas other adjectives can have various collocates where meaning vary according to the change of prepositions such as "tired of" and "tired from". The collocation "tired of" means "being bored" or "being annoyed" and it always occurs before the words "people", "life" and "war". On the other hand, the collocation "tired from" suggests that tiredness results from an activity and occurs frequently with

"day", "trip" and "journey". According to Hunston (2002), corpus and concordance lines provide substantial amount of data for learners to observe patterns and association between meaning and patterns.

### 1.4 Objectives of the study

The objectives of this study were as follows.

1. To investigate the effects of a cooperative corpus consultation on the acquisition of adjective + preposition collocations among L1 Thai learners of English.
2. To examine strategies L2 learners use during the cooperative corpus consultation.
3. To study L2 learners' attitudes toward a cooperative corpus consultation.

### 1.5 Statement of hypothesis

In the present study, three hypotheses were formulated as follows.

1. A cooperative corpus consultation has a better effect on the acquisition of adjective + preposition collocations than corpus-based instruction.
2. L2 learners employ various strategies during a cooperative corpus consultation.
3. L2 learners have positive attitudes towards cooperative corpus use.



### 1.6 Research questions

The research questions of this study were as follows.

1. What are the effects of a cooperative corpus consultation on the acquisition of adjective + preposition collocations?
2. What are the strategies the learners use during the cooperative corpus consultation?
3. What are learners' attitudes toward a cooperative corpus consultation?

### 1.7 Significance of this study

The study is significant for the following reasons.

First, studies on the acquisition of grammatical collocations, in particular the adjective + preposition collocations, are very rare. Previous studies have paid more attention to lexical collocations. This study will contribute to the pool of research to create a more complete account of acquisition of the adjective + preposition collocations.

Second, the findings of the study will contribute to the literature on corpus-based research. The findings will expand insights in using corpus consultation and the findings will shed some light on problems derived from individual corpus consultation such as categorization of a large amount of data, confusion from irrelevant examples, data observation and interpretation.

Lastly, the study will also have pedagogical implications as it could provide an alternative method in implementing corpus-based approach in teaching and learning in general collocation teaching in particular. The study will provide guidelines for teachers whether to use corpus-based group activities with learners, and for curriculum designers considering incorporating such materials.

### 1.8 Scope of the study



The present study is in the area of corpus-based learning approaches. The scope of the study consists of the following points.

1. The population of this study is first year Thai undergraduate learners studying at the Faculty of Humanities, Srinakharinwirot University in the 2016 academic year, Thailand, Ongkarak campus.

2. The focus of collocation learning is on one particular grammatical collocation pattern, adjective + preposition collocations. The target collocational pattern was classified into two patterns. The first pattern is a combination of an adjective and a prepositional collocate where the other prepositional collocate does not affect meanings such as “annoyed at” and “annoyed by”. On the other hand, the second pattern is a combination of one adjective and one preposition where the substitute of other preposition affects the meanings such as “clear of” and “clear on".

## 1.9 Definitions of terms

**1.9.1 A cooperative corpus consultation**: In this study, a cooperative corpus consultation means learning activities where a group of three to four L1 Thai learners consult a corpus and concordance lines as their resources in order to observe language patterns.

**1.9.2 Collocations:** In this study, collocations are lexical phenomenon where two words are frequently used in a language with random commutability.

**1.9.3 Adjective + preposition collocations**: The adjective + preposition collocation is a combination of one adjective and one preposition which is frequently used together with random commutability.

**1.9.4 Acquisition:** The term "acquisition" in the field of language teaching and learning refers to the process in which people develop their proficiency of another language. In this study, it refers to Thai learners' acquisition of the English language.

**1.9.5 Corpus-based learning:** Corpus-based learning is a learning method concerned with a corpus and concordance lines in the forms of both paper-based handouts and hands-on activities for learners to learn adjective + preposition collocations by doing language analysis either on their own or in a cooperative learning group. Teachers are facilitators to provide corpus-based materials and linguistic support as well as discussions at the end of corpus-based learning with learners to share their findings.

**1.9.6 L1 Thai learners of English**: L1 Thai learners of English in this study were the first year Thai undergraduate learners who were studying at Srinakharinwirot University in Bangkok in the academic year 2016.

# CHAPTER II
# LITERATURE REVIEW

This study aims to investigate the effectiveness of cooperative corpus-based activities on the acquisition of adjective + preposition collocations. It is important to review related literature relating to theories on second language acquisition, collocations, corpus and previous studies to provide sufficient background information and obtain a conceptual framework of this study. Related theories covering second language acquisition and cooperative learning are outlined in 2.1. Then, some aspects of collocations including definitions, classifications, significance and collocation instruction are provided in 2.2. Next, some aspects of corpus covering definitions and significance of a corpus are described in 2.3. Lastly, relevant studies on collocations, corpus consultation, and a cooperative corpus consultation are described in 2.4.

## 2.1 Related theories

### 2.1.1 Related theories on second language acquisition

#### 2.1.1.1 First language transfer (L1transfer)

In the field of second language acquisition (SLA), it is widely believed that learners' first language (L1) has an influential role in learners' second language (L2) (Ellis, 1985; Larsen-Freeman & Long, 1991). From 1940s to 1960s, language learning was seen as habit formation in which a child copies any utterance he or she hears and receives positive reinforcement if the production is correct. However, if the imitation is not correct, the child puts his/her efforts in correcting his/her own errors, which leads to the master of their first language (Ellis, 1985). SLA is said to happen in the same way. Learners' L1 could also lead to language transfer.

According to Ellis (1994, p. 28), language transfer refers to "the incorporation of features of the L1 into the knowledge system of the L2 which the learner is trying to build" . First language transfer is said to have a crucial role in second language acquisition since forms and meanings of learners' L1 could be receptively and productively transferred to the foreign languages and cultures, leading to positive and

negative results. Positive transfer happens when L1and L2 habits are similar, so this facilitates language production while negative transfer refers to previous learning, or L1 impedes L2 learning, resulting in errors. The role of L1 hence leads to either success or failure. One of the areas that language transfer has an impact on is learning of L2 collocations (Nesselhauf, 2003, 2005). As explained by Ellis (1994), if targeted collocations are similar to those in L1, learning could be facilitated through positive transfer whereas if they are dissimilar, learning problems take place, resulting in errors from negative transfer. For example, the expression "a dark horse" can be easily understood by Thai learners since there is a Thai equivalent. However, the same expression could be produced based on L1 transfer by Taiwanese learners as "a black horse".

However, the role of L1 transfer in language acquisition has been investigated and questioned. Transfer does not occur when there are differences between learners' L1 and L2, and errors learners produce do not result from language transfer (Ellis, 1994). Despite the decreasing role in language acquisition, language transfer is seen as a fundamental SLA process (Murphy, 2003). Selinker (1972) views language transfer as one of the five processes to language learning. Ellis (1994) also points out that transfer is considered as not only the learning process, but also a helping tool in communication. Language transfer involved in the learning process may be used by learners to notice features in input, and then learners tend to compare those new features with those in their mental lexicon before integrating new features. On the other hand, language transfer used in communication involves code mixing and code switching. According to Ellis (1994), it is relatively complicated to distinguish between the process of L2 transfer and the use of L1 as a communication tool.



**2.1.1.2 Error analysis**

Error Analysis (EA) is defined by Brown (1980) as the process in observing, analyzing, and classifying the deviations of the rules of the second language and then to reveal the systems operated by learners. To prevent confusion between mistakes and errors, Corder (1983) explains the difference between the two as follows. Mistakes refer to performance errors in both native and language learners' production. Native speakers are likely to recognize and correct them. Errors are deviances from

target languages due to inability to master rules, and they are likely to show their current stages of L2 development. It is interesting to note L2 learners are not able to self-correct. Corder (1983) points out that mistakes result from performance; hence, they tend to be unsystematic due to various unexpected causes such as tiredness and memory lapses. On the other hand, errors are results of competence , and they are more systematic.

In second language acquisition, errors are seen as evidence showing the process of acquiring languages. While learning, learners take part in a process of discovering the language, and then they form hypotheses based on language input before testing the hypotheses in language production. According to Corder (1983), errors represent the difference between the transitional competence of learners and the target language. Through a systematic study of learners' errors, it is believed that EA will reveal learners' difficulties. The process of analyzing learner errors includes the following steps (Ellis, 1994): collecting a sample of learner language, identifying errors, describing errors, and explaining errors. Richards (1983) classifies errors as follows. Firstly, interlingual errors are those errors influenced by learners' first languages. Concerning intralingual errors, they are those errors that occur in the structure of English. When learners are faced with the complexity of the structure, regardless their language background, the same errors are likely to occur. Finally, developmental errors reveal what strategies learners apply to acquire the language. Learners who produce developmental errors do not rely on their first language and make false hypotheses as a result of limited language exposure (Richards, 1983).



Richards (1983) provides a list of types and causes of intralingual and developmental errors as follows. Firstly, overgeneralization refers to an unusual structure created by learners applying other structures in the target language to reduce their linguistic burden. For example "She will talks" or "It is happens". Secondly, ignorance of rule restrictions happens when existing linguistic constraints are disregarded. Take the following sentence as an example. Learners who produce "The woman who I love her" break the limitation on using "who" as a relative pronoun by adding "her". Richards raises some possible causes. Learners' transfer is a possible one because learners might apply an acquired rule in a new situation. Another one is analogy which leads to wrong use of prepositions. When learners have a particular

prepositional problem with one verb, they might substitute the same preposition with a similar verb by applying analogy. For example, learners who have seen or heard the following sentence “He said to me” might use the rule of analogy and create “He asked to me” (Richards, 1983, p. 201). Thirdly, incomplete applications of rules reveal instances of structures whose deviant signifies the level of improvement of the rules necessary to create satisfactory utterances. A good example is applying rules of forming questions which involves a series of rules such as transforming affirmative sentences and adding question words. Learners may not be able to apply all necessary rules. Lastly, an error deriving from false concepts hypothesized is classified as a developmental error, which discloses misunderstanding of differences in the target language. For example, the form “is” signifies the present tense, therefore we always come across “He is goes to school”. Richards concludes that understanding of types and causes of these errors will enable teachers to assess teaching materials.

However, EA has been under attack for the following points. Schachter and Celce-Murcia (1983) state that focusing only on errors, EA theorists ignore the significance of non-errors. This might mislead researchers. In addition, the classification of errors seems problematic since it depends greatly upon individual analysts’ judgment. Another interesting point in their work is the areas of difficulty of errors appear to derive from error classification and frequency of errors. To some extent, the mentioned factors lead to production of errors. However, there is a possibility that some errors are not the result of error classification and frequency of errors since there is a possibility of avoidance from using some particular target structure. For example, Schachter (1983) conducted a study and discovered that Chinese and Japanese learners made fewer errors on English relative clauses than Persian and Arab fellows. After the observation, this English linguistic aspect turned out to be too different when compared with the relative clause in Chinese and Japanese hence difficult for the learners to produce, so they avoided using it, leading to the fewer errors. In sum, EA fails to provide explanation about learner-internal errors and it does not enable researchers to comprehend learners’ communicative competence.

**2.1.1.3 Interlanguage**

The term “interlanguage” (IL) derives from Selinker (1972). IL is made up of two words: “inter and language”, which means the language that is in between and implies interlangauge is neither learners’ first language nor target language. IL is explained as a “continuum between the L1 and L2 along which all learners traverse” (Larsen-Freeman & Long, 1991, p. 60). Interlanguage sometimes is known as “idiosyncratic dialects and transitional competence” by Corder (1981). Although IL theorists believe that the language created by second language learners is systematic, IL is said to be a product of a set of rules that differs from both L1 and L2.

Ellis (1997, p. 33) adds that IL has “a unique linguistic system” and summarizes the characteristics of IL as follows. IL is systematic since learners who employ a variety of learning strategies create an arrangement of mental linguistic rules. IL shows a dynamic aspect, for it changes gradually according to the increase of complexity of L2 knowledge. Lastly, IL is permeable because IL could be affected by both factors: outside (through the input) and inside (such as omission and overgeneralization).

Selinker (1972) explains that interlanguage is the product of five central processes showing how learners internalize the L2 system. The five processes cover the following components: language transfer, transfer of training, strategies of L2 learning, strategies of L2 communication and overgeneralization.



Firstly, language transfer is the first and most obvious process that underlies interlanuage. This can be explained that when learning other languages, learners unavoidably transfer some rules and subsystems of learners’ first language to the interlanguage. As Lado (1957, p. 2) states “individuals tend to transfer the forms and meanings, and the distribution of forms and meanings of their native language and culture to the foreign language and culture- both productively when attempting to speak the language and to act in the culture, and receptively when attempting to grasp and understand the language and the culture as practiced by natives” . During their learning process, they use their mother tongue to create their own language system. Take the following sentences as examples: “Today was really tired” and “In my school has a swimming pool”. Thai learners tend to create these sentences since the

subject of sentences can be omitted in Thai, so Thai learners directly translate Thai into English.

Secondly, transfer of training is the process showing some interlanguage elements resulting from learning. In other words, interlanguage is the result of teachers and teaching materials. It could be said that previous learning experience greatly influences the production and comprehension of L2 in particular language production. For example, a number of Thai learners have difficulties pronouncing /h/ sound because of mispronunciation from their primary school teachers.

Thirdly, interlanguage is believed to result from strategies of L2 learning that learners apply in order to reduce the target language to a simpler system. Learners have their own regular learning styles and strategies, and these styles and strategies are used to simplify the target language. For example, learners who narrate a past story might use a simple present tense.

Fourthly, interlanguage may result from strategies of L2 communication that learners apply in their attempt to communicate when they focus on getting the meaning across. Lastly, overgeneralizations of L2 rules are a phenomenon where learners overgeneralize some specific rules and features of the target language. It can be said that learning languages involves various rules and exceptions, and this tend to have effects on interlanguage. For example, to use a past simple in English, learners need to apply the rule of –ed ending. However, there are various irregular verbs that are exceptions. Therefore, a number of Thai learners may say "I goed home" because they overgeneralize the past simple rule by adding –ed at the end of this irregular verb to express the past form.



Lastly, the phenomenon of fossilization is likely to take place in second language acquisition. Fossilization means learners cease to make any visible progress while learning. According to Selinker (1972), fossilization can be linguistic items, rules and subsystems maintained in interlanguage by learners of any native language regardless of various backgrounds such as age and the amount of instruction. What Ellis (1985) adds is that fossilized elements can be errors or correct target forms. Reaching the phase of development in which feature 'X" in TL is dissimilar to TL will lead to errors. If feature "X" in TL is parallel to TL, the fossilization of the correct form will happen.

Ellis (1994) summarizes the causes of fossilization from the previous studies as follows. There are two possible causes of fossilization. The first factor is an internal or psycholinguistic factor, and the second is either called an external or sociolinguistic factor. The internal factors are learners' age and lack of motivation. Despite some controversies relating to the role of age in SLA, this factor seems to support the Critical Period Hypothesis in particular why young learners are able to acquire a native accent. The other factor is related to learners' desire to acculturate. According to Schumann (1986), acculturation drives learners to interact with target language speakers, leading to negotiation of appropriate input which operates the immediate cause of language acquisition. Provided that learners lose desire to acculturate, they may cease interaction, and this can lead to the lack of L2 exposure and later on fossilization.

The external factors cover the following three aspects: communicative pressure, lack of learning opportunities and feedback learners receive from their use of L2. The first one is explained that focusing on accuracy learners whose linguistic competence is limited may find themselves consistently pressured, ceasing to develop themselves. Secondly, shortage of learning opportunities refers to lack opportunities for input reception and use of L2. Lastly, the nature of feedback namely positive and negative has effects on learners' use of L2. It is explained that learners receive positive cognitive feedback on inaccurate but successful communication, resulting in fossilization. On the contrary, negative cognitive feedback tends to promote modified attempts in the target language, helping the avoidance of fossilization.



Although interlanguage theory has shaped the development of SLA research, there have been criticisms of this approach. Ellis (1994) mentions that the list of the five processes is not apparent as there is no explanation why "language transfer ", and "overgeneralization" are separated from "learning strategies". Moreover, Saville-Troike (2012) points out that it is problematic to identify fossilization. Whether or not learners who retain their mother tongue accent should be considered "fossilized" in L2 development despite fluent production.

**2.1.1.4 Input hypothesis**

The Input Hypothesis of Krashen consists of five basic hypotheses, and Krashen (1985) claims that the Input Hypothesis is the key issue of overall theory of second language acquisition.

To begin with, the Acquisition-Learning Hypothesis states that there are two ways for adults to learn a second language: language acquisition and language learning. Krashen (1985) explains that the former is similar to child first language acquisition. Language acquisition happens subconsciously and passively through implicit and natural settings where learners are engaged in meaningful communication. On the other hand, learning happens actively and consciously through explicit and formal learning settings. Learning can be referred to as explicit knowledge which means learners are able to talk about rules and aware of the rules. However, language acquisition differs from learning, for we are not aware of the rules we use during communication. Therefore, language acquisition is called implicit knowledge. It is believed that only children acquire where adults can only learn. The hypothesis rejects the notion by claiming that adults are able to acquire. Their ability to "pick up" does not disappear at puberty.

Secondly, the Natural Order Hypothesis believes that the acquisition of grammatical structures occurs in an expected order. Certain grammatical structures tend to be acquired by acquirers before other grammatical structures. Although the agreement among individual acquirers is not certain, there are significant similarities. Krashen and Terrell (1983) state that there is the possibility that structures may be acquired in groups or several structures at the same time. For example, learners are likely to acquire the –ing form (taking) before acquiring the plural - s. Krashen and Terrell (1983) point out that it is not surprising to see some learners acquire the two morphemes in the opposite order or some learners acquire both morphemes at the same time.

The Natural Order Hypothesis can be applied to both first language acquisition and second language acquisition despite some differences. According to Krashen (2003), there are three facts of the natural order as follows. First, the order is not based on language simplicity or complexity. For example, the rule about their person singular might look simple, but it is acquired later. Second, the order cannot be

changed regardless intentional instruction. Lastly, teaching grammatical structures according to the natural order is not a solution to teaching.

The third hypothesis, the Monitor Hypothesis, believes that conscious learning has very little effects on learners' performance. This is because utterances produced in a second language result from the acquired system. Conscious learning is employed only later to make changes in our utterances, so conscious learning has the function of "monitor" or "editor". Monitor can happen before the production by applying the learned rules or after the production in the form of self-correction. It can be said that the learned systems monitor the output of the acquired system. To use the Monitor successfully, acquirers have to meet three conditions. To begin with, learners need to have sufficient time to apply the Monitor since some rules, such as subjunctive or subject-verb agreement, take performers longer time to monitor, and that will impede conversation. Secondly, performers need to be thinking of correctness to apply the Monitor. Some performers might focus only on what they would like to say without focusing on how to say it correctly. Last but not least, performers have to know the rule.

Fourthly, the Input Hypothesis explains that second language learners acquire language by understanding comprehensible input (*i+1)*, which contains a structure a slightly beyond learners' current understanding. It can be explained that **"**i**"** refers to the acquirer's current level of competence, and i+1 is the stage that follows **"**i**"** along the natural order. For example, if acquirers' next target structure is a third person singular morpheme, they will hear or read messages containing the structure, and acquirers will acquire and understand this structure. Krashen and Terrell (1983) further explain that through context and extra linguistic information, acquirers understand the input they have not acquired before. The example of context is seen from conversations between caretakers and children. Caretakers' speech is communicative, simple and changing, so children understand what they want to say. Like caretakers' speech, teachers' talk in the second language classroom is possibly tuned to the level of acquirers.

Lastly, the Affective Filter Hypothesis assumes that non-linguistic variables such as motivation, self-confidence, and anxiety can affect language acquisition. According to Krashen and Terrell (1983), non-linguistic variables can facilitate or

impede acquisition, not learning. It explains why some learners who receive comprehensible input do not reach a native-like competence since high affective filters impede the input from an acquisition device whereas learners with right attitudes tend to get more input and interact with speakers of the target language. Therefore, they tend to be more open and receptive to the input. It is suggested that the importance should not only be on supplying optimal input, but also on promotion of low filter.

Krahen's Input Hypothesis has been under attack. Mainly, the Input Hypothesis is criticized for not providing a clear explanation and supporting evidence. To start with, McLaughlin (1987) states that Krashen does not provide detailed explanation about "conscious' and 'subconscious" and "comprehensible input". Moreover, the argument that learning is unlikely to become acquisition lacks supporting evidence. Next, Krashen's concept of rules in the Monitor Hypothesis is problematic. McLaughlin (1987) points out that Krashen fails to explain why some rules are considered overused rules, and others are seen as underused rules. In fact, the reason might be the difference in ability to apply specific grammatical rules. Lastly, why the Affective Filter has effects on only adults' incomplete mastery of second language acquisition is unanswered.

Concerning the issue of measurement of language acquisition, according to Gass and Selinker (2008), there are three possible definitions of acquisition. The first one is the first presence of correct forms while the second is a certain percentage of correct forms. Lastly, the first of the three consecutive two-week sample in which the morpheme is supplied in over 90 % of obligatory contexts. The term obligatory contexts can be defined as situations or conditions designed for a chosen kind of language test requiring language learners without the avoidance strategy to supply the linguistic form in the particular phrase. According to Macaro (2010), this is the way used to determining whether learners have acquired the linguistic form.



#### 2.1.1.5 Vocabulary acquisition

##### 2.1.1.5.1 Vocabulary learning approaches

Within the field of vocabulary acquisition, there are three main approaches in enhancing vocabulary in second or foreign language: incidental vocabulary learning,

explicit learning and independent strategy development (Yoshii & Flaitz, 2002). Each approach is explained in the next section.

To start with, incidental learning is defined as "learning of vocabulary as the by-product of any activity not explicitly geared to vocabulary learning" (Hulstijn, 2001). Coady (1997b) explains that incidental learning is similar to natural process of L1 acquisition. Learning takes place when learners are exposed to language use in several contexts, and learners pay attention to understanding rather than language. Such repeated exposure is believed to promote vocabulary acquisition. Coady (1997a) believes that learning success happens through authentic language and rich content as it is both enjoyable and comprehensible to learners. Also, learners should read a large number of texts. To promote incidental learning, teachers could apply extensive reading by providing authentic texts and allowing learners to choose options to read on their own.

Incidental vocabulary learning can be of great help. Huckin and Coady (1999) point out that it can promote word use and meanings due to contextualization. Besides, vocabulary acquisition and reading tend to be achieved at the same time. More importantly, incidental learning is likely to promote learners' autonomy since they are allowed to take control on their choices of readings. Nation (2001) also lists three benefits of incidental learning as follows. It allows learners to take control of their own learning pace. Incidental learning can facilitate various interests and motivate learners to read, and it provides learning environment outside classroom settings.



However, incidental vocabulary learning might not yield its benefits for the following reasons. Hulstijn, Hollander, and Greidanus (1996) summarize its drawbacks as follows. Learners might fail to notice unknown words, yet they believe they know them or even ignore them. Besides, learners may not be able to connect forms and meaning of unknown vocabulary due to over-redundancy of contexts. In addition, inferring word meaning in incidental reading can be an error-prone process since low proficient learners might find this approach confusing and make a wrong guess. Moreover, learning from contexts will be successful only if the occurrences of target words are incidentally frequent enough.

The second approach is explicit learning. According to Decarrico (2001, p. 2), "explicit vocabulary learning learners engage in activities that focus attention on vocabulary". Hulstijn (2006, p. 706) explains that explicit learning is "deliberative process of concept formation and concept linking" and, such process happens when learners are taught concepts and rules by their teachers or textbooks. In fact, such process might take place when learners operate in a self-initiated searching mode, developing concepts and rules on their own. Hulstijn explains that a certain amount of consciousness must be involved in explicit learning.

Nation (2001) affirms the importance of explicit vocabulary teaching and learning which can enhance learners' knowledge of particular words. As a result, they are able to notice the words when seeing then again in reading activities. The first reason for explicit learning is that non-native learners are likely to have a problem when beginning to learn English due to limited vocabulary size. Also, it is necessary to teach the first two thousand most frequent words, which is practical and manageable. Second, explicit vocabulary learning can bridge the gap between learners' current proficiency level and any higher proficiency levels. Lastly, explicit vocabulary learning can speed up the learning process. In her studies, Laufer (2005) found that explicit vocabulary exercises led to approximately 70 % of words known in immediate receptive posttests although this decreased in the delayed posttests.

However, one of the strongest arguments for explicit vocabulary teaching and learning is that there might be too many new words to teach and there are various things teachers have to focus on such as grammar and communicative competence. In Thai educational settings, grammar is more highlighted by teachers (Boonyasaquan, 2009a, 2009b). Therefore, explicit vocabulary teaching and learning might not be practical.

The third vocabulary learning approaches receiving attention is vocabulary learning strategy development. This approach highlights teaching specific learning strategies so that learners are able to cope with unknown words, learn from contexts effectively and continue to increase their vocabulary size. Sökmen (1997) strongly believes that learners will not be able to learn all new words in their classroom. It is teachers' responsibilities to help them learn how to acquire vocabulary by themselves.

Nation (1990) suggests that after learning high frequency words, learners should be trained to develop the following three strategies: guessing from contexts, using mnemonic techniques to remember word meanings and using prefixes, roots as well as suffixes. Sökmen (1997) provides a list of strategies so that teachers can choose from: 'dictionary work', word unit analysis, mnemonic devices, semantic elaboration, collocations and lexical phrases, and oral production.

Despite potential benefits of independent strategy development, learners with different personalities might not feel confident using the same strategies as their peers. Sökmen (1997) suggests that learners should be exposed to various strategies and choose any ones they feel right. As suggested by Oxford (2003), no learning strategy is good or bad. Effective strategies "make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (Oxford, 1990, p. 8). Learners should recognize one's own style of learning and preferable vocabulary learning strategies so that they are able to employ such strategies both inside and outside classroom on their own.

**2.1.1.5.2 Vocabulary learning process**

According to Nation (2001), there are three processes taking place in lexical acquisition: noticing, retrieval and generation. The three processes are based on psychological conditions that promote learners to remember words.



To start with, vocabulary learning occurs when learners pay attention to an item as part of the language, rather than as part of a message. Such lexical items can be seen in textual or spoken input and also linked to learners' prior contacts of the words. Noticing can be influenced by various factors such as the salience and usefulness of the item, word presentation, learners' interest and motivation and learners' vocabulary learning attitudes which can be focusing on either a single lexical items or chunks as well as vocabulary learning environment. Retrieval process refers to the process in which learners recall an item. In other words, learners perceive the form, and they can retrieve the meaning of written or spoken input in the same way it is stored. Nation states that word repetition is a very important factor to promote the ability to retrieve. The more frequently words are seen or used by learners; the higher the chance learners are able to retrieve the words. Generation is the last process of

enriching and stretching the learners' knowledge of an item. In fact, generation process happens when words are seen in different forms and contexts. According to Nation (2001), generation process can be visualizing examples of words, word analysis, semantic mapping and using scales and grids.

### 2.1.2 Related theories on cooperative learning

#### 2.1.2.1 Cooperative learning

Cooperative learning is defined by Slavin (1982) as an approach which involves group tasks where a group of four to six members of all levels of performance work together to achieve their goals or rewards. According to Slavin (1982), there are various things that take place when a group of people work together to achieve their goal. One thing is that team members express norms to provide support of doing which could help their group to accomplish their goal. In classroom settings, the same thing is expected to happen. When working toward a group goal, learners begin telling one another what to do such as doing school work, coming to class regularly and other important learning behaviors. Learners then are valued by peers.

Johnson et al. (2014) point out that there are five elements important for cooperative learning. The first one is positive interdependence. This means team members rely on each other, and one's success is not possible unless other members are successful. On the contrary, if one member fails to do their part, the rest of the team cannot succeed. Secondly, individual accountability refers to each learner doing their part for mastery of all of the material to be learned. Individual accountability may cover the followings: giving each member to test each other, having each learner explain what they have learned, and lastly observing each learner and recording the contributions of each member. Thirdly, the element is promotive interaction. While working together, learners support each other's success by aiding, supporting and providing verbal support. That could lead to cognitive processes such as problem solving, concept discussing, teaching each other, challenging each other's reason skills, and connecting present and past learning. Also, this could promote interpersonal skills such as supporting and encouraging efforts to learn. Fourthly, appropriate use of cooperative skills is the condition in which group members develop

and practice trust-building, leadership, decision-making, communication, and conflict management skills. Lastly, group processing refers to occasionally assessing their group's goal in order to maximize their own learning as well as other members' learning.

#### 2.1.2.2 Zone of Proximal Development

According to Vygotsky (1978), educators should enhance the cooperative learning environment to encourage less proficient learners to co-work with more proficient learners, and that cooperative learning should be directed within the zone of proximal development (ZPD). ZPD is defined as " the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more knowledgeable others" (Vygotsky, 1978, p. 86). This idea is explained that a child's immediate potential for cognitive growth can be developed to reach the upper zone of development by the exposure to tasks or situations requiring assistance of people who are more knowledgeable such as peers, tutors or teachers. As they learn to complete such tasks with less help and with no assistance at all, their cognitive skills develop.

Another term associated with zone of proximal development (ZPD) is scaffolding. Scaffolding is defined as "a process that enables a child or a novice to solve a problem, carry out a task or achieve a goal which would be beyond his or her unassisted efforts" (Wood, Bruner, & Ross, 1976, p. 90). When learners enter the ZPD, they are exposed to a task or situation beyond their level as a challenge to reach their full potential. Vygotsky (1987) suggested that learners should be given initial support from a "more knowledgeable peer" to perform a task which is beyond his/her current level of ability.

Cooperative learning is useful for language learners in various ways. To start with, interaction among members is a source for redundant communication. However, Kagan (1995) points out that receiving recurring input is useful for learning to move from short-term comprehension to long-term acquisition. Moreover, Kagan states that cooperative learning tasks are designed to provide ample opportunities for learners to speak frequently on the same topic, which promotes fluency. The findings from

Ghaith's work (2002) indicated cooperative learning provided both academically and personally supportive classroom atmospheres. Johnson et al. (2014) add that cooperative learning allows and encourages interaction and discussion in which learners construct conceptual understanding of what is being learnt and provide feedback as well as support for each other.

However, there are some concerns over the use of cooperative learning as follows. One of the problems in adopting cooperative learning is the excessive amount of teacher preparation and training. Slavin (1982) points out that teachers need to divide learners into teams, provide materials for each team to study cooperatively, evaluate their team performance, and provide recognition or reward based on their achievement. This is demanding for teachers. In fact, what might happen in class might be conflicts among group members. According to Chan and Chen (2010), during cooperative learning, learners unavoidably go through the process of negotiation and competition, leading to inequality among group members with different levels of ability. The sources of conflicts were from poor management of communication, power inequality, participants' egocentricity, conflicts of values, and lack of responsibility. Cho (2015, 2016) cautions that cooperative learning might have a negative effect on less capable learners' self-esteem and confidence in learning due to disregard and rejection of their suggestions. Hence, Cho suggests teachers to provide sufficient opportunities to build a sense of community as a group before the start of group work. Kagan (1995) raises the point about accurate input where a traditional classroom might have advantages over cooperative learning. This is because teachers traditionally provide more accurate input as compared to peer output. Another concern is over teacher-fronted mindset of both learners and teachers. This can impede the application of cooperative learning, provided that both parties are familiar with the traditional teaching and learning approach. Kagan (1996) pointed out his learners reported receiving some wrong answers from their peers, and there was no individual accountability. According to Pitt (2000), there were five drawbacks relating to the following aspects: methods of group member allocation and project allocation, less contribution of weak learners, fair assessment to determine learners' group contribution, individual differences of learners as well as dishonest and competition resulting from some assessment factors.

## 2.2 Collocations

### 2.2.1 Definition of collocations

In the field of SLA, the term “collocations” is first introduced by Palmer (1933, cited in Nation (2001, p. 317) 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 piecing together component parts”. However, this term has been widely known by Firth (1957, p. 11), who points out that the meaning and word usage can be determined by neighboring words as in “you shall know a word by the company it keeps”. Since then collocations have been approached by different views. Among them, two important approaches play an important role (Nesselhauf, 2005). The first one is that collocation is related to frequency while the second approach is phraseology-based approach. The former has been adopted by researchers who are involved in the “computational analysis of syntagmatic relations (Nesselhauf, 2005, p. 12) while the latter has been focused by those who work in the field of lexicography and/or pedagogy.

Collocations according to frequency-based approach have been defined by various researchers. To begin with, collocations are defined by McCarthy (1990, pp. 12,158, respectively) as “a marriage contract between words, and some words are more firmly married to each other than others” and “the likelihood of co-occurrence between words”. Sinclair (1991, p. 170) defines collocations as “the occurrence of two or more words within a short space of each other in a text”. He explains “a short space” as a distance of around four words to the right and left of the word that is being investigated. He calls the word under investigation the “node” and calls words occurring in the environment “collocate”. Sinclair differentiates the significant collocations from the casual ones based on frequency. The significant collocations occur more often than expected on the basis of individual items. Woolard (2000, p. 29) also defines collocations as “the co-occurrence of words which are statistically much more likely to appear together than random chance suggests”. He adds that collocations are co-occurrence of words that his learners hardly expect to find them together. Lewis (2000a, p. 132) defines collocations based on statistically important occurrence of words as “Collocation is the way in which words co-occur in natural

text in statistically significant ways". He also believes that they co-occur not because people put them together, but because they naturally co-occur. Shin and Nation (2008) define collocation as a group of two or more words that occur frequently together, and it is not restricted to two or three word sequences", and they further explain that collocation consists of two parts: a pivot (the focal word) and its collocates (words accompanying the pivot word). The linguists in a frequency-based approach seem to agree that collocations are co-occurrence of word combinations at a certain distance, and they are differentiated between frequent and non-frequent collocations. It can be said that one of the most significant criteria for identifying collocations is the frequency of co-occurrences of lexical items.

The phraseological approach views collocation as word combinations where there are some restrictions on which words can enter a combination. Among the representatives of the phraseological approach, Cowie (1981) views collocations a type of word combination. However, due to various kinds of word combinations, he delimits collocations from other types of word combinations in particular from idioms. According to Cowie (1981), word combinations can be either 'composites' or 'formulae'. While formulae are word combinations that have pragmatic function such as "How are you?", collocations belonging to the group of composites are word combinations that have a syntactic function. Cowie's collocations fall in the group of composites. He further provides two criteria used within the composite group, namely transparency and commutability. While the former means whether the elements of the combination and the combination itself have a literal or a non-literal meaning, the latter refers to whether and to what degree the substitution of the elements of the combination is restricted. Cowie's collocation therefore is word combinations with an arbitrarily limited substitutability in which one element is used in a non-literal sense. Thornbury (2002, p. 7) defines collocations as " two words are collocates if they occur together with more than chance frequency, such that, when we see one, we can make a fairly safe bet the other is in the neighborhood" . He also adds that the relationship between two words was not fixed like compounds or multi-word units since collocations can be parted by one or more other words, hence, "collocation can be seen as a part of continuum of strength of association from compound words through multi-word units or lexical chunks including idioms and phrasal verbs to

collocations of more or less fixedness". Nesselhauf (2005, p. 25) provides the phraseological definition of collocations as "combinations in which at least one element has a non-literal meaning (and at least one a literal one) and in which commutability is arbitrarily restricted, but some commutability is possible". Nesselhauf explains that there are different criteria to delimit collocations from other types of word combinations: opacity and commutability, but there is lack of correlation. As a result, she proposes that there has to be one criterion to delimit collocation from other types of word combinations and in her study and it was commutability. This criterion is considered easier to measure than opacity.

According to Nesselhauf (2005), there is a tendency of mixture between the frequency-based and the phraseological approach. Combining both approaches tend to be more useful. According to Henriksen (2013), researchers who work in the framework of the frequency-based approach often work in large language corpora, and they classify collocations by employing objective criteria such as frequency, range and collocational span. On the one hand, the actual frequency of collocations is identified. On the other hand, this approach leads to lexical chunks that native would not classify as collocation units. Similarly, the phraseological approach tends to identify collocations with clear semantic relations, but they could not provide actual frequency use of collocations. Therefore, collocations based on the phraseological approach might not be suitable for L2 learners due to low frequency use. A number of researchers may adopt both. They may at first adopt a phraseological approach and consider frequency as a defining criterion. The same thing can happen for those researchers who work in the framework of the frequency-based approach and introduce phraseological distinctions. The definition of collocation in this study is that collocations are a lexical phenomenon where word pairs and phrases are frequently used in a language with arbitrary commutability.



### 2.2.2 Classification of collocations

Collocations have been classified by various researchers. To begin with, Sinclair (1991) classifies collocations into two groups as follows:

1. The upward collocations contain words which repeatedly co-occur with other more frequently words than they are themselves, and most of them are

prepositions, adverbs, conjunctions and pronouns. e.g. “back” collocates with “at, down, from, into, on” all of which are more recurrent words than “back”.

2. The downward collocations happen where words collocate with less recurrent words. For example, words “arrive” or “bring” are less frequently occurring collocates of “back”.

Sinclair points out that the upward tends to form grammatical frames while the downward provides a semantic analysis of a word.

Mahmoud (2005) also identifies two types of collocation, the open and restricted collocations.

1. Open collocations are word combinations whose nodes can collocate with a variety of other words as can be seen from the following example. The word car is node that can cluster with the word “red”, “small” and “expensive” as in a red car, a small car, an expensive car, etc.

2. Restricted collocations are clusters that are fixed or similar to idioms e.g. “kick the bucket”, “rain cats and dogs”, etc.

Hill (2000, p. 63) classifies collocations based on the strength of collocation as follows:

1. Unique collocations are fixed word combinations covering a unique node and its flexible or weak collocate. For example, “the foot” and “shrug” strongly collocate with “bill” and “shoulders”; therefore it leads to “foot the bill: and “shrug one’s shoulders”.



2. Strong collocations are strong or very strong combinations of nodes and their collocates. Strong collocations are different from unique collocations because there is still some tendency that other words can collocate with those nodes. For example the words “trenchant, rancid, motive, grudge and tears” tend to collocate with “criticism, butter, ulterior, harbor and moved to”, respectively.

3. Weak collocations are combinations of nodes and a variety of possible collocates as can be seen from the combinations of colors in English with other possible nouns such as “blue shirt” and “red car”. Basically, easy words tend to have many uses in varied contexts.

4. Medium-strength collocations are neither weak nor strong collocations, but they are collocations that are in the middle of the spectrum. They are word

combinations that learners tend to recognize the meaning of each word, but learners do not have collocational knowledge to know the whole collocation. For example, it is highly possible that learners know vocabulary separately, such as “hold” and “conversation”, but they do not have collocational knowledge to form “hold a conversation “as well as “make a decision” in their mental lexicon. Medium-strength collocations are possibly the most troublesome collocations since there could be thousands of them.

However, the simplest and most adapted classification of collocations adopted by a number of researchers can be divided into two major groups: lexical collocations and grammatical collocations. According to Benson, Benson, and Ilson (1997), grammatical collocations consist either of a main word (usually a verb, a noun, or an adjective) and a dependent word such as a preposition; or of a particular structural pattern, such *that*-clause, or *to* + infinitival + gerund.

1. Noun + preposition e.g. “blockade against”
2. Noun + to - infinitives e.g. He was “a fool to do” it.
3. Noun + that - clause e.g. He took “an oath that” he would do his duty.
4. Preposition + noun e.g. “by chance”, “by accident” and “in advance”
5. Adjective + preposition e.g. “fond of “children, “interested in” cooking
6. Adjective + to vinfinitive e.g. it is “necessary to” rest.
7. Adjective + that- clauses e.g. she was “afraid that she would fail.



Lexical collocations, in contrast, consist of two lexical components. Both words are equal such as verb + noun or adjective + noun.

1. Verb (which means action) + noun /pronoun/ prepositional phrase such as “inflict damage” or “come to a conclusion”
2. Verb (which means eradication or cancellation) + noun for example “reject an offer” and “crush resistance”
3. Adjective + noun for instance “a sincere apology” or” a tough decision”.
4. Noun + verb e.g. “planes take off “ and “lions roar”
5. Quantifier + noun as in “a piece of paper”
6. Adverb + adjective such as “fully aware” and “utterly stupid”
7. Verb + adverb as in “reject firmly” and “increase significantly”

### 2.2.3 Significance of collocations

Collocations play a vital role in language learning and teaching. To communicate effectively, learners not only need to acquire a number of collocations, but also use them correctly. Hill (2000) provides nine reasons why collocations are necessary as follows.

1. ***Lexicon is not arbitrary***. Hill explains that all languages share the way word combine in collocations. To some degree, word choice can be predicted. Knowing certain collocations is useful for predicting words that appear together. Hill exemplifies that if we think of drinking, the common verb commonly used is "to have". Hence, the possibilities of collocations might be "have tea, have coffee, have milk or tequila sunrise". Hardly does anyone think of "have engine oil, shampoo or sulphuric acid".
2. ***Collocations are predictable so collocations make learning easier for learners***. There are parts of collocations which can be organized and patterned. As a result, encouraging learners to notice such predictable patterns is of great benefits.
3. ***The size of collocations is huge***. Hill (2000, p. 53) points out that "up to 70 % of we say, hear, read or write is to be found in some form of fixed expression".
4. ***Collocation helps improve the role of memory.*** Collocations are known since they have been encountered. Hence they are retrieved from our mental lexicon the same way a telephone number or our address has been has been pulled from our memory.
5. ***Collocation enables us to communicate fluently.*** One of the facts that native speakers speak fluently is a vast repertoire of ready-made language from their lexicon. Other skills such as listening and reading also benefit from collocations because the process of recognizing multi-words happens quickly, enabling quick language reception and production. Nesselhauf (2003) also agrees that collocational competency is one vital part of native speaker competency hence collocation should be focused in language teaching classroom. This may be because the mastery of collocations enhances fluency in both spoken and written language as well as in both receptive and productive tasks. Nesselhauf (2005) claims that there is evidence showing that

human brain has better skills in memorizing than processing. So the existence of a number of collocations leads to the reduction of processing effort of human's brain thus making fluent language possible.

6. ***Collocations help learners express complex ideas.*** Hill (2000) explains that learners at intermediate level tend to apply simple word to convey both simple and complex ideas. However, complex ideas are problematic since they are made from noun phrases which are both difficult and complex, hence collocations tend to facilitate learners. The more exposure of good quality input learners have, the more their awareness of lexical nature of language is developed.
7. ***Collocation makes thinking easier since it enables learners to express complex ideas quickly without brain workload and might reduce grammatical errors.*** This can be explained that lack of collocational competence often leads learners to write longer sentences which might contain more grammatical errors. Moreover, one of the problems learners always have is lack of ideas when writing. Hill, Lewis, and Lewis (2000) claim such problem occurs in relation to the lack of collocational knowledge. Some particular idea is best described precisely and economically by the use of collocations as can be seen from the following examples "accept the outcome, predict the future and struggle unceasingly against". They conclude that collocational knowledge shortage might be similar to idea shortage.
8. ***Collocation has positive effects on pronunciation***. Pronouncing individual words might cause difficulty for listeners. Learning a stress pattern of phrases as a whole will help learners to improve stress and pronunciation.
9. ***Chunk recognition tends to facilitate acquisition.*** Hill (2000) explains that learners tend to have problems while reading since they could not recognize chunks and read words separately. While silently reading, they could store chunks incorrectly. Improper chunking leads to either no storage of words or wrong storage. Conversely, properly stored chunks are ready for instant use of learners.

Lewis (2000b) also adds that learning collocations is likely to promote development of learning skills. One of the skills required in learning collocations is

noticing. Lewis claims that exercises and activities that facilitate observing or noticing and forming a quick and accurate hypothesis will promote acquisition. What is more, not only noticing is likely to take place, but also keeping records of new collocations and selecting collocations suitable for learners' own needs can occur as a result of teachers' encouragement, leading to independent language learning. It could be concluded that collocations are necessary in order to master communicative competence, collocational competence and other language skills. Therefore, the concept of collocations should be introduced and highlighted in the class.

**2.2.4. Collocation instruction**

Acknowledging the significance and potential problems of collocations, several researchers suggest that collocations should receive attention and should be taught (Bahns & Eldaw, 1993; Hill, 2000; Mallikamas & Pongpairoj, 2005; Nesselhauf, 2003, 2005).

**Lexical approach**

The lexical approach aims at developing learners' proficiency with lexis and word combinations by exposing the learner to large amounts of input. The key principle of a lexical approach is that lexis is central in creating meaning and grammar plays a secondary role in managing meaning. This is because wrong use of words affects meaning, but ill grammatical sentences may not affect speakers' intention. Lewis (1997a) affirms that the ability to understand and create lexical chunks is a key to language acquisition. Word combinations should be treated as a whole not as separated individual word. Whenever learners want to speak or write, they recall these ready chunks instead of searching for which word goes with which in their mental lexicon. He believes skills to chunk relevant language together should be taught.

According to Lewis (1997b), there are four fundamental kinds of lexical items: words and poly words, collocations, institutionalized utterances and sentence frames or heads. To begin with, the first group "words and poly words" is the largest group and has been recognized in language teaching. 'Words' refer to independent lexical items such as "stop" .Substitution of words affects meaning of utterances. For example, the substitution of the following words "salt, sugar or water" change the meaning of the sentence " I need some ……, please". In addition, 'polywords' are

more than one lexical item but act like single words such as ‘by the way’. The second type is ‘collocations’ which refers to “Some pairs or groups of words co-occur with high frequency” (Lewis, 1997b, p. 256). Collocations can be associated with word pairs such as verb-nouns and adjective-nouns like “to raise children” and “long term memory”. Also they may be groups of words, and they can contain grammatical words. It is useful for learners to record collocations and record them in the sequence they frequently occur. Recognizing, generalizing and recording collocations are vital elements of Lexical Approach. Thirdly, institutionalized utterances are whole spoken chunks of language used to express pragmatic meaning such as “It’s nothing to do with me”. Lewis suggests that those institutionalized utterances that have a form of fully grammaticalised sentences should be focused on in teaching. In fact they are fundamental basis of language learning. Once mastered in learners’ mental lexicon, they lead to fluency. More importantly, Lewis (1997a) points that they can be input which is necessary for inductive acquisition of generalizable rules. Lastly, sentence frames or heads are similar to institutionalized utterances, but they are in written forms. They help understand complex reading texts and write well-structured long writing texts. The example of sentence frames or heads is the use of sequence words such as “First, Secondly and Finally”. Lewis (1997a) states that this type of lexical items is of importance for academic or professional purposes

Lewis (2000b) argues against the CLT technique of ‘Presentation, Practice and Production’ (PPP) because the focus is too much on language patterns so he proposes an ‘Observe, Hypothesize and Experiment’ cycle, an inductive, consciousness-raising methodology. First of all, observation means new language is observed and noticed. Acknowledging Krashen’s Natural Approach, Lewis adds that for input to become intake, noticing is necessarily involved in this process. Then the next stage is hypothesizing which means learners sort out the input according to similarities and differences. Eventually, learners apply the new language which might confirm or contradict their hypothesis. A teacher’s role is to predict possible problems and provide negative evidence which helps learners to form effective hypotheses.

Lewis’ Lexical Approach is criticized by various researchers. Thornbury (1998) points out that Lewis’s theories and beliefs are inconsistent, and Lewis does not provide clear guidelines for syllabus design. Lewis’s theory appears to be

incoherent about how languages are learned. Lewis seems to rely on Krashen's theory which advocates the importance of input and acquisition not learning, but Lewis suggests that learners need to consciously develop awareness of languages. Moreover, Thornbury (1998) notices that Lewis seems to disagree on lexical, grammatical or task-based syllabus so syllabus designers are not certain about his syllabus specifications. Although Lewis provides material requirement of the Lexical Approach, Lewis fails to explain how to select them.

Regarding how to teach collocations, Wei (1999) and Hill (2000) provided some suggestions as follows.

To begin with, Wei (1999) acknowledges that one of the problematic factors affecting teachers and researchers is the large number of collocations. It is estimated that there are tens of thousands of collocations. Wei claims that not all of them should be taught. The focus of teaching should be on how to raise learners' consciousness of collocations and how words work when they collocate with one another so that learners are able to continue developing their collocational competence outside the classroom. The suggestion is in line with that of Hill (2000) and Nesselhauf (2005). Teachers need to present collocations clearly and explicitly as a guidedance to raise learners' awareness.

Secondly, selection of words and collocations could be based upon frequency of words and meaning. Wei suggests consulting the Educator's Frequency Guide (WFG). In teaching collocations to high proficient learners, teachers should consult the frequency guide and select common words that tend be more problematic. Another factor affecting word selection is meanings. Teachers should consider the meaning. For example, under "manage", comparing the meaning between "succeed in" and "to be in charge of" shows that the former occurs more frequently than the latter. He also suggests using A General Service List of English Words, which provides a semantic count. Finally, teachers could choose techniques, activities, and exercises that can be used in teaching collocations. Wei recommends peer correction which allows instant feedback and reinforcement.

Hill (2000) also provides suggestions for teaching collocations. To start with, when learners are introduced a new word; they should be presented common collocations of the target word. For instance, if teachers want to teach the word

“crime”, the following collocations should be taught at the same time: “commit a crime, “solve a crime”, “juvenile crime” and “crime scene”. When they move to a higher level and may need to learn less common words, learners also need to be aware that some words are used in a very strict number of collocations. In addition, learners need to know not only meaning of a word, but also how such word is used, requiring the knowledge of collocational fields and contexts where such word occurs.

Hill (2000) also agrees with Wei (1999) that a key to language learning is being aware of collocation, and learning techniques are necessary than teaching individual words. He states that what learners need is noticing. To promote noticing, teachers could ask learners to underline all collocations in the text. Another suggestion is that teachers should extend what learners already know. With the knowledge of individual words, learners’ communicative competence might be limited. However, knowing collocations of the individual words learners already know might make learners far more communicatively competent. For example, teachers might extend learners’ knowledge from the word “do” to the following collocations “do one’s best, “do business” and “do research”. Lastly, vocabulary organization is important for learners. They could do so in their own lexical notebooks by recording and storing collocations they have learned. Their organization can vary such as grammatical-based, common key words or topic-based. Hill suggested that storing collocations in a systematic way will enable learners to revise and retrieve them instantly.



## 2.3 Corpus and concordance

### 2.3.1 Definition

Previous researchers have defined the meaning of corpus as follows. Sinclair (1991, p. 171) defines corpus as “a collection of naturally occurring language text, chosen to characterize a state or a variety of a language. In modern computational linguistics, a corpus typically contains many millions of words: this is because it is recognized that the creativity of natural language leads to such immense variety of expression that is difficult to isolate the recurrent patterns that are the clues to the lexical structure of the language”. According to Hunston (2002), linguists always

define a corpus as “a collection of naturally occurring examples of language: consisting of anything from a few sentences to a set of written texts or tape recordings, which have been collected for linguistic study”. Hunston (2002) mentions two important factors in defining a corpus namely forms and purposes. The first one is that the form of corpus collection has transferred from paper-based collection to electronic based one. Also the purpose of corpus collection is important for definition since it helps selection of texts. Baker (2006, p. 2) not only provides the definition, but also points out the purpose of a corpus as “large representative samples of a particular type of naturally occurring language, so they can be used as a standard reference with which claims about language can be measured. O'Keeffe, McCarthy, and Carter (2007) define it as “a collection of texts, written or spoken, which is stored on a computer”. Flowerdew (2012, p. 3) affirms that all researchers define a corpus relatively similarly as “a collection of authentic language, either written or spoken, which has been compiled for a particular purpose. Most commonly these purposes are purely linguistic, but can also be of a socio-pragmatic nature. It could be concluded that most researchers view a corpus similarly, and the definition of a corpus covers the following criteria: authenticity of the language, representative of the language and explicit text selection criteria.

Only storing a large amount of data on a computer will not gain the benefit without specially designed software called a concordance. All software of corpus linguistics is equipped with concordance lines allowing pattern observation, analysis on uses of the target words and surrounding contexts. According to Sinclair (1991, p. 32), “a concordance is a collection of the occurrences of word- form, each in its own textual environment. In its simplest form, it is an index. Each word-from is indexed, and a reference is given to the place of each occurrence in a text. Woolard (2000, p. 39) states that “(a) concordance is a relatively simple piece of computer software which allows a constructive search of large amounts of text for examples of a particular word or phrase”. Put it simply, this program allows users to search a corpus for a selected word or phrase and present the results where the search word is in the middle of the computer screen surrounded by words that come before and after as contexts. These are known as Key-Word-In-Context displays (or KWIC

concordances). Concordance lines are presented horizontally but usually scanned vertically.

According to Hunston (2002), corpus users can observe concordance lines for the following aspects: central and typical meanings, meaning distinctions, meaning and pattern, and observing detail. To begin with, observing typical meaning will show the most recurrent meaning or collocates of such search word. Observing meaning distinction refers to observing words that are near synonyms. Those near synonym words sometimes cannot be clarified by dictionaries. For instance, the following adjectives sheer, pure, complete, utter and absolute are defined similarity in dictionaries. In fact, they are different in terms of typical collocates of each adjective. For example, the adjective sheer is mostly found with nouns of degree such as sheer weight and sheer number. Next we could observe meaning and patterns. Although words can have more than one meaning, it is possible to differentiate meanings by the patterns or phraseologies in which they typically occur. For example, the word condemn has several meanings. When analyzing the concordance lines, the meaning concerning criticism would show the following patterns: condemn something and condemn something as something. On the other hand, when the word condemn means make something bad happen, the pattern frequently found is condemn someone to something. Lastly, observing concordance lines can lead to observation about behavior of individual words. For instance, the word advice is always followed by "as to" but more detail observation reveals that before "advice as to" the verb indicating "getting, giving, wanting or offering" always occur.



**2.3.2 Significance of corpora in language teaching and learning**

Römer (2006) states that corpora can be used as a tool and a method in language teaching and learning hence he divides the use of corpora into two aspects: direct and indirect applications. The indirect applications refer to the evidence from corpus analysis contributing to development of teaching materials such as dictionaries, grammar books and course-books. According to O'Keeffe et al. (2007), corpora have been used to produce 16 dictionaries and grammars, most influentially the *Collins COBUILD English Language Dictionary* (1987, 2nd edition 1995, 3rd edition 2001, 4th edition 2003). Also material designers could analyze

corpus data; increase the meaningful input and design materials suitable for particular groups of learners (Biber & Reppen, 2002). Moreover, corpora can be great resources for linguistic analysis. O'Keeffe et al. (2007) explain that we can investigate a feature in a language through a corpus quantitatively and qualitatively. For example, we could count how many times the words we want to study occur in a corpus and compare it with other corpora. This will lead to a quantitative result. Another way is that we analyze such word from concordance lines to see patterns. To do this, we need to look beyond the frequency of the word's occurrence. O'Keeffe and McCarthy (2010, p. 129) add that concordancing can be used for hypothesis testing and hypothesis generation. Hypothesis generation is explained that "a hypothesis can be generated based on patterns observed in just a small number of lines, and subsequently tested out through further searches". Granger (2011) proposes that there are three aspects of language received from corpora: frequency, variation and co-texts. Like other researchers, she adds that the combination of large amount of authentic language data and powerful automatic analysis provides quantitative data on all types of linguistic units from morphemes to syntactic structures. She also points that comparing the data from different corpora can provide insights about variations of languages in terms of geographical or temporal aspects, enhancing appreciation of multifaceted variation inherent in language. Lastly, corpora can provide contexts which show relationship between lexis and grammar so it led to better insights of syntagmatic of aspects of language.



In terms of direct use of corpus in language teaching and learning, Römer (2006) states that teachers and learners do not have to rely on corpus-based findings from researchers, but they are encouraged to conduct their own investigation. Among the pioneers of those who have applied corpus in grammar and vocabulary class, Tim Johns proposes an approach using corpus in language learning called data driven learning (DDL). DDL is connected with inductive learning or discovery-based learning in which learners observe a particular phenomenon of a language from concordance lines and figure out how this phenomenon of a language works, before they test whether the hypothesis is correct. According to Johns (1991), DDL procedure covers the following three steps: Identify-Classify-Generalize. The first step refers to the identification of structures for investigation, which could be from

teachers or from class generation. The investigation from class generation may be more beneficial since it might stimulate learners' immediate interest, which might lead to a concordance research. Once concordance lines are received, the second stage, classification, takes place. This stage is important for learners might be overwhelmed or confused by the large number of concordance lines. Teachers can provide help to prevent confusion. Lastly, the stage of generalization involves inductive rule construction learners use to describe target structures or words. Generalization is considered an important part of learning process because it means learners actively take part in cognitive process of rule generalization.

As mentioned earlier, learners could use corpus data for hypothesis testing. In fact, there are other ways corpus data can be used. Error correction is one of the areas corpora can facilitate. The findings from Todd (2001) and O'Sullivan and Chambers (2006) pointed out that learners were able to self-correct and revised their writing respectively by using corpus data. Sripicharn (2010) also suggested that learners could use corpora to compare similarities and differences of word use and language patterns between two languages. Lastly, he stated that corpora can be useful for genre analysis both for macro and micro levels. The former is when learners analyze words, phrases and patterns that are especially found in a particular text type or genre. The latter is when learners analyze language features which are frequently found in a particular move.



According to Johns (1991), DDL can have a positive effect on the process of language learning, encouraging questioning skill and discussion, and stimulating the learner to improve the ability to see language patterns in the target language and to make generalizations. Batstone (1995) supports that DDL could stimulate creativity and self-discovery learning among learners. Moreover, there would be role changing for both teachers and learners. Learners now take a role of researchers whereas computers and concordance lines act as informants, and teachers take a role of facilitators. Lastly, DDD would change a role of grammar in language learning and teaching since it would lead to a new style of "grammatical consciousness raising" by emphasizing the learner's own discovery of grammar and by making it possible for that discovery to be based on evidence from authentic language use. It can be said that

grammar learning activities that can raise language learners' consciousness should be included, rather than those focusing on teaching of rules.

Vocabulary teaching in particular collocation could also gain benefit from corpora and concordancers. According to Hunston (2002), collocations can be observed informally but more reliably and statistically observed through corpus data. Teaching collocations through corpus data can highlight not only patterns, but also association between meaning and patterns. Sun and Wang (2003) examined the usefulness of inductive and deductive approaches on the collocation learning by using a concordance. The findings showed that the inductive group performed significantly better than the deductive group on the learning of easy collocation patterns. The findings revealed that concordancers could encourage language learners to become efficient self-discoverers of target language collocations for collocation learning. Woolard (2000) states that when learners produce miscollocations, teachers can make use of miscollocations. This is because learners' collocational awareness can be raised if teachers keep record and bring miscolocations into classroom. Woolard sums that learners should be aware that "learning more vocabulary is not just learning new words, it is often learning familiar words in new combinations" Woolard (2000, p. 31).

Although corpus-based approach can be beneficial for various aspects, it has been criticized as follows. To begin with, concordance lines are claimed to be authentic languages. However, they have been questioned in terms of decontextualization. O'Keeffe et al. (2007) explains that once texts are taken from original texts they first appear and reproduce in teaching contexts, they are removed from real environment then they are decontextualized. Besides, they point out that texts are produced in particular cultures and may not be culturally understood for outsiders. What is suggested from Hunston (2002) is that language in corpus needs to be re-contextualized in order to make it real for learners. In terms of cultural differences, O'Keeffe et al. (2007) propose discussion of cultural background. Secondly, Hunston (2002) pinpoints the possible problem that teachers might not be critical enough so they tend to accept corpus evidence without careful consideration. For example, teachers might receive the data about word frequency and design materials based on the frequency criterion only. Moreover, relying too much upon

native speakers' norms according to corpus data might be disadvantageous for learners' communicative progress and might devalue non-native speakers' norms.

In classroom settings, it is worth considering challenges as follows. The most obvious challenge is that corpus-based approach involves inductive learning which might not be appealing for all learners partly because learners' learning cultures tend to have effects on corpus implementation. A number of learners who are familiar with deductive learning with teacher-centered might find this approach confusing and demotivating. This is because inductive learning as discussed earlier covers the following steps: noticing, generalizing, inducing language patterns as well as dealing with excessive number of concordance lines. These steps could be demanding without training and enough practice. Tasanameelarp and Laohawiriyanon (2010) reported that over one third of the participants preferred their traditional way of learning with their teachers, and some stated that corpus-based learning was too difficult. The finding from Sripicharn (2003) showed that classroom concordancing had no significant effects on the participants' ability and language points focused in the study. One possible factor could be the familiarity of traditional learning culture, deductive learning.

## 2.4 Previous studies

### 2.4.1 Previous studies on collocations

This section addresses previous studies in other contexts and in Thai context.

#### 2.4.1.1 Previous studies on collocations in other contexts

Brashi (2009) examined the learners' receptive and productive collocational knowledge with twenty volunteer undergraduate learners whose major was English. The two instruments used in the study were a blank filling test of English collocations to examine the productive knowledge of collocation and a multiple choice test of English collocations to test the receptive knowledge. The target words used in the blank filling test were also used in the multiple choice test. The findings showed that the participants produced more errors in the productive task as compared with those in the receptive task, accounting for 62% and 21%, respectively. The researcher stated that the unacceptable production of collocations was a result of various causes, and

one of them was L1 interference. Moreover, the misapprehension of collocations was another cause. Although language learners' receptive knowledge was better, their collocational production may be limited. The researcher pointed out that the attention should be on both perception and production.

Alotaibi and Alotaibi (2015) investigated Kuwaiti EFL learners' awareness of grammatical collocations. One hundred Kuwaiti learners whose age ranged between 18 and 30 were selected based on their English placement test scores, resulting in two groups namely advanced and intermediate groups. There were two tests in this study. A multiple-choice test was designed for comprehension checking or receptive skill checking while a fill-in the blank test was for testing production skills of grammatical collocations. After the two tests, the researchers conducted an error analysis to investigate some possible causes. The results showed that the mean score of the advanced group was higher than that of the intermediate one, and the difference between the mean score of the advance group and the intermediate group was statically significant. Lastly, the comprehension of grammatical collocations of both groups was better than that of production. The researchers concluded that there was some awareness of grammatical collocations in English among Kuwaiti EFL learners. Concerning the problematic patterns, those that have prepositions tended to cause the learners problems the most because Arabic prepositions are different from English prepositions. The possible explanations for their errors were as follows: little exposure at school, frequently seen items in everyday life and L1 transfer.



Alsulayyi (2015) conducted a study to compare the collocational production of 10 Saudi undergraduate learners, five of which in the UK and the other five in the KSA (Kingdom of Saudi Arabia). Despite the difference of settings, the level of proficiency of the two groups was not significantly different. They all scored either 5.5 or 6 in IELTS. The researcher intended to study grammatical collocations as they tend to be more problematic if compared with lexical collocations. Each learner handed in one assignment. Then their ten assignments on dissimilar topics in the same genre were analyzed, and then error analysis approach was conducted. The results showed that the Saudi learners who were in the UK outperform those in the KSA. The most problematic pattern found in both groups is noun + preposition pattern, followed by adjective + preposition patterns. The three reasons for the errors were as follows:

L1 interference, avoidance and limited grammatical collocation knowledge. The result indicated that some grammatical collocations are more challenging so appropriate teaching techniques should be adopted so that learners use collocations properly.

**2.4.1.2 Previous studies on collocations in Thai contexts**

Mallikamas and Pongpairoj (2005) conducted a study about Thai learners‟ knowledge of English collocations focusing on both receptive and productive skills. The researchers analyzed the problems of the following collocations: lexical, grammatical and bound collocations. 114 Thai first year learners participated in this study. The data was collected through two sets of tasks, and each set contained three parts: multiple choice, error recognition and gap-filling tasks. The multiple choice and error recognition part were designed to test the participants‟ receptive skills while the gap-filling part was to assess their productive skills. The participants took each test within 30 minutes. The findings revealed a variety of problems in both skills, and grammatical collocations were the greatest difficulty in both tasks. Lexical and bound collocations were more problematic in reception than production. The qualitative analysis revealed two interesting findings. First, although the participants chose the grammatically correct collocators, they became unacceptable collocations. Secondly, the participants' selection of the collators was based on certain criteria, rather than in a random way. In addition, the researchers suggested the lexical approach to help develop Thai learners' collocational knowledge.

Mongkolchai (2008) investigated level of collocational ability and problems with 57 third year English majors at a university. The researcher employed a 56-item collocation test based on seven patterns of Lewis (2000 cited in Mongkolchai (2008), eight items from each pattern.

1. adjective + noun e.g. low season
2. verb + noun e.g. conduct a study
3. noun + noun e.g. city centre, a city tour
4. verb + adverb e.g. ask nicely
5. adverb + adjective e.g. fast asleep, physically tough
6. adjective + preposition e.g. (to be) sick of
7. phrasal verb e.g. blow up

The findings revealed that the informants' ability was fair with the mean score of 52.32%, and the researcher pointed that it was because of their limited awareness of collocation. Among the seven patterns, the ability in noun + noun pattern was the highest, followed by the adjective + noun pattern and verb+ noun pattern, respectively. The explanation was because the learners may be familiar with these patterns from previous learning experience. Ranked as the fourth, the ability in adjective + preposition pattern was 51%. The most problematic pattern was that of adverb + adjective collocations, followed by verb+ adverb pattern and phrasal verbs. The analysis of collocational violations suggested the following seven reasons for their collocational problems: limited knowledge of collocations, L1 transfer, the engrossing effect of the source text patterning, the use of synonymy and the limited knowledge of cultural-specific collocations. The result of this study highlighted the importance of raising collocation awareness and noticing.

Yumanee and Phoocharoensil (2013) undertook research on causes of collocational errors with Thai 60 twelfth-grade EFL learners. The participants were divided into two groups: high and low proficiency groups according to their standardized test scores, General Aptitude Test (GAT). The researcher instruments employed in this study were two collocational tests. The first test whose word selection was based on Oxford Collocations Dictionary for Learners of English (2009*)* contained 45 multiple choice items and was designed to test the receptive skill. The other one aimed at testing productive skill came in the form of 18 translation items. Both grammatical and lexical collocation categories were focused in the two tests. The results pointed out that the collocational errors in both receptive and productive tests may mainly result from L1 transfer. Moreover, other possible factors leading to the collocational errors were as follows: the synonymy strategy, the learners' creative invention and the strategy of analogy, the paraphrasing strategy, and limited knowledge of collocation. The researchers suggested that learners' collocational awareness should be raised and the differences of collocation between L1 and L2 should be focused.

Suwitchanphan and Phoocharoensil (2014) undertook research on adjective +noun collocation of L1 Thai learners. In addition, they investigated the relationship between school curricula and collocational competence of adjective + noun in three

tests to see the impact of exposed to the target language. Their subjects were grade 11 learners which were classified into 2 groups: 30 learners from a regular program and 30 learners from an English program. Their language proficiency was relatively similar according to their scores from the Oxford Proficiency Test (OPT). The only difference was the number of exposure of English per week. The English program learners had far more exposure to English than those from the regular. The data collection was conducted in class. The participants then took three tests as follows: the Gap-Filling Test, the Collocation Selection Test, and the Descriptive Written Task, respectively. All the nouns used in the first two tests were selected from the 1,000 most common written words according to the Longman Dictionary of Contemporary English (2009). The participants from both groups were explained the concept of adjective + noun collocations before testing. The results indicated that the learners from the regular program outperformed those from the English program in the Gap-Filling Test, and there was no significant difference of collocation selection between the two groups in the Collocation Selection Test. In the Descriptive Written Task, the regular program subjects used more appropriate collocations than those from the English program. The researchers explained that despite massive exposure, the English program learners might have limited opportunities in developing their speaking and writing. They also suggested that teachers should be aware of collocations significance and raise advantages of collocations to the class. Moreover, learners' awareness should be raised through various learning activities, and the focus of collocation selection should be based upon frequent collocations.



Phoocharoensil (2014) investigated the collocational competency focusing on the problems in their collocation use with 90 Thai EFL learners at a university in Thailand. They shared the first language and had been learning English for at least 12 years. The participants' standardized test scores were used in order to classify them into two groups namely high and low group according to their proficiency. The standardized test used in this study was ONET (Ordinary National Educational Test). The researcher collected the data through the 200-word descriptive essays written by the participants. The researcher explained that descriptive essays would elicit the real use of collocation rather than other types of tasks such as gap-filling or a cloze test. The findings revealed that the errors from the learners' essays indicated the two

learning strategies: L1 transfer and synonymy. Like the previous studies, the results of this study pointed out that language learners rely on their L1 collocational patterns, but when there were no similarities between the two languages, L1 transfer led to the errors. Another cause of the errors was the use of synonyms. This was explained that substitution of synonyms in collocation may not be appropriate. The researcher provided various examples, and one of them was the collocation pattern "reach one's target. What the learners wrote was " They will try every way to *reach their goal* in the end" It can be said that to the learners' knowledge of synonym, the word " target " and "goal" are alike so they used them interchangeably, resulting in such erroneous combination. The study suggested some teaching applications regarding teaching collocations such as raising awareness of similarities and differences between L1 and L2collocations.

**2.4.2 Previous studies on applications of corpus to collocation learning and teaching**

Sun and Wang (2003) studied the effectiveness of two teaching approaches: inductive teaching with concordance lines and deductive teaching on collocations. Also the researchers examined the relationship between the difficulty of collocation patterns and learner performance. 81 senior high school learners participated in this study, and they had approximately 4 years of learning English. Their reading ability to understand concordance lines was adequate. The participants were randomly divided into two groups: inductive and deductive group. The two collocation patterns selected were selected because they were unfamiliar for the participants. The levels of difficulty of the two collocation patterns namely easy and difficult level were judged by two experienced EFL experts. The easy patterns cover the following two patterns:

1. distinguish A from B, distinguish between A and B
2. in excess of.

On the other hand, the difficult collocation patterns are as follows:

1. indignant with, indignant at
2. the gulf between A and B.

The formats of the pre and post-tests were error correction in collocations. At the beginning of the study, all participants from both groups, inductive and deductive

groups, took the pre-test. Then the inductive group was introduced three web-based concordancing tools and followed the process containing three-stages. The process was similar to the one that was designed by Todd (2001). The process covered searching five instances on a web-based concordance, inducing the pattern from the searched lines and correcting the errors. The deductive group was shown the target process and was presented the grammatical rules for error correction. Then both groups took the post-test immediately. The findings revealed that the inductive group showed more significant improvement than the deductive group. The researcher also discovered that the easy patterns were more suitable for inductive learning than the difficult ones while the difficult patterns had no significant differences on both approaches. The researcher concluded that both approaches were effective depending on the level of difficulty of grammar rules and that more difficult structures might require teachers' assistance.

Koosha and Jafarpour (2006) quantitatively investigated the role and effects of data driven learning (DDL) on collocation of prepositions with 200 Iranian EFL learners. Their participants came from three universities, but they all had the same English major. They were required to take the Michigan Test of English Language Proficiency (MTELP) to identify their level of language proficiency. The mean and the standard deviation scores from MTELP were used to classify the participants into three groups: high, mid low groups. Then the participants from each group were randomly assigned into control and experimental groups. Before receiving both instruction approaches: conventional and data driven approach, the participants took a pre completion test on collocation of prepositions. The test consisted of 60 items. Throughout the semester, the participants from each group attended one-hour English class relating to the structure of English prepositions and collocational properties. In this study, the researchers selected the following patterns of prepositions to teach.

1. adjective + preposition collocation e.g. expert at, happy about
2. preposition+ noun collocation e.g. on vacation, with embezzlement
3. noun + preposition collocation e.g. motivation in, admiration for
4. verb + preposition collocation e.g. consist of, insist on
5. preposition + preposition collocation e.g. out of, next to
6. idiomatic expression e.g. to be at best, to be in the air

Those participants from the control group were instructed explicitly through selected conventional grammar books while those from the experimental group were taught inductively through the handouts containing concondance lines taken from Brown Corpus online. Finally, both groups took a post-test. The findings indicated the positive effects of DDL on learning collocation of prepositions. Moreover, according to the analysis of errors, the participants'' L1 tend to have a major influence on the use of collocation, 68.5% of errors resulting from L1.

In Yoon (2008)'s study, a qualitative research was conducted with six graduate-level advanced ESL learners in English for Academic Purposes writing course to investigate the changes in their L2 learning and process to L2 writing over two semesters. The data was collected through triangulation of multiple methods and data sources: classroom observation, interviews, corpus search assignments, corpus research-email logs and written reflection on corpus use to examine the L2 writing process. The result of his study was that concordancing increased awareness of the importance of collocations among L2 learners and caused them to pay more attention to collocations in their writings. The findings also showed learners' satisfaction with their writing experience and there was a minor change to the writing process over the period. Regardless of the frequency of corpus use, the learners developed the new habit that was the regular checking while composing and the availability of corpus led to confidence in writing. Yoon claimed that this might lead to independent learning since they learners take more control over their own writing.



Liu and Jiang (2009) inspected the effects of incorporating corpus and contextualized lexicogrammar in foreign and second language teaching. The study was carried out in China (EFL) and the United States (ESL). Since it involved a number of teachers in both countries, the teachers were trained before the experimental process. The number of participants at the Chinese university was 160 while that of the southeastern American university was 176. The results displayed that there were positive effects not only on the learners' opinions towards the approach, but also on the teachers' teaching perspectives. Comparing the two settings, there were more positive responses from the learners in ESL than from those of EFL. This might be because of the better access to corpora, the size of the classroom, the language proficiency and most importantly the language environment. Like the

participants of the previous studies, the learners in this study faced some challenges concerning effective analysis during corpus consultation and the confusion from irrelevant examples. A possible explanation is the participants received no training. The two recommendations were having learners conduct search activities based on deductive learning first before inductive and having learners conduct group corpus search.

Rahimi and Momeni (2012) undertook research on the effect of teaching collocations by using corpus-based activities with 60 pre-university learners who were selected from convenient sampling and then divided into two groups: control and experimental group. The participants 'major was mathematical sciences. The instruments in this study were as follows: A language proficiency test which was used as a pre-test and a post-test. Both pre and post-test contained four parts: reading, writing, listening and speaking. Prior to the study, the participants' language proficiency took place. During sixteen weeks, while the control group learners were taught the new words of the reading comprehension passages of the textbook by traditional teaching methods, involving words' explanation, definition and translation, the experimental group learners were given concordancers and corpus-based activities. Then the post-test was conducted with both groups after 16 weeks. The results showed both groups performed better, but the experimental group outperformed the control group. It can be concluded that corpus-based activities had positive effect on the learners' language proficiency. This might be because corpus consultation provided the learners opportunities to observe language pattern and collocation.



Jafarpour, Hashemian, and Alipour (2013) investigated the production and comprehension of collocations of near synonyms comparing two approaches as follows: the traditional approach (explicit teaching in classroom settings) and the corpus-based approach. Their 84 participants were chosen based on the following criterion: age range, their scores from the Michigan Test of English Language Proficiency (MTELP) and their scores from a test of collocations before they were divided into two groups: experimental and control. Then before the implementation of teaching, the participants were told to write on a familiar topic. This piece of writing served as their prewriting. Then there was a test on collocations of synonyms to check

the participants' collocational knowledge of synonyms. The test as a pre-test asked the participants to choose the correct answers from the two choices and contained 20 items with its reliability at 0.89. Next, the treatment began with various materials and exercises designed to raise the participants' knowledge of English collocations. The experimental group was given the data from BNC to explore the L2 patterns and new words with their synonyms to look up their collocations. Receiving the printout, the participants observed contexts of words in concordances. The findings revealed that the positive effect of the concordance-based method on the participants' comprehension and production. The researchers concluded that corpus-based approach highlighted collocations in context and draw learners' attention more effectively.

Kheirzadeh and Marandi (2014) qualitatively conducted a study to explore whether corpora have benefits on learning collocations and what the frequently searched, checked and learnt collocation combinations were. The participants were 27 junior learners majoring at English Translation in the same class a university in Iran with the range of age from 20 to 30 years old. Their level of proficiency was intermediate, and this was decided by the judgment of the five instructors. *Compleat lextutor* (http://www.lextutor.ca/concordancers/) was chosen as a tool because it was more manageable to the learners, and it provided different types of corpora like spoken, learner, law, and medicine based on their own preference so the learners would be able to compare their search in more than one corpus. The data collection began with the introduction of corpus, concordancing and the advantages of its application, and different concordancing tools. The following five weeks covered either individual or group work in the computer lab for the search of collocations they wanted to know as well as the ones assigned by the instructor. Then the learners were asked to conduct a course project by searching their preferable collocation(s), writing results and samples and reporting problems while consulting the corpus through online submission. Lastly, five learners were randomly chosen for the interview to collect more detailed. The researchers found that there was the increase in the participants' awareness of the importance of collocation and collocational knowledge. Moreover, while searching for patterns the participants paid attention not only on forms, but also on meanings. The participants' learning skills such as writing and

reading seemed to gain benefits from this approach. The researchers also discovered that verb+ noun collocations were the most frequently searched pattern. This was in line with Nesselhauf (2005) that verb + noun collocations were likely to be the most problematic collocation due to their arbitrary restrictions and learners' limited exposure to authentic language use.

Chun-guang (2014) investigated the effects of teaching lexical chunks through corpus-based approach on learners' writing and compared the effects among the three groups of learners with three levels of proficiency. The study lasted two years and involved 60 subjects. They were first year learners who shared similar educational background as follows: the number of English learning, no concepts of lexical chunks and corpus, the level of motivation and a positive attitude toward a new language teaching approach and the success of College English Test. From the scores of the pre-test, they were divided into three groups: high, medium and low-level learners. The research employed the following instruments: teaching material, Corpus of Contemporary American English (COCA), writing tasks, interview and questionnaire. The target lexical chunks were from the four textbooks used for the whole period of 2 years. The participants took the pre-test, wrote five writing tests and four post-tests, followed by the interview and the questionnaire. The data analysis involved two English teachers who rated the learners' 300 writing samples, and the samples were annotated to identify the chosen lexical categories. The findings revealed the positive effects of corpus-driven lexical chunks instruction on the learner' language competence. The researcher confirmed that all the three groups significantly used more lexical chunks, and there was a positive relationship between the use of chunks and the writing mark. The limitation the researcher pointed out was the participants were not English majors. Even though they were classified into three groups: high-level, medium-level and low-level, they should be considered as medium-level learners. Therefore the conclusion of the study that the medium-level learners made the best performance in writing may be inaccurate because there were no English majors or advanced English language learners in the study for comparison.

Huang (2014) inspected the effects of paper-based corpus activities on lexico-grammatical use in L2 writing. Forty Chinese participants in this study were learners majoring in English. They were randomly divided into two groups: control and

experimental groups. The instruments used in the study were essay writing and a questionnaire. The data collection included the pre-test, the immediate post-test and the delayed post-test. In the first place, both groups received a list of five target nouns and were asked to write an essay using the given nouns. The writing essays were treated as the data for the pre-test. The following week, the immediate post-test was conducted. The control group learners were allowed to consult dictionaries during writing while the experimental group learners were distributed paper-based concordance lines to study word collocations. Two weeks after the immediate post-test, the participants took the delayed post-test. Finally the essays were rated by two native English teachers, and the data were analyzed. The findings revealed that the essays of the experimental group had a higher diversity of lexical and grammatical collocations and fewer linguistic errors in using the target abstract nouns. The data from the journals and questionnaires revealed the participants' positive attitudes towards the use of corpus on vocabulary learning. The researcher summarized that paper-based corpus activities enabled better noticing, generation of more accurate and complex collocational production and accuracy. Due to the limited period of this research, Huang suggested more longitudinal study be conducted to examine the long term effects of corpus-based activities. Lastly, there were some potential problems during concordance-based activities such as recognition word boundary and difficulties in deciding real collocations. Huang suggested teachers' intervention would help learners solve the problems.



**2.4.3 Previous studies on corpus consultation**

**2.4.3.1 Previous studies on individual corpus consultation**

O'Sullivan and Chambers (2006) conducted a study with 14 English native speakers learning French. The study reported the types of change the learners make while writing in French, the effectiveness of the changes and the learners' reaction. The data was collected from the learners' essays. During the first stage, the participants completed the first draft with the aid of traditional resources such as dictionaries. The learners then were given a three-week period training followed by the actual empirical study during the third stage in which the participants were asked to correct their first draft with the marking in the form of underlying errors. The study

revealed that the participants made 166 changes, and 122 were positive attempts. The majority of positive changes fell into the grammatical group. To be precise, prepositions received the highest positive attempts. According to the data, the researchers found native interference. Although the researchers believed that the direct transfer led to more errors, there was no evidence. The result of this study was similar to that of Yoon and Hirvela (2004) in that the participants from both studies stated that corpus consultation complimented the use of traditional resources. However, the questionnaires showed there was some hesitation to future use of corpora due to external factors and internal factors. While the external factors were related to the availability of corpora and software, the internal factors were from the difficulties encountered by the learners during corpus consultation like coping with the numbers of examples in the concordance output, overwhelming process and appropriate interpretation of the output.

Varley (2009) investigated the attitudes of 19 Chinese learners towards corpus consultation. The participants were asked to carry out the course assignment by using Wordsmith Tools, a famous concordancing software program. They were asked to work on language features characteristic of a range of genres and to write the reflective log. The findings revealed a positive response to corpus consultation and the participants identified the benefits in the areas of vocabulary acquisition and increased awareness of syntactic patterns. The course assignment showed an increased awareness of lexico-grammatical usage, especially the use of vocabulary, phrases and colligational patterns. Like the participants from corpus consultation - based studies, the participants encountered the following problems: overwhelming amount of corpus data, limited access to the concordancing software, and the learners' concern over the accuracy or reliability of corpus.



#### 2.4.3.2 Previous studies on a cooperative corpus consultation

Flowerdew (2008) employed peer response activities to use the corpus data for promoting a contextual writing environment. The findings revealed that group activities of the participants with different language proficiencies enabled co-construction of the learning process of corpus consultation. The group members helped each other, which can be seen as scaffolding. In fact, the less proficient

learners were able to construct knowledge and autonomous learning while more proficient learners exchanged their understanding and interpretations during corpus consultation. The researcher affirmed
the advantages of group work in corpus consultation to assist the weaker learners' productive dialogue.

Cho (2015) scrutinized both advantages and disadvantages of collaborative corpus consultation in L2 instruction. There were three Korean female participants in this study. Despite the same nationality, they were different in terms of age and linguistic proficiency level. The language proficiency of the first participant was lower than that of the second and the third. This was explained that their differences would enable the natural flow of knowledge during the corpus consultation. The research process covered started with an introductory which was designed to elicit the participants' personal information and their knowledge about synonyms. Then there was an introduction to corpus linguistics and how to use the Lextutor, a web-based system for online-corpora and an interview with the participants about their opinions and expectations on the use of online corpora. Next, the participants conducted two tasks. The first one was the collaborative corpus consultation where each learner received a worksheet concerning the target linguistic feature in the study. The second task was a translation task from Korean to English. During this process, each of them could provide different answers. Lastly, there were both group and individual interviews to elicit their attitudes toward the corpus consultation, difficulties during the corpus analysis and their solutions to the problems. The data collection was conducted through video recording and teacher observation notes. The findings revealed two sides of collaborative corpus consultation. While the collaborative corpus consultation positively led to group negotiation and provided direction on the hypothesis testing process, it could increase burden and psychological responsibility of the most capable member and lead to gradual marginalization of the less capable member. Also the corpus consultation in a group could impede significant individual learning opportunities. The researcher suggested any teacher who would like to apply this approach to consider both sides, provide assistance for less capable members and allow individual work.

Cho (2016) qualitatively scrutinized the effects of two tasks in collaborative learning while corpus consulting with six female Korean learners who were different in terms of age, major their TOEIC scores and overseas English exposure. They were classified into two groups: three worked in a Collaborative Group (CG), and the other three worked individually (IG). It is interesting to note that one participant whose TOIEC score was the lowest was classified as one member of CG. Then both groups were asked to conduct two tasks: a conceptual task and a procedural task. The conceptual task required the learners to generalize conclusions based on their conceptual knowledge of English. The procedural task involved problem-solving activities through corpus analysis. The data was collected through a questionnaire, transcripts derived from a video recording, pre and post interviews and the teacher's observation notes. The findings showed that collaboration had different effects on two tasks of corpus consultation. The CG learners performed better in the conceptual corpus consultation task. On the other hand, the IG participants performed the procedural task more effectively while the CG participants took more time and put more effort during the procedural task. The researcher explained that the collaborative corpus enabled the CG participants to co-construct the data analysis process, reaching comprehensive interpretations and that the less capable participant was guided from the two members and acknowledged the necessity of peer assistance. Nonetheless, the collaboration corpus had the side effect of the procedural task on the CG group due to the two factors namely intersubjectivity and the inequality of power. Intersubjectivity refers to sharing of subjective states among members and the intersubjectivity was believed in this study to confine the flexibility of the task management process. The CG participants had to conduct two sub tasks, and the intersubjectivity disabled them to shift their attention between the two sub tasks, forcing them to complete the tasks one at a time. In addition, the inequality between the members discouraged the individuals from personal corpus investigation in the procedural task. The study provided the following suggestions for further studies: longer period of studies, various types of tasks and participants and building a strong sense of community among members.

### 2.4.4 Related research on applications of corpus in Thai contexts

Todd (2001) quantitatively investigated learners' ability to induce valid patterns and whether L2 learners of English at tertiary level were able to apply the patterns inducted to correct their errors in writing. Being asked to write a report and hand in the first draft to the teacher for error coding, 25 Thai post-graduate learners chose one of the marked errors to search on the Internet before they selected 10 concordance lines and induced patterns for error correction. The study revealed the positive results indicating the participants were able to induce valid patterns from their own concordance and made valid self-correction. It is interesting to note that the participants worked on only the small amount of concordance lines (10 selected lines). The benefit was they did not get confused and demotivated about the excessive amount of data, but the ability to induce patterns might be questioned. The study also showed that induction and self-correction were likely to occur together, and induction and self-correction were possibly affected by several factors such as the part of speech of the lexical items, effects of number of parts of speech, the number of patterns of usage and the number of meanings.

The study conducted by Sripicharn (2003) conducted a study about classroom concordancing using both qualitative and quantitative methods in three aspects: the learning effect of classroom concordancing, learners' attitudes towards concordance-based materials and the learners' performance when using concordancing. The participants whose language proficiency was upper-intermediate were divided into two groups: the experimental group and control group. Unlike previous studies, classroom concordancing had no noticeable effects on the learners' ability and language points taught in the materials. The researcher provided the following explanations. First, the scores of pre-test indicated that both groups obtained high scores hence it was unlikely that their post-test scores would be considerably different. Secondly the amount of corpus exposure was limited. Moreover, the content of concordance-based units was diverse compared with the previous studies whose results were positive. The last factor might be cultural factors. In fact, the non-concordance group learners were familiar with deductive learning or teacher-fronted grammar lessons whereas the concordance group had very little exposure to inductive learning, and there were given no training and the limited exposure. What was

concluded from this study was that learners with high language proficiency might not take advantages from corpus consultation, and corpus and concondance lines were beneficial for drawing learners' attention to words in contexts like collocations and language patterns.

Tasanameelarp and Laohawiriyanon (2010) conducted a study with 37 Thai learners to pinpoint the process, patterns and strategies so as to provide them some recommendations for effective future use. The researchers also investigated if the learners with a lower language proficiency of English took advantage from corpus consultation. The research was divided into three periods: the introductory, the experimental and the post experimental period. The first period provided training on how to induce language patterns from concordance lines and how to apply the rules to correct the errors in the given sentences. During the second period, three tasks containing five types of error were given before the stimulated recall interviews in the third period. However, the researchers did not provide the explanation about the rationale behind the five types of errors. The teachers' notes and questionnaires were grouped according to themes and summarized in percentages. The finding revealed the learners outperformed in correcting the errors resulting from subject-verb agreement, articles and nouns, but they could correct the errors relating to prepositions and verbs the least successfully. The researchers also concluded four factors that affected the learners' strategies: prior grammatical knowledge, corpora size and corpora selection, unfamiliarity with inductive learning, and motivation. To begin with, dealing with concordance, most of them relied upon their prior knowledge and intuition in selecting key words in which they believed were accurate, but they were not helpful. Later the consultation with corpus turned out to be unsuccessful. The researchers stated that the unsuccessful process might lead to demotivation. Concerning the choice of their corpus, the biggest size of corpus was chosen in order that they would receive many concordance lines to work on. The third factor from the teachers' observation was the unfamiliarity with inductive learning. Lastly, dealing with a great number of authentic texts in the form of concordance lines without guidance and teacher's intervention might lead to confusion and demotivation.

### 2.4.5 Related research on corpus strategies

Corpus strategies are strategies ones employ when consulting a corpus. The following studies were conducted to examine what strategies learners employ during corpus consultation.

Kennedy and Miceli (2001) conducted a study with 10 learners learning Italian. Kennedy and Miceli approached the learners' corpus investigation as a four-step process. The first step was when the learners formed questions aiming at the kind of information obtained from the corpus. The second one was to invent a search strategy; for instance choosing a word to look for and making a decision concerning other options (classifying examples or consulting a dictionary). The third step was to observe the examples and select relevant ones. The last step was drawing conclusion. The researchers discovered that the learners' corpus investigation did not exactly follow this order. The learners sometimes conducted a search for the given word without forming questions because they had no clear question before a search. The researchers made the suggestion that appropriate research habits such as observation and logical reasoning should be promoted as well as corpus searching techniques.

Sun (2003) analyzed the corpus learning process and strategies from three Taiwanese learners in the web-based concordance. The data gained from the think-aloud protocol revealed the following four factors influencing learners' learning process and strategies prior knowledge, teacher intervention, cognitive skills and concordancer skills. The cognitive skills covered four skills as follows: comparing, grouping, differentiating and making inferences while the concrodancer skills consisted of three skills: function choice, word selection and corpus selection.

Sripicharn (2004) investigated the learning process and strategies used during concordance-based activities. He compared the strategies employed by six non-native speakers of English who were Thai undergraduates to those used by six native speakers of English who were also undergraduates. The findings showed that although both groups were able to handle the concordance-based tasks and make useful and sophisticated generalizations, the non-native group exhibited greater awareness of the context. Moreover, the non-native learners showed two data driven learning strategies. The first one was spotting context clues and making a generalization and the second one was forming and testing hypotheses. On the other hand, the native

group was likely to rely on their intuitive knowledge and cultural or pragmatic aspects of the target language.

Tasanameelarp and Laohawiriyanon (2010) conducted a study with 37 Thai learners to pinpoint the process, patterns and strategies. The strategies used in this study were divided into three groups.

Group 1: The strategies used to cope with a number of concordance lines consisted of four skills: asking their peers or teacher, ignoring the concordance, looking at the relevant information and searching for concordances in smaller corpora.

Group 2: The strategies related to concordance observation: observing the right and left words of the keywords, reading only the short and easy concordance lines, reading all the concordance lines presented and clicking the underlined keywords to read the full sentences.

Group 3: The strategies related to choosing the concordance lines: choosing the lines which matched the rules in their minds, choosing the most frequent lines, choosing the lines that were helpful for pattern induction, choosing the lines that shared a similar context to their tasks and choosing the first five lines of the concordance lines.

Although the results of each study on the strategies were not the same, there were some similarities. It can be concluded that the corpus strategies that are frequently found in the previous studies can be categorized into observing, drawing a conclusion and making a generalization.



The study was distinctive from previous studies in the following aspects. Firstly, it had a different aspect of approaching corpus consultation. In previous studies in Thai classroom contexts (Sripicharn, 2003; Tasanameelarp & Laohawiriyanon, 2010; Todd, 2001), the participants individually consulted the corpus. The participants had to deal with various problems such as long period of searching time, an excessive number of concordance lines and the unfamiliarity with the inductive learning. In contrast, in this study the participants would be assigned to work in a group. Working in a group might facilitate the searching process and it might enable individual learners to learn from each other while consulting corpora. Secondly, the study focused on grammatical collocation pattern in particular the

pattern of adjective + preposition collocations. The pattern has been less investigated. Moreover, the researcher would investigate both aspects of collocation acquisition namely perception and production. Lastly, unlike previous studies which focuses on either paper-based or online materials (Sripicharn, 2003; Tasanameelarp & Laohawiriyanon, 2010; Todd, 2001), the study had a combination of paper- based concordance materials and hands-on concordance based tasks.

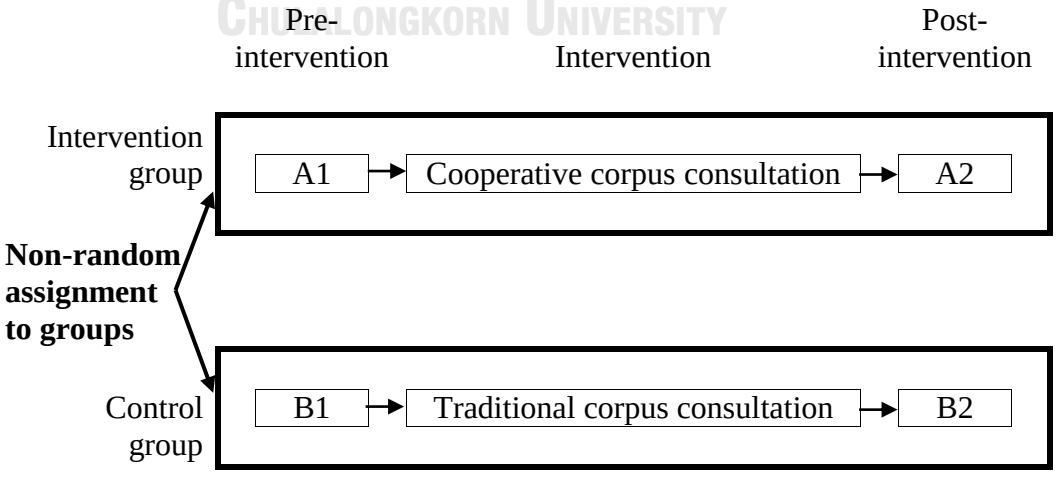
# CHAPTER III
# METHODOLOGY

This chapter describes the methodology used in the study. This chapter covers seven sections as follows. The research design is described in 3.1. Secondly, the participants in this study are described in 3.2. Then, the word selection and the instruments are outlined in 3.3 and 3.4, respectively. The data collection is provided in 3.5. Lastly, the data analysis and the pilot study are described in 3.6 and 3.7, respectively.

## 3.1 Research design

The study employed a quasi-experimental design using a pre-test and a post-test. Three were two groups experimental research: experimental group and control group. After both groups were given a pre-test (A1 for the experimental group and B1 for the control group), the experimental group received a new intervention which was a cooperative corpus consultation while the control group received a traditional treatment which was a traditional corpus consultation. After the treatment, a post-test was given to both groups (A2 for the experimental group and B2 or the control group) as shown in Figure 1.

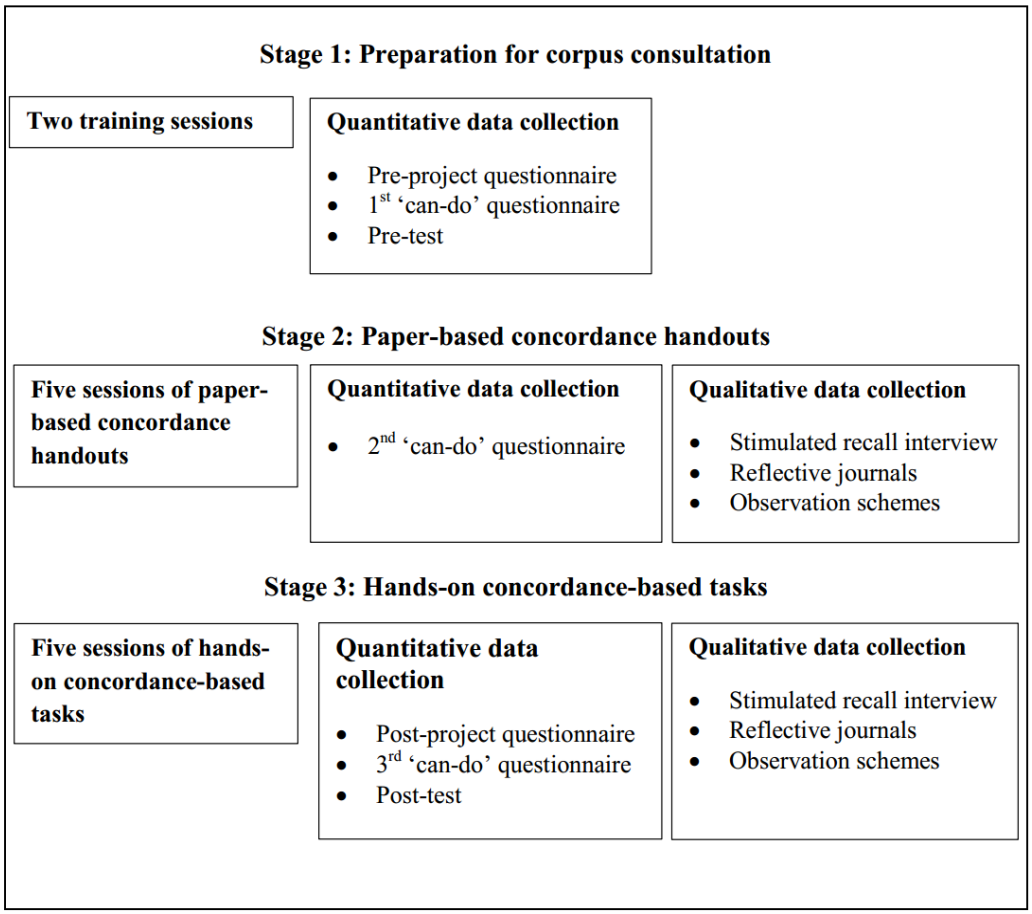
Figure 1: Research design




A1, B1 = Pre-intervention data collection
A2, B2 = Post-intervention data collection

The study employed mixed - methods research design, a combination of the quantitative method (a pre-test and post-test and survey research using pre and post-project questionnaires as well as a 'can-do' statement questionnaire) and the qualitative method (content analysis of stimulated recalls, reflective journals and observation schemes as shown in Figure 2.

Figure 2 : Data collection




The research design of this study was divided into 3 stages: preparation stage, the paper-based concordance-handouts, and the hands-on concordance-based task stage. Each stage is described as follows.

Stage 1: The preparation stage began with two training sessions in order to prepare the learners from both groups for the corpus consultation process. In this stage, the quantitative data on the learners' demographic information, educational

background, English exposure in other countries, computer literacy skills as well as background knowledge on corpus and concordance was collected using the pre-project questionnaire. In addition, the pre-test was administered in order to examine the learners' level of perception and production of acquisition of adjective + preposition collocations. Also, the baseline and current level of corpus strategies and cooperative strategies was obtained using the 'can-do' statement questionnaire.

Stage 2: The paper-based concordance-handout stage lasted for five weeks. During this stage, the learners in the control group were given the paper-based concordance-handouts and worked on them individually. On the other hand, the learners in the experimental group formed a group of four and completed the same tasks, with the peer and teacher scaffolding. The teacher's scaffolding was on technical problems and the task clarification while the learners were encouraged to discuss with their teammates when they needed linguistic support. The teacher's linguistic support could be given upon request. During this stage, the data on the strategies the learners used during the cooperative corpus consultation process was qualitatively collected using classroom observation schemes, learners' reflective journals, and stimulated recalls. At the end of this stage, the level of corpus strategies and cooperative strategies were obtained using the same 'can-do' statement questionnaire.

Stage 3: The hands-on concordance-based task stage also lasted for five weeks and was similar to the previous one. However, the learners worked on the hands-on concordance-based tasks. The data collection process remained the same. The data on the strategies the learners used during the cooperative corpus consultation process was qualitatively collected using classroom observation schemes, learners' reflective journal, and stimulated recall. At the end of the treatment, there were two quantitative data sources from the post-test and the post-project questionnaire.



### 3.2 Participants

The subjects were 74 first year learners from the Faculty of Humanities and Social Sciences of Srinakharinwirote University, Bangkok. Their English exposure before entering the university has been through the Thai educational system. They

were selected with a purposive sampling method because they had already been assigned into the course SWU 123 (English for International Communication I) and SWU 124 (English for International Communication II) offered in the first and second semester in the academic year 2016 as seen in Table 1 below. The two groups were obtained according to the availability of the classes. According to Srinakharinwirot University Registration Office, first year learners are classified into two groups: low English proficiency and high English proficiency based on their English scores from ONET (Ordinary National Educational Test). ONET is a test organized by the National Institute of Education Testing Service (NIETS). The test has been used since 2006 and undergone the validation process. Concerning the cut off score specification, Srinakharinwirot University Registration Office cuts the score at 55 out of 100 marks. Any learner whose score is higher than 55 marks is considered as high proficiency learners. For those whose score is lower than 55 marks are considered as low proficiency learners. The learners for this study were considered as the high proficient learners. While one group was assigned to be an experimental group, the other was assigned to be a control group with the number of 36 and 38, respectively.

The learners' language proficiency was taken into account because of the following two reasons. Firstly, a cooperative corpus consultation might be too challenging for lower proficient learners since learners needed to explore authentic language samples and make an observation before joining discussion with their teammates. Moreover, each learner had his or her role to take as part of a group. Secondly, the duration of a cooperative corpus consultation lasting for 50 minutes might be too short for lower proficient learners to complete the whole process of corpus consultation as well as cooperative learning.

Table 1: Classification of new learners of Srinakharinwirot University to be enrolled in English fundamental courses

| **ONET scores (full score: 100)** | **Proficiency** | **Courses to be enrolled for a whole academic year** |
|---|---|---|
| 55 and more | High proficiency learners | First Semester: SWU 123 |
| | | Second Semester: SWU 124 |
| Less than 55 marks | Low proficiency learners | First Semester: SWU 121 |
| | | Second Semester: SWU 122 |

In addition, six learners from the experimental group were selected using purposive sampling to join the stimulated recall sessions. They were selected according to the scores of the pre-test: two people who received the highest scores, two people who received the lowest scores and the other two whose scores were closest to the mean scores.

The demographic information of the samples was collected from the pre-project questionnaire (see Appendix B) administered at the beginning of the study. The questionnaire covered three parts: the general information, the educational background concerning English education and computer literacy skills as well as background knowledge on corpus and concordance. The demographic data of the learners is presented in Table 2 below.

Table 2: The demographic information of the learners

| **Information from the Pre-project Questionnaire** | **Percent %** |
|---|---|
| General Information | |
| - Average age | 19 years old |
| - Gender | Female = 76%<br>Male =24% |
| - Faculty | the Faculty of Humanities, SWU |
| Background of learning English | |
| - Years of learning English | More than 12 years (77%)<br>Less than 12 years (19%)<br>7-9 years (4%) |
| - Experience in studying English abroad | 0% |
| - Preference of English | Much (51%)<br>Very much (27%)<br>Moderately (22%) |
| - Self-perception of English proficiency | Average (70%)<br>Fair (21%)<br>Good (5%)<br>Poor (4%) |
| Computer skills and previous experience of using a corpus | |
| - The possession of technological tools | 96% |
| - Basic computer skill | Good (48%)<br>Average (43%)<br>Poor (4%) |
| - The use of technological tools in learning English | 97% |
| - Prior experience about corpus and concondance lines | 0% |

### 3.2.1 Personal information

In general, all the learners were from the same faculty, and they were similar in terms of age. The average age of the learners was 19 years old. Approximately 24% of the learners were male while approximately 76% of them were female.

### 3.2.2 Background of learning English

Concerning the English educational background, there were more than 75% of the learners who have been learning English for more than 12 years. While 19% of the learners have been taught English for less than 12 years, only 4% of the learners have been studying English for about 7- 9 years. They all had no English learning experience abroad. Approximately 50% of the learners preferred learning English much. While 27% liked this language very much, approximately 20% liked it moderately. Despite their preference in English, only 5% of them rated their proficiency as good and 4% judged it as poor ability. The majority of the learners, 70%, considered their proficiency as average while 21% rated it as fair.

### 3.2.3 Computer skills and previous experience of using a corpus

It was found that nearly all of the learners own at least one of the electronic devices, but only 4% of them had no electronic devices. When asked to rate their own computer skills, nearly half of the learners were confident in their computer skills while 43% thought their computer skills were average. Nearly 100 % of them used electronic devices in learning English for the following reasons: searching word definitions, translation, online learning, and reading E-books. Lastly, none of the learners heard of corpus and concordance lines before.



## 3.3 Word selection

According to Benson et al. (1997), collocations can be divided into two types: grammatical collocations and lexical collocations. The present study focused solely on one type of grammatical collocations, namely the pattern of adjective + preposition collocations. Due to a large number of adjective + preposition collocations, the researcher used the following criteria and steps for collocation selection.

The first step was to list a group of adjectives and check the level of the adjectives based on the Common European Framework of Reference for Languages:

Learning, Teaching, Assessment (CEFR). This is because Thai Ministry of Education has set English proficiency targets for Thai learners according to CEFR whose descriptors range from A1to C2. Each level describes what language learners from each level should learn and what knowledge and skills they have to develop. For example, learners should reach B1 by the end of Mathayom 6 (Grade 12). Since the learners in this study were first-year university learners in one Thai university, the researcher based the level of the adjectives from A1to B2. The adjectives were checked with Cambridge online dictionary (http*://dictionary.cambridge.org/dictionary/english/*), whose collections of words are compared to the Common European Framework of Reference for Languages: Learning, Teaching, Assessment (CEFR). Although some adjectives may have been encountered by learners, it tends to be seen as single-word lexical items. According to Henriksen (2013), collocations are less recurrent than several single-word lexical items that constitute collocations. As a result, learners might have a problem from the process of forging and strengthening associative links between the constituents in the collocation. In this study, the learners might have encountered the "adjective "constituent, but they might have a problem from choosing prepositional collocates.

The second step was to investigate prepositional collocates for each adjective and conducted an analysis. From the analysis, the adjective + preposition collocations revealed two groups: adjectives with restricted prepositional collocations such as " allergic to" , " aware of" and " capable of" and those adjectives with various collocates such as " bored with", "bored of" or "careful with", "careful of" and "careful for". Only those adjectives with various collocates were chosen. They then were categorized into two groups: Group 1 collocations refer to a combination of adjective + preposition collocations whose meaning will not change regardless the different prepositional collocate while Group 2 collocations mean a combination of adjective + preposition collocations whose meanings vary according to the prepositional collocates.

Lastly, the number of concordance lines from the Brigham Young University (BYU) Corpus of Contemporary American English (COCA) of each collocational pair was checked. The number of concordance lines was used as a frequency criterion. By typing both adjective and preposition in the SEARCH STRING option, the researcher

used this function in order to find the frequency of concordance lines of each collocation. For example, when typing “amazed at” and “amazed by”, the researcher found that the number of concordance lines of “amazed at” (1172) was higher than “amazed by” (518). The researcher then categorized both G1 and G2 collocations into two groups: more frequent and less frequent adjective + preposition collocations. Group 1 and Group 2 collocations with their more and less frequent prepositional collocates are presented in alphabetical order in Table 3 and Table 4.

Table 3: Group 1 collocations: a combination of adjective + preposition collocations whose meaning will not change regardless the different prepositional collocate.

| **Adjectives** | **More frequent collocational prep** | **The number of concordance lines from COCA** | **Less frequent collocational prep** | **The number of concordance lines from COCA** |
|---|---|---|---|---|
| annoyed | by | 327 | at | 274 |
| amazed | at | 1172 | by | 518 |
| disappointed | by | 558 | at | 186 |
| excited | by | 741 | at | 141 |
| furious | at | 383 | over | 61 |
| puzzled | by | 462 | at | 65 |
| surprised | by | 3118 | at | 2280 |
| shocked | by | 1167 | at | 630 |
| slow | in | 432 | at | 114 |
| upset | by | 673 | over | 228 |

Table 4: Group 2 collocations: a combination of adjective + preposition collocations whose meanings vary according to the prepositional collocates.

| Adjectives | More frequent collocational prep | The number of concordance lines from COCA | Less frequent collocational prep | The number of concordance lines from COCA |
|---|---|---|---|---|
| clear | of | 57 | on | 5 |
| free | to | 1696 | from | 972 |
| frightened | of | 440 | for | 28 |
| generous | with | 330 | of | 112 |
| grateful | for | 2689 | to | 2358 |
| good | to | 16592 | with | 1483 |
| immune | to | 1384 | from | 503 |
| punished | for | 711 | with | 70 |
| sick | of | 2339 | at | 225 |
| wrong | with | 1664 | for | 172 |

The collocational word list then was verified for its content validity using the Index of Item-Objective Congruence (IOC). Each collocational pair was rated by three native speakers of English who are English teachers to decide if the prepositional collocates in Group 1 convey the same meaning and those in Group 2 convey the different meanings. The three experts gave one point, if each pair was congruent; zero point if the item could be judged as either congruent or incongruent and any item that was incongruent was rated minus one point. Then the total scores were calculated. The average IOC scores of Group 1 and Group 2 were 1 and 0.967, respectively, leading to an IOC overall score of 0.983. The IOC scores of each item are provided in Appendix A.

### 3.4 Instruments

This section is divided into two parts. The description of corpus-based materials and activities which cover the training materials and activities, concordance-based tasks, the selected corpus used in the study, the strategies employed during the

corpus consultation as well as the teacher's and the learners' roles is provided in 3.4.1. Then details about research instruments are outlined in 3.4.2.

### 3.4.1 Corpus-based materials and activities

The implementation of both corpus-based instruction and a cooperative corpus consultation was used as a supplementary of the course called SWU 123. The materials and activities aimed at developing the learners' skills necessary for a corpus consultation.

#### 3.4.1.1 Training materials and activities

The training was divided into two sessions: Training Session 1 and Training Session 2. To begin with, Training Session 1 was to prepare the learners for collocation learning, raising the collocational awareness and introducing useful learning resources in assisting collocation learning. The learners were given a short lecture on five types of grammatical collocations based on those of Benson et al. (1997) as follows:

1. Noun + preposition e.g. "emphasis on" and "interest in"
2. Preposition + noun e.g. "by accident" and "in advance"
3. Adjective + preposition e.g. "fond of "children and "interested in" cooking.
4. Adjective + to – infinitive e.g. it is "necessary to rest "and "it is important to study English"
5. Adjective + that– clause e.g. she was "afraid that she would fail" and "he was scared that he would enter a cave alone."



The criterion for choosing the five types was that each type was related to either adjectives or prepositions which the learners would find in the focused collocational patterns. Later, both groups were introduced what a corpus was, what concordance lines were and how to make use of the concordance lines. Moreover, an introduction to using COCA, which was the corpus used in the study, was shown through YouTube and explained in class. Lastly, the five corpus strategies were demonstrated for both groups.

Some previous studies summarized necessary corpus strategies as follows. Sun (2003) identified two groups of skills: cognitive skills and concordancer skills. The

cognitive skills covered comparing, grouping, differentiating and making inferences. The concordancer skills consisted of function choice, word selection and corpus selection. In addition, Sripicharn (2004) found two strategies employed among Thai undergraduates. The first strategy was spotting context clues and making a generalization. The second strategy was forming and testing hypotheses. Tasanameelarp and Laohawiriyanon (2010) conducted a study to pinpoint the process, patterns and strategies. They divided the strategies into three groups.

Group 1: The strategies used to cope with a number of concordance lines consisting of four skills: asking their peers or teacher, ignoring the concordance, looking at the relevant information and searching for concordances in smaller corpora.

Group 2: The strategies related to concordance observation: observing the right and left words of the keywords, reading only the short and easy concordance lines, reading all the concordance lines presented and clicking the underlined keywords to read the full sentences.

Group 3: The strategies related to choosing the concordance lines: choosing the lines which matched the rules in their minds, choosing the most frequent lines, choosing the lines that were helpful for pattern induction, choosing the lines that shared a similar context to their tasks and choosing the first five lines of the concordance lines.

It can be concluded that the corpus strategies are related to the learners' learning process and strategies. The corpus strategies that are frequently found in the previous studies can be categorized into observing, drawing a conclusion and making a generalization.



In this study, the five corpus strategies were developed based on Sun's (2003) cognitive skills because there were some similarities between Sun's (2003) descriptions of cognitive skills and the process of the corpus consultation. The five strategies are as follows. First, *observing strategy* can be observing the right and left words of the keywords or observing the frequent occurrences of prepositional collocates. Second, *comparing strategy* refers to finding similarities. For example, upon comparing the concordance lines for the target adjective "tired", the target learners see the similarities of the nouns co-occurring with the target adjective such as "journey" and "trip". Third, *differentiating strategy* refers to finding differences. For

instance, during corpus consulting the concordance lines for the target adjective "sick", the learners are able to differentiate the following sentences from the co-texts as in (1).

(1)

- After the long flight, Judy was not **sick at** all.
- Mary ate a lot, so she felt **sick at** her stomach.
- Tony is **sick at** not getting a job.

Fourth, *grouping strategy* can be collecting concordance lines in terms of similar or different meanings or co-texts. Finally, *generalizing strategy* refers to the learners generalize the collocation patterns from the concordance lines. These five corpus strategies are the strategies which the learners possibly employ during the cooperative corpus consultation.

Training Session 2 covered two parts: a corpus exercise in the form of the paper-based handout and the cooperative strategies. The training was mainly to prepare the learners to work on a corpus exercise and to apply the five corpus strategies. Moreover, during this training, the experimental group learners were informed to form a group of four members and were allowed to choose their team members based on their willingness to work together. Later, the experimental group was given an explanation about a cooperative corpus consultation such as roles and duties.



The cooperative strategies were the strategies the learners employed in their group in order to complete the concordance-based tasks. The cooperative strategies in this study were based on Johnson et al.'s five elements (2014). The strategies include positive interdependence, individual accountability, promotive interaction, appropriate use of social skills and group processing as follows.

Element 1: Positive interdependence refers to the learners' perception that they are linked with their team members. Each individual's success cannot be achieved without other members' success. Therefore, the learners need to rely on one another to complete the tasks.

Element 2: Individual accountability means each learner in a team doing their part to complete the tasks. As a result, the researcher provided the following roles and functions: a facilitator, a secretary, a strategy recorder and a collocation recorder. The roles were voluntarily exchanged among the team members.

- The group facilitator should provide task directions for the group, come up with the groups' consensus after the cooperative corpus consultation and make sure that each member' voice is heard.
- The collocation recorder should keep a record of the team's ideas covering collocational patterns and linguistic solutions.
- The strategy recorder should keep a record concerning the strategies the group uses by completing a strategy checklist. Moreover, he or she should manage the time and make sure that the group could complete the tasks before the end of the class.
- The secretary should handle both the paper-based concordance handouts and the hands-concordance-based tasks. After each group comes to a consensus, he or she should write down their answers.

Element 3: Promotive interaction refers to verbal support occurring in a group such as explaining how to solve problems, discussing the concepts and requiring the team members to provide reasons and conclusions.

Element 4: Appropriate use of social skills refers to conditions where group members develop and practice leadership, trust building, communication, decision-making and conflict management.

Finally, Element 5: Group processing refers to the learners' assessment of their groups' goal of completing the tasks as well as their assessment of the other team members.

Since the experimental group needed to work cooperatively, they were encouraged to sit in a group where a secretary of each group took care of the handouts. When working on the hands-on concordance-based tasks, each group was given one computer to work together. This was to promote positive interdependence and individual accountability in order that the learners could observe both the corpus strategies and social skills from their team members.

#### 3.4.1.2 Teacher's roles

For both groups, the researcher took the role of a facilitator who provided scaffolding prompts at various stages as follows. Before the cooperative corpus consultation, the teacher made a number of pre-instructional decisions as follows: the size of groups, the method of assigning learners to groups, the roles learners would be assigned, and the design of materials. During the two training sessions, the teacher provided description of a corpus consultation which involved search process and identified collocations and wrong use of collocations. During the cooperative corpus consultation, the teacher explained the tasks to the learners in both control and experimental groups. When needed, the teacher assisted both groups in completing the task. Moreover, the instructor monitored if the experimental group learners understood the four roles and worked together effectively. The teacher also observed and collected data on the verbal protocol learners during the cooperative corpus consultation. After the cooperative corpus consultation, the teacher conducted the classroom discussion in both groups where the learners and the instructor shared the findings from the corpus consultation.

#### 3.4.1.3 Concordance-based tasks

The concordance-based tasks can be divided into two types: paper-based concordance handouts and hands-on concordance-based tasks. The paper-based concordance handouts were the materials containing both the instructions and the pre-selected concordance lines while the hands-on concordance-based tasks provided only the instructions (see Appendix C). The paper-based concordance handouts were first employed during Weeks 3-6 before the online tasks since the concordance lines could be checked to prevent confusion or being overwhelmed by the large amount of the data. Then the hands-on corpus activities were used from Week 8 until the end of the treatment (see Appendix D).



##### 3.4.1.3.1 Paper-based concordance handouts

The paper-based concordance handouts were constructed from the first 5 adjectives from Group 1 collocations and the first 5 from Group 2 collocations as follows.

Table 5: The adjectives used in constructing the paper-based concordance handouts

| **Collocations** | **The used adjectives** | | | | |
|---|---|---|---|---|---|
| **Lesson** | **1** | **2** | **3** | **4** | **5** |
| **Group 1** | annoyed | amazed | disappointed | excited | furious |
| **Group 2** | clear | free | frightened | generous | grateful |

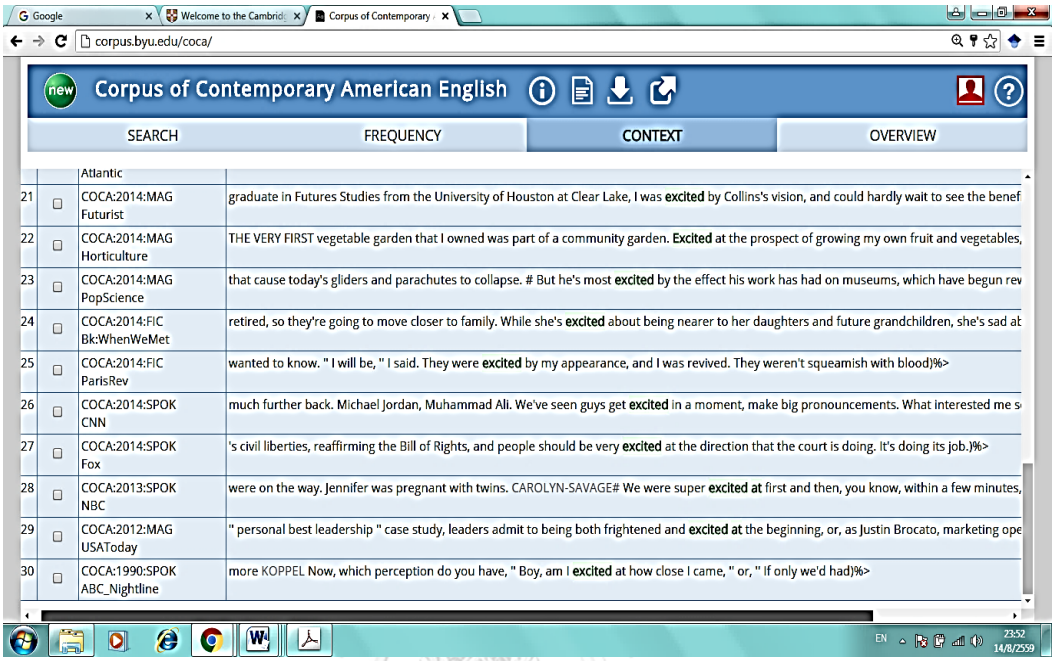
The paper-based concordance handouts contained two parts: the task instructions and two sets of the pre-selected concordance lines where Set A provided 30 concordance lines of Group 1 collocations, and Set B offered the other 30 concordance lines of Group 2 collocations. The task instructions covered 4 to 6 sub-tasks and some of the tasks in the paper-based concordance handouts are as follows.

- **The identification of the target collocational pattern:** This task used in Task 1 required the learners to observe the target collocations as well as the following nouns and compare the following nouns so that they could identify the target collocational patterns as shown in (2).

(2)

Activity 1 (Task 4)

Cross out the sentences that do not contain adjective + preposition collocations.




Retrieved from https://corpus.byu.edu/coca/

- **Sorting task**: The task was designed to promote the use of four corpus strategies: observing, comparing, differentiating and grouping. The task required the learners to observe the target collocation from the given concordance lines, compare and differentiate the meanings of the 30 concordance lines of set A and select those lines that conveyed the similar meaning as seen in (3).

(3)

Activity 1 (Task 3)

Find the concordance lines in **Set A** that are similar to the sentence below in terms of collocational meaning.

I was **amazed** **about** the evidence the police collected, the documentation they did.

Write down the number of the concordance lines

- **Task with discussion questions**: The learners were asked to find the prepositions that could be used instead of the preposition “about” from the given concordance lines before generalizing the collocation pattern. In fact, the task below (4) involved the use of five strategies, ranging from observing the use of other prepositions that could be similar to the given preposition, comparing and differentiating the nouns following each preposition, grouping the lines and generalizing the possible patterns.

(4)

Activity 2 (Task 3)

According to the concordance lines in **Set A**, what are the possible prepositions that can replace “disappointed about”? What are the collocational patterns of the adjective “disappointed”?

- **Gap-Filling task:** The learners were required to generalize the collocational pattern so this task provided them the opportunity to test their hypothesis by choosing the prepositions to fill in the gaps shown in (5).

(5)



Activity 3 (Task 5):

Find the missing prepositions for the given sentences.

A. " I'm grateful _____ the ride home and for the help at the Roberts.
B. They are grateful _____the Nursing Practice Committee for the wealth of information
C. She laughed, grateful _____ Ron’s ability to make her do so on a day like this.
D. I am deeply grateful _____ the staff of all three institutions for their unstinting support.
E. The authors are grateful _____ the Library Resources and Technical Services reviewers and the editor for their very helpful.

- **Error identification and error correction task:** This task was similar to the GJT where the learners were presented both the right and the wrong use of the target collocations. To be able to choose the wrong concordance lines, they needed to consult the given concordance lines before making a judgment.

(6)

Activity 2 (Task 4)

Which of the following sentences contain wrong use of collocations? Please correct them.

1. Good therapists are **excited** by each new client, and learn something from them
2. The child was hot, tired, and **excited** in the unusual sights.
3. I was surprised Cameron was able to keep the secret. He was so **excited** to the wedding.
4. no one is likely to get **excited** by your product or service in a declining industry.
5. He's very **excited** to have a daughter, and he spends a lot of time with her.
6. I'm so **excited** at this whole experience. It's going to be so much fun.
7. " I have to continue to get better.... I'm just **excited** in the progression of improvement that happens throughout it. "
8. " Louis is happy and very **excited** with becoming a dad.



**3.4.1.3.2 Conduct of the cooperative corpus consultation of paper- based concordance handouts**

To begin with, a cooperative corpus consultation started with a presentation of target adjectives. The teacher presented two target adjectives of each week on the screen to call the learners' attention to the target words before distributing the handouts. Then, sitting in a circle, each group received the paper-based concordance handouts, two sets of pre-selected concordance lines and the strategy checklist before starting a cooperative corpus consultation.

The sample of lesson of this paper-based concordance handout was from Week 1 (see Appendix C). The description of each activity is described as follows.

Activity 1 as in (7) was to raise the learners' collocational awareness of the target collocations. The task required the learners to cross out the concordance lines that did not contain adjective + preposition collocations. To do this, the learners applied the knowledge from the trainings to identify whether the given sentences contained the target collocations or not. The learners needed to explore the given concordance lines to compare what they were trained and what they discovered from the handouts by comparing the concordance lines and discussing with their teammates and made a decision to cross the lines. This step might be classified as the first step of "Identify" of data driven learning since they were stimulated to identify the constituents of the target collocations.

(7)

1. Cross out the concordance lines that do not contain adjective + preposition collocations.

1. she wouldn't be half as annoyed, probably not **annoyed** at all. Toward her quirky younger sister Daisy felt nothing.
2. Jordan cut Racine an irritated glance, and **annoyed** at being ignored, she finally moved on.
3. I like to get the most value out of the items I buy and get **annoyed** when I have to upgrade or replace a product that should be working fine.
4. Insisting that he leave them in peace. # He'd only been vaguely **annoyed** at first. He didn't trust the cunning Chatri as far as he could.
5. Though I was sometimes **annoyed** by my sister's habit of abruptly dropping one topic and taking up another.
6. but I could tell she was **annoyed** at my answer. By the way she clacked the scalpel down on the steel.
7. The lighthouse keeper, **annoyed** at this distraction, tells him to be off and then turns his back on.
8. She tugged on his hold, definitely **annoyed** by now. " Listen, " she began, but he wasn't listening.
9. I think many people have been **annoyed** by the advertising and found it very suspicious.
10. I get easily awakened by noise, " " I am **annoyed** by loud traffic.

Activity 2 as in (8) was to promote the comparison of the rest of the concordance lines to find similarities and differences in terms of collocational meanings before grouping the concordance lines that were similar.

(8)

2. Do the rest of the concordance lines convey the same meaning? Which concordance lines convey the same meaning?

Activity 3 as in (9) was to investigate whether the change of various prepositions had an effect on the adjective “annoyed” or not. To answer this question, the group worked on the given concordance lines in Set A, where there were 30 pre-selected lines. This activity was to promote the comparison of the target prepositional collocates “at” and “by” with larger quantity of the data. In fact, Activities 2 and 3 might be considered as the “Classify “of data-driven learning with the focus on similarities of meanings despite different prepositions.

(9)

3. According to the concordance lines in **SET A**, do the prepositions “at” and “by” affect the meaning of the adjective “annoyed”? What are the collocational patterns of the adjective “annoyed”?



While the first three activities focused on G1 collocations, the last three activities were designed for G2 collocations.

Activity 4 as in (10) drew the learners’ attention to set B concordance lines. The group was asked to group the provided concordance lines into 2 sets by selecting at least 5 sentences. This activity was to increase the learners’ awareness about different prepositional collocates with different meanings. To be able to do so, the group had to explore the lines and classify them. With the pre-selected concordance

lines and the instruction of this activity, the learners could not group the collocationl patterns fewer than 5 lines.

(10)

4. Classify the concordance lines in **Set B** into at least 2 groups in terms of collocational meaning. Each group needs at least 5 sentences. Write down the number of the concordance lines.

Group 1 ……..……..

Group 2 ……..

Activity 5 as in (11) encouraged the group to further their exploration from Activity 4 by comparing and differentiating the meanings of the lines within the set and between the sets.

(11)

5. According to your classification, compare the meanings of both sets and explain them.

Group 1 ……

Group 2 ……..,



Activity 6 as in (12) was to provide an opportunity to generalize the target collocations. This activity combined all the three steps “Identify”, “Classify” and “Generalize” since the group was asked to explore the concordance lines in set B and answer whether the prepositions affected the meaning of the adjective “clear” and what the collocational patterns of the adjective “clear” were. At this stage, the teacher made a clarification about collocational patterns so that each group was guided into the right direction. Moreover, the class was informed that the answers should be a consensus among the team members in their group.

(12)

6. According to the concordance lines in **SET B,** do the prepositions affect the meaning of the adjective “clear”? What are the collocational patterns of the adjective “clear”?

……..,

……..,

During the cooperative corpus consultation, the teacher would provide help when asked. In terms of cooperative working, the teacher monitored whether each group understood and performed their assigned role effectively. For example, the teacher urged the strategy recorder to monitor their peers’ corpus strategy application and the time left for completing the group’s tasks. The teacher monitored the facilitator if she or he led their group into the right direction of task completion. The collocation recorder took a note about the collocations derived from the discussion. When asked for linguistic help, the teacher avoided giving out answers immediately, but the teacher generated a small discussion with the group and elicited the learners to share their opinions and solutions so that the learners in the group observed one another.

At the end of the cooperative corpus consultation, the group secretary wrote down the names of the members with the assigned role on the handouts as in (13) before handing in the handouts to the teacher. At the end of the learning process, the class discussion was conducted by the teacher. During the class discussion, each group was encouraged to share the group’s findings and provide justification.



(13)

Group members/ Roles

1…… Role ……

2…… Role …….

3…… Role ……

4…… Role ……

#### 3.4.1.3.3 Hands-on concordance-based tasks

Like the paper-based concordance handouts, the hands-on concordance-based tasks were constructed from the other 5 adjectives from Group 1 collocations and the other 5 from Group 2 collocations as follows.

Table 6: The adjectives used in constructing the hands-on concordance-based tasks

| **Collocations** | **The used adjectives** | | | | |
|---|---|---|---|---|---|
| **Lesson** | **6** | **7** | **8** | **9** | **10** |
| **Group 1** | puzzled | surprised | shocked | slow | upset |
| **Group 2** | good | immune | punished | sick | wrong |

The hands-on concordance based tasks required the learners to conduct the process of the cooperative corpus consultation in COCA. The task, as a guideline, provided two sets of questions leading to an investigation of both G1 and G2 collocations. Working on Questions 1- 4 as in (14), the learners explored the variety of prepositions of Group 1 collocations and identified the similarities of the following nouns. Questions 5-7 as in (14) were related to the collocations of Group 2 where the change of the prepositions affected the meaning. They were asked to find the adjective + prepositions based on the given meaning. This was to raise their collocational perception about various prepositional collocates and their different meanings. Then they were required to select the concordance lines and group them together before generalizing the use of the following nouns.

To prevent the learners from confusion, the researcher provided the similar questions as seen in the paper-based concordance handouts.

(14)

**Task 6 (Hands-on concordance-based handout)**

Instructions: Consult the corpus to find the answers to the following questions.

**Puzzled**

1. What prepositions are frequently used with “puzzled”?
2. Find the prepositional collocates that convey the same meaning?
3. Select at least five concordance lines for each collocate that share the same meaning and pattern.
4. Are there any similarities of the nouns that follow the prepositions from Q2? What are those nouns?

**Good**

5. Find the prepositions occurring with “good” that conveys the following meaning.
    - able to use something or deal with people well
    - being kind, generous and willing to help

6. Select at least five concordance lines for each pattern.

7. What are the frequent words that follow the prepositions you receive from Q 5? Are there similarities and differences?



**3.4.1.3.4 Conduct of the cooperative corpus consultation of hands-on concordance-based tasks**

Like the conduct of the previous stage, the stage of the hands-on concordance based tasks started with a presentation of target adjectives. Two target adjectives were shown to draw learners’ attention. However, each group sat in front of one computer in a computer lab before starting a cooperative corpus consultation.

To begin with, the hands-on concordance based tasks, the strategy checklist and COCA’s usernames and passwords were given to each group. Moreover, one useful function “COLLOCATE” was introduced to facilitate the finding of

prepositional collocates so that the learners could use the list of the prepositional collocates to further their search process quickly. During the cooperative corpus consultation, the teacher monitored the class and provided support in particular technological support. Like the previous stage, the group secretary took care of the handouts and handed it in to the teacher before a class discussion took place.

**3.4.1.3.5 Validation of the lesson plan**

The validity of the handouts and task sheets was checked by three experts in the fields of EFL teaching and classroom concordancing using the Index of Item-Objective Congruence (IOC). Each item was rated by the three experts in the field who would give 1 point if each item was congruent to the test objective, 0 point if the item could be judged as congruent or incongruent and any item that was incongruent would be rated -1 point. Then the total scores were calculated by the formula below.

$$IOC = \frac{R}{N}$$

Where IOC means the index of congruence

R means total scores from the experts

N means number of experts

The three experts were asked to check the objectives of the lessons, the appropriateness of the chosen concordance lines, the appropriateness of tasks, the time allocation and the overall of both tasks. Overall, the IOC score of both tasks was 0.92 (see Appendix E) and all the three experts agreed that both tasks could serve the objectives of the study. However, there was one concern about the length of time given to each task in particular the hands-on concordance-based tasks. As a result, one of the useful functions from COCA corpus, "COLLOCATES" should be taught in order to reduce the difficulty level. The function of "COLLOCATES" could help the learners find the possible prepositional collocates easier and save the learners' time for other tasks.

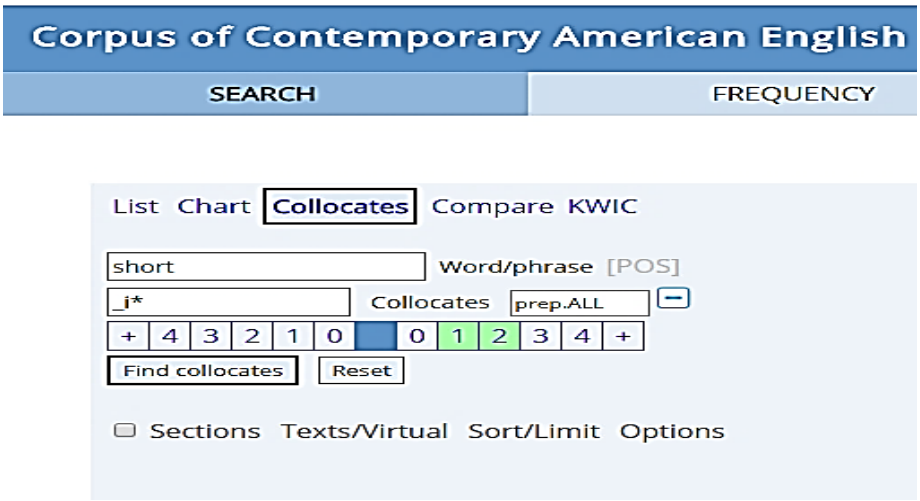
**3.4.1.4 Corpus**

A free on-line corpus, the Brigham Young University (BYU) Corpus of Contemporary American English (COCA) was used in this study for both the paper-

based concordance handouts and for the hands-on concordance-based tasks for the following reasons. COCA is freely available online corpus that the learners can access anywhere either in the computer lab at university, at home or through their phones. COCA corpus contains more than 520 million words of texts with equal balance between five different text types: spoken, fiction, magazine, newspaper and academic texts. The four basic search functions display four different kinds of information. LIST will provide frequency of word combinations. CHART provides comparison of frequencies in different genres or time periods while KWIC (*Key Word in Context*) shows words in context with color-coding for different parts of speech. COMPARE function will provide a comparison of two words according to their general frequency or with their specific collocates. Lastly, COCA contains a large list of collocations with 200-300 collocates (nearby words) for 60,000 different lemmas -- 4,300,000 node/collocate pairs in all. Furthermore, COCA provides a user-friendly search collocation option by typing a target word in the search field followed by a tag for the specific part of speech. For instance, users who want to know what prepositions can follow the adjective "short" can use one function called "COLLOCATES" and select the part of speech of the target collocates. The users need to limit the word span of the collocates that follow the search word.

Figure 3: The screenshot showing the result of COLLOCATE option of the adjective "short" from COCA





SEE CONTEXT: CLICK ON WORD [HELP...]

| | | CONTEXT | FREQ |
|---|---|---|---|
| 1 | ☐ | OF | 12741 |
| 2 | ☐ | IN | 1854 |
| 3 | ☐ | ON | 1733 |
| 4 | ☐ | FOR | 1417 |
| 5 | ☐ | TO | 1181 |
| 6 | ☐ | FROM | 1051 |
| 7 | ☐ | WITH | 765 |
| 8 | ☐ | BY | 747 |
| 9 | ☐ | AT | 417 |
| 10 | ☐ | ABOUT | 271 |

Retrieved from https://corpus.byu.edu/coca/

For the paper-based concordance handouts, COCA provided samples of concordance lines for material design. As a result, the researcher explored, selected some concordance lines containing the target collocations and put them into the handouts to facilitate the learners in both groups in the second stage of the corpus consultation. For the hands-on concordance-based tasks, the learners used COCA as a data source and as a tool in their learning.



### 3.4.2 Research instruments

The study was a quasi-experimental control group with a pre-test and a post-test. The study collected two types of data: quantitative and qualitative data to answer the research questions. There were four instruments in the study: pre-test and post-test, stimulated recall interview, a pre-project questionnaire and a post-project questionnaire.

#### 3.4.2.1 Pre-test and post-test

To answer the first research concerning the effects of a cooperative corpus consultation on the acquisition of adjective + preposition collocations, the quantitative data analysis was employed in this study, involving the pre-test and post-test. The subjects' collocational knowledge concerning the adjective + preposition collocations from both groups was tested in the pre-test before the treatment. Then the

experimental group learners engaged in the cooperative corpus consultation and the control group learners engaged in traditional corpus consultation before both groups took the post-test at the end of the instruction.

The pre-test and post-test were designed by the researcher to assess both collocational perception and production (See Appendix F). The test contains two parts: Grammaticality Judgment Task (GJT) and Gap Filling Task (GFT). The former was designed to measure collocation perception while the latter was aimed at collocation production.

The grammaticality judgment task (GJT) provided a complete sentence asking the learners to decide if each sentence was correct or not. Upon judging any item correct, the learners were required to put a tick √ in front of the item and they were instructed to put a × in front of the incorrect items and provide the correction. The rationale behind this task was to measure the learners' collocational perception as well as the learners' awareness if the provided adjective could collocate with the particular prepositions as can be seen from the following three sentences in (15).

(15)

- The President was **furious at** the newspaper report. (Targeted collocation 1)
- Angelina was **furious over** suggestions that she had lied to the public. (Targeted collocation 2)
- Jo's teacher is always **furious with** not getting attention from his learners. (Incorrect collocations)



The GJT consisted of 30 target items and 35 distracters. The 30 target items were based on 5 adjectives from Group 1 collocations and 5 adjectives from Group 2 collocations. Each adjective from both groups collocates with three prepositions (two target prepositions and the incorrect collocations).

Regarding the scoring, there were two separate scoring rubrics for grammatical and ungrammatical collocations. For the correct items, the learners earned 1 point when judging these items the correct answers and they received no point if they misjudged. For the incorrect items, the learners got 1 point if they judged them as the incorrect answers and provided the acceptable collocations. The learners

did not get any point if they judged the incorrect items as correct answers. The full score of the first part was 30 points.

The second part of the test, Gap Filling Task, contained 25 items, 10 target items and 15 distracters. The test was meant to measure the learners' collocational production. Similar to the GJT, the target items of GFT were created from both groups of collocations (5 items from G1 and 5 items from G2 collocations). The five items from G1 carried two correct answers as seen in Item 6 in (16) while the items of G2 contained only one correct answer as seen in Item 1 in (16). The learners would get one point for each correct answer and no point for no correct answers at all. The full score of the second part was 15 points.

(16)

**Part 2 Gap-filling**

***Directions:*** Circle the best answers. **Some items may have more than one answer.**

Sample: *I am studying _**at**_ SWU.* | at | on | under |

1. Susan's project costs a huge amount of money. Everyone criticizes her but she is immune _____ the gossip so she continues to work.

A. at B. from C. to D. with

6. Parents are genuinely shocked _____ the widespread use of alcohol and drugs in school zones.

A. at B. to C. by D. of



The test was verified for its content validity using the Index of Item-Objective Congruence (IOC) (See Appendix G). Each item was rated by the three native English teachers. The average IOC scores of GJT and GFT were 0.98 and 0.93, respectively, leading to 0.95 IOC overall score.

#### 3.4.2.1.1 Reliability of the pre-test and post-test

After the validation process, the reliability of the test was also established. The test was piloted with a sampling group of 36 learners who shared a similar level with the learners in the main study. Then, the test scores were calculated with a statistical method called a Kuder–Richardson Formula 20 (KR-20) to find out the reliability

coefficients of dichotomous choices in terms of the test internal consistency. The internal consistency of the test was interpreted as follows.

| **Cronbach's alpha** | **Internal consistency** |
|---|---|
| $\alpha \geq 0.9$ | Excellent |
| $0.9 > \alpha \geq 0.8$ | Good |
| $0.8 > \alpha \geq 0.7$ | Acceptable |
| $0.7 > \alpha \geq 0.6$ | Questionable |
| $0.6 > \alpha \geq 0.5$ | Poor |
| $0.5 > \alpha$ | Unacceptable |

(George & Mallery, 2003)

It was found that the pre-test revised received acceptable consistency ($\alpha = 0.81$, n = 38).

**3.4.2.2 Stimulated recall interview**

To answer the second question addressing the strategies the learners use during the cooperative corpus consultation, the stimulated interview was used to elicit in-depth data from the six learners who were selected based on the score of the pre-test: the highest scores, the mean scores and the lowest scores.

The researcher used the learners' concordance handouts and the quiz to prompt the learners to retrospectively verbalize their strategies during the cooperative corpus consultation. The verbal reports were audio-recorded and transcribed before the content analysis. The interview started from week 3.

To enhance the validity of the verbal reports, the learners were trained to verbalize their thoughts during week 3 and 4. In the stimulated recall sessions, the objectives of the study and the stimulated recall protocol were clearly explained to the learners. The verbalization was conducted in Thai to accommodate the main learners and minimize the misunderstanding and miscommunication among the learners and the researcher. They were also asked to recheck their verbal report transcriptions.

#### 3.4.2.2.1 Reliability estimation of the verbal protocol reports

The intra- and inter-rater reliabilities, based on Cohen's Kappa statistics, were adopted for estimating the consistency. The results from Cohen's Kappa, as computed by IBM SPSS Statistics 22, were interpreted using the following criteria.

| **Kappa (κ)** | **Interpretation** |
|---|---|
| < 0 | Poor agreement |
| 0.00 – 0.20 | Slight agreement |
| 0.21 – 0.40 | Fair agreement |
| 0.41 – 0.60 | Moderate agreement |
| 0.61 – 0.80 | Substantial agreement |
| 0.81 – 1.00 | Almost perfect agreement |

(Landis & Koch, 1977, p. 165)

The audio-recordings from the verbal protocol reports were transcribed and coded twice by the researcher in order to achieve a high level of intra-rater reliability. The inter-rater was trained to analyze the transcription and familiarized with the coding schemes. Cohen's Kappa was run to determine whether there was a consistency between the first and second time coding (intra-rater reliability) and the researcher and the inter-rater (inter-rater reliability). The intra-rater reliability was found to be Kappa = 0.817 ($p < 0.05$), 95% CI (0.733, 0.901), showing an almost perfect agreement between the first and the second time coding. In terms of inter rater reliability, there was an almost perfect agreement between the two raters K = 0.865 ($p < 0.05$), 95% CI (0.791, 0.939).

#### 3.4.2.3 Pre-project questionnaire

The pre-project questionnaire was designed to collect the learners' demographic information from both groups. The questionnaire contained three parts: the general information, the educational background concerning English education and computer literacy skills as well as background knowledge on corpus and concordance, leading to 12 items in total (See Appendix B). The first part elicited the learners' names, age, and their majors. The second part designed in the form of a checklist with a space provided for additional details as in (17) was used to gain the

information as follows: the number of years in learning English, the exposure of English in other countries, their preference for English and their perception towards their own English competency. The last part followed the format of the previous part provided 4 questions covering the frequent use of computers, the use of computers in learning English, their perception towards their computer literacy skills and the background knowledge on corpus and concordance.

(17)

**Part II: Background of learning English**

5. How long have you been learning English?
□ 1-3 years □ 4-6 years □ 7-9 years
□ 10-12 years □ More than 12 years

6. Have you studied English abroad?
□ Yes: Where and for how long? …….
□ No

7. Do you like studying English?
□ Very much □ Much □ Moderately
□ Not much □ Not at all

8. How would you rate your overall English proficiency?
□ Poor □ Fair □ Average
□ Good □ Very good



**3.4.2.3.1 Validation of the pre-project questionnaire**

The content validity of the instrument was checked by three experts in the field of language teaching using the Index of Item-Objective Congruence (IOC), resulting to the IOC score of 0.88 (See Appendix H). However, one of the experts commented on Items 9 and 11 that the two questions limited the use of technological tools to computers only. These two questions were too broad.

Item 9: How often do you use a computer?

Item 11: Have you ever used a computer for studying English?

The suggestion was taken into consideration, leading to the improvement of both items as follows.

Revised Item 9: “Do you possess any of the following electronic devices: a computer, a tablet computer or a smartphone?”

Revised Item 11: Have you ever used a computer, a tablet computer or a mobile device for studying English?

**3.4.2.4 Post-project questionnaire**

At the end of the study, the post-project questionnaire was administered to elicit the attitudes towards the corpus consultation from both groups and the attitudes towards the cooperative corpus consultation from the experimental group. The questionnaire was adapted from that of Yoon and Hirvela (2004) and developed to suit the particular context of this study. The questionnaire had three parts: corpus consultation, the cooperative corpus consultation as well as comments and suggestions. The Likert scale questions were used to ascertain the learners’ overall assessment of the new teaching approach using a 1–5 rating scale as follows.

| Scale | Meaning |
|---|---|
| 1 | Strongly disagree |
| 2 | Disagree |
| 3 | Neither agree nor disagree |
| 4 | Agree |
| 5 | Strongly agree |



The first part aimed at eliciting the positive and negative attitudes towards the following elements: the paper-based handouts, the hands-on concordance-based tasks, the use of six corpus strategies: observing, comparing, differentiating, grouping, inferencing and generalizing and the overall attitudes.

The first draft of the questionnaire contained 28 items in total. To begin with, Items 1-6 focused on the positive attitudes towards the usefulness of the paper-based handouts on the six corpus strategies as can be seen from the samples of Items 1-3 below. Then Items 8-13 draw the learners’ attention to the usefulness of the hands-on concordance-based tasks on the six corpus strategies as can be seen from Items 11-13

in (18). The positive attitudes towards the paper-based handouts and the hands-on concordance-based tasks were constructed as Items 7 and 14.

(18)

| Corpus strategies | Statement |
|---|---|
| Observing | Item 1) I learned new ways to observe collocations from the paper-based handouts and the given concordance lines. |
| Comparing | Item 2) The paper-based tasks and the given concordance lines assisted me to identify similarities of collocations. |
| Differentiating | Item 3) The paper-based tasks and the given concordance lines assisted me to identify differences of collocations. |
| Grouping | Item 11) Performing the online tasks assisted me to group concordance lines. |
| Inferencing | Item 12) Performing the online tasks assisted me to draw a conclusion about prepositional collocates. |
| Generalizing | Item 13) Performing the online tasks assisted me to draw collocational patterns. |
| Overall | Item 7) The paper-based handouts and the given concordance lines assisted me to learn adjective preposition collocations. |
| Overall | Item 14) Performing the online tasks assisted me to learn adjective preposition collocations. |



Similarly, the statements showing the negative attitudes towards both tasks were constructed, starting from Items 15 to 28. All the negative statements followed the following patter “Learning adjective preposition collocations from the paper-based handouts is a demanding task”. The first part of the questionnaire was given to both groups of the learners.

The second part covered 14 items which were designed to collect the attitudes towards the usefulness of the cooperative corpus consultation on the six corpus strategies. Therefore, only the experimental group needed to complete this part. They were asked to rate whether the cooperative corpus consultation helped them apply the

six corpus strategies successfully and whether they preferred the cooperative corpus consultation to the traditional corpus consultation as in (19).

(19)

| Corpus strategies | Statement |
|---|---|
| Observing | Item 29) I learned new ways to observe collocations from my friends. |
| Comparing | Item 30) I learned new ways to identify similarities of collocations from my friends. |
| Differentiating | Item 31) I learned new ways to identify differences of collocations from my friends. |
| Grouping | Item 31) I would rather group concordance lines alone. |
| Inferencing | Item 39) I would rather draw a conclusion about prepositional collocates alone. |
| Generalizing | Item 40) I would rather draw collocational patterns alone. |
| Overall | Item 41) Working in a group had a positive effect on learning adjective preposition collocations. |
| Overall | Item 42) I would rather learn adjective preposition collocations alone. |



**3.4.2.4.1 Validation of the post-project questionnaire**

The instrument was validated to check the content validity by three experts before the administration, leading to the IOC score of 0.7. The three experts raised some concerns and provided the suggestions as follows. In the first part of the questionnaire, the word demanding in Items 15-28 might mislead the learners. The researcher consulted the experts and used the word “complicated” instead as can be seen from the samples of the revised items, Items 13 and 14 in (20).

(20)

| No | Statement |
|---|---|
| Revised 13 | Observing collocations from the paper-based handouts is a complicated task. (การสังเกตคำปรากฏร่วมจากเอกสารที่ได้รับแจกเป็นงานที่ซับซ้อน) |
| Revised 14 | Identifying similarities of collocations from the paper-based handouts is a complicated task. (การระบุความเหมือนของคำปรากฏร่วมจากเอกสารที่ได้รับแจกเป็นงานที่ซับซ้อน) |

In the second part of the questionnaire, the phrase “observing from my friends” from Items 29-34 was changed to “observing with my friends” as shown the revised version of Items 25 and 26 in (21).

(21)

| No | Statement |
|---|---|
| Revised 25 | I learned new ways to observe collocations with my friends. (ฉันได้เรียนรู้วิธีใหม่ที่จะสังเกตคำปรากฏร่วมกับเพื่อน ๆ) |
| Revised 26 | I learned new ways to identify similarities of collocations with my friends. (ฉันได้เรียนรู้วิธีใหม่ที่จะระบุความเหมือนของคำปรากฏร่วมกับเพื่อน ๆ) |



In addition, one of the three experts suggested translating the English statements in Thai and providing both versions. Lastly, the expert mentioned that the fifth strategy, inferencing and sixth strategy, genearalzing, were closely related and that the learners might be confused about the two strategies. As a result, the fifth strategy, inferencing, was removed, leading to the reduction of the items. The number of the statements in the first part reduced to 24 items while that of the second part was 12 items, resulting in 36 items in total (See Appendix I). The revised statements were

once again checked by the same experts and the IOC score was 0.98. (See Appendix J).

**3.4.2.4.2 Reliability of the post-project questionnaire**

The reliability of the post-project questionnaire was established by piloting them with 38 learners who were of a similar level to the learners in the main study. After the piloted test was conducted, the scores were calculated with a statistical method called an alpha coefficient or Cronbach's Alpha to find out the reliability value in terms of the test internal consistency. It was found that the overall revised draft questionnaire received acceptable consistency ($\alpha = 0.77$, $n = 38$).

**3.4.2.5 'Can-do' statement questionnaire**

A 'can-do' statement questionnaire is a questionnaire aiming at examining the level of learners' learning strategies. The questionnaire provided the 'can-do' statements requiring the learners to check their ability to handle the corpus strategies and the cooperative strategies. The Likert scale questions were employed to elicit the learners' perception towards the corpus and cooperative strategies. The detail of each scale is described as follows.

| Scale | Meaning |
|---|---|
| 1 | Strongly disagree |
| 2 | Disagree |
| 3 | Neither agree nor disagree |
| 4 | Agree |
| 5 | Strongly agree |



The questionnaire was divided into two parts: the six corpus strategies in the corpus consultation process namely observing, comparing, differentiating, grouping, inferencing and generalizing. The first part of the questionnaire contained 12 items. That is because to enable the learners to self-observe effectively, each corpus strategy provided two statements. For example, the two statements focusing on observing skill are in (22).

(22)

| No | Statement |
|---|---|
| Item 1 | I can notice which pairs of words are adjective preposition collocations. |
| Item 2 | I can notice a variety of prepositions of the adjective preposition collocations. |

The second part of the questionnaire covered the five elements of the cooperative corpus strategies covering accountability, promotive interaction, appropriate use of social skills and group processing. Like the first part, the second part of the questionnaire had 10 items, meaning that each cooperative strategy required the learners to observe two aspects. The two statements in (23) were designed for the accountability.

(23)

| No | Statement |
|---|---|
| Item 1 | I can rely on every team member. |
| Item 2 | I can be confident that the group' success comes from every member. |



**3.4.2.5.1 Validation of the 'can-do' statement questionnaire**

The statements were validated to check the content validity by three experts in the field of English language teaching and classroom concordancing before the administration, resulting to the IOC score of 0.77. The three experts not only checked the content validity, but also provided useful comments and suggestions as follows.

Firstly, the statement should not be a double barrel question as in Item 3 "I can identify similarities of meanings of the target collocations with and without changes of prepositions". Therefore, it was changed into "I can identify similarities of meanings of the target collocations". Secondly, two experts pointed out that Items 9-10 in (24) which were based on the fifth strategy, inferencing might mislead the learners. Moreover, these two items were closely related to Items 11 and 12 which

were based on the sixth strategy. As such, the two items based on the fifth strategy were removed from the questionnaire.

(24)

| No | Statement |
|---|---|
| Item 9 | I can draw a conclusion of which prepositional collocates follow the adjectives from observing the concordance lines. |
| Item 10 | I can draw a conclusion of whether the change of prepositions affects the meaning of the collocations from observing the concordance lines. |

Concerning the cooperative corpus strategies, there was one comment on Item 10 “I can comment on other groups’ work”. The expert asked whether each group needed to compare their work with other groups. After the close examination, this item was removed from the questionnaire, leading to the total of 9 items in the cooperative strategy part. Lastly, like the post-project questionnaire, the same expert suggested translating the English statements in Thai and providing both versions as in (25).

(25)

| No | Statement |
|---|---|
| | **Part 1: Corpus strategies** |
| Revised Item 1 | I can notice which pairs of words are adjective preposition collocations. (ฉันสามารถสังเกตได้ว่าคำคู่ไหนเป็นคำปรากฏร่วมระหว่างคำวิเศษณ์และคำบุพบท) |
| Revised Item 2 | I can notice a variety of prepositions of the adjective preposition collocations. (ฉันสามารถสังเกตถึงความหลากหลายของคำบุพบทของคำปรากฏร่วมระหว่างคำวิเศษณ์และคำบุพบท) |

**Part 2: Cooperative strategies**

| | |
|---|---|
| Revised Item 1 | I can rely on every team member. (ฉันสามารถพึ่งพาเพื่อนทุกคนในกลุ่มได้) |
| Revised Item 2 | I can be confident that the group' success comes from every member. (ฉันสามารถมั่นใจได้ว่าความสำเร็จของกลุ่มมาจากสมาชิกทุกๆคน) |

Therefore, all the statements of the 'can-do' statement questionnaire were translated and checked with the experts again, leading to the IOC score of 0.94 (See Appendix K). The final version of the questionnaire covered 10 items based on the five corpus strategies and 9 items based on the five elements of the cooperative strategies (See Appendix L).

**3.4.2.5.2 Reliability of the 'can-do' statement questionnaire**

The reliability of this instrument was established by piloting them with 38 learners who had been the learners in the experimental group in the pilot study. The internal reliability of the revised draft questionnaire was determined by using the IBM Statistical Package for the Social Sciences (SPSS) Statistics version 22 to compute Cronbach's alpha. The internal consistency of the revised questionnaire received good consistency ($\alpha = 0.85$, $n = 38$).



**3.4.2.6 Classroom observation schemes**

The learners' strategies during working with their groups in the cooperative corpus consultation were video-recorded, and the researcher observed their cooperative strategies using classroom observation schemes. The schemes were developed using the framework of cooperative strategies under the five elements of cooperative learning. The observation learners who were selected using purposive sampling were selected using the score of the pre-test: the highest scores, mean scores and the lowest scores. The classroom observation schemes were analyzed the frequency of the learners' cooperative strategies and the teacher's note in each observation was analyzed using content analysis.

#### 3.4.2.7 Learners' reflective journals

The learners' reflective journals were the instruments designed to qualitatively collect the reflections on their own learning process from both groups of the learners. To elicit their thoughts, the researcher provided three prompt questions at the same time for the learners to write after each week. The three prompts served as the guideline for the learners to self-observe, self-evaluate and self-report and the prompts had their own focus. To facilitate the process of writing the journal, the learners were allowed to write in Thai.

The first prompt drew the learners to think about the problems happening during the class. Then the second prompt required them to report what corpus strategies both groups used and what cooperative strategies the experimental group employed in order to solve the mentioned problems. The last prompt asked them about the process of completing the corpus tasks.

##### 3.4.2.7.1 Validation of the learners' reflective journals

The reflective journal prompts were evaluated by three experts in the language teaching field by using the Index of Item-objective Congruence (IOC), resulting to the IOC score of 0.88 (see Appendix M ). However, one of the experts pointed out that the second and the third prompts might be similar, and it might be more beneficial to ask the learners about the benefits they received from weekly learning. The revised prompts of the control group are in (26) and those of the experimental group are in (27).



(26)

| **Control group** |
| --- |
| **Instructions:** Please give the information on the following topics.<br>1. What were the problems during the corpus consultation? How did you solve them?<br>2. What strategies did you use in using the corpus to learn collocations? Were they effective?<br>3. What were the benefits of the corpus in learning the adjective + preposition collocations? |

(27)

| **Experimental group** |
| --- |
| **Instructions:** Please give the information on the following topics.<br>1. What were the problems during the corpus consultation? How did you solve them? How did your group members solve the problems?<br>2. What strategies did you use in using the corpus to learn collocations? ? What strategies did your group members use during the corpus process? Were they effective?<br>3. What were the benefits of the corpus in learning the adjective + preposition collocations? |

**3.4.2.7.2 Reliability of the learners' reflective journals**

The intra- and inter-rater reliabilities, based on Cohen's Kappa statistics, were adopted for estimating the consistency. The results from Cohen's Kappa, as computed by IBM SPSS Statistics 22, were interpreted using the following criteria.

| **Kappa (κ)** | **Interpretation** |
| --- | --- |
| < 0 | Poor agreement |
| 0.00 – 0.20 | Slight agreement |
| 0.21 – 0.40 | Fair agreement |
| 0.41 – 0.60 | Moderate agreement |
| 0.61 – 0.80 | Substantial agreement |
| 0.81 – 1.00 | Almost perfect agreement |

(Landis & Koch, 1977, p. 165)



The reflective journals were coded two times by the researcher in order to achieve a high level of intra-rater reliability. The inter-rater was trained to analyze the journals and familiarized with the coding schemes. An inter-rater reliability analysis using the Kappa statistic was performed to determine consistency between the first and second time coding (intra-rater reliability) and the researcher and the inter-rater (inter-rater reliability). The intra-rater reliability received an almost perfect

agreement, $\kappa = 0.905$ ($p < 0.05$), 95% CI (0.847, 0.960); and the inter-rater reliability for the raters obtained an almost perfect agreement, $\kappa = 0.863$ ($p < 0.05$), 95% CI (0.794, 0.931).

### 3.5 Data collection

The duration of the experiment was one academic semester or 15 weeks. The corpus consultation in the control group and the cooperative corpus consultation in the experimental group lasted for approximately 45 to 50 minutes after the English class. At the beginning of the study, the pre-test and the pre-project questionnaire were administered to the control and the experimental group to obtain the learners' information on their current collocational knowledge as well as on their personal information before the study. In the following week, the first 'can-do' statement questionnaire was distributed to elicit the learners' perception towards the corpus strategies.

During the second stage, both groups were given a reflective journal to write immediately after the corpus consultation and the second 'can-do' statement questionnaire to self-observe the corpus strategies as well as the cooperative strategies after conducting the paper-based concordance tasks. Moreover, the learners from the experimental group were observed by the researcher as the teacher using the observation schemes, and the six selected learners from the experimental group were invited to join the stimulated recall interviews so the researcher could gain their thinking process during the corpus consultation using the tasks they completed each week.

During the third stage, both groups were given a reflective journal right after the completion of the tasks. After the last week of the third stage, the last 'can-do' statement questionnaire was given to evaluate their ability to handle the hands-on concordance-based handouts. Like the second stage, the experimental group was observed by the researcher using the observation schemes and the six learners joined the stimulated recall interview. Finally, the post-test and the post-project questionnaire were administered for both groups in the last week. For the

experimental group, the six stimulated recall interview learners were interviewed after the post-test. The stages of data collection can be seen in Table 7.

Table 7: The implementation plan of the instruments of both groups

| **Stage / Week** | **Activities for both groups** | | **Research instruments for both groups** | **Research instruments For the experimental group only** |
|---|---|---|---|---|
| **Stage 1** | **Training** | | | |
| Week 1 | Training 1 | | Pre-test<br>Pre-project questionnaire | |
| Week 2 | Training 2 | | Can-do questionnaire (1) | |
| **Stage 2** | **Paper-based concordance Tasks** | | | |
| Week 3<br>Lesson 1 | annoyed | clear | | Training of Stimulated recall Interview<br>Observation schemes (1) |
| Week 4<br>Lesson 2 | amazed | free | | Training of Stimulated recall Interview<br>Observation schemes (2) |
| Week 5<br>Lesson 3 | disappointed | frightened | Reflective journal (1) | Stimulated recall Interview (1)<br>Observation schemes (3) |
| Week 6<br>Lesson 4 | excited | generous | Reflective journal (2) | Stimulated recall Interview (2)<br>Observation schemes (4) |
| Week 7<br>Lesson 5 | furious | grateful | Reflective journal (3)<br>Can-do questionnaire (2) | Stimulated recall Interview (3)<br>Observation schemes (5) |

| | | | | |
|---|---|---|---|---|
| Week 8 | **MIDTERM** | | | |
| **Stage 3** | **Hands-on concordance-based handouts** | | | |
| Week 9 Lesson 6 | puzzled | good | Reflective journal (4) | Stimulated recall Interview (4) Observation schemes (6) |
| Week 10 Lesson 7 | surprised | immune | Reflective journal (5) | Stimulated recall Interview (5) Observation schemes (7) |
| Week 11 Lesson 8 | shocked | punished | Reflective journal (6) | Stimulated recall Interview (6) Observation schemes (8) |
| Week 12 Lesson 9 | slow | sick | Reflective journal (7) | Stimulated recall Interview (7) Observation schemes (9) |
| Week 13 Lesson 10 | upset | wrong | Can-do questionnaire (3) | Observation schemes (10) |
| Week 14 | | | Post-test Post-project questionnaire | Stimulated recall Interview (8) |



### 3.6 Data analysis

Research question 1 was concerned with learning effects of two teaching methods on the acquisition of adjective + preposition collocations namely, the conventional corpus approach used in the comparison group and the cooperative corpus consultation used in the experimental group. To answer this question, the scores from the pre-test and post-test from both groups were quantitatively analyzed for mean scores and standard deviation. The mean scores of the learners within the same group were compared using Paired-Sample *t*-test while the comparison of the mean scores between the two groups was analyzed using Independent Sample *t*-test at the significance level of 0.05. To have a clearer understanding of the learning effects,

the verbal reports from the six learners during the stimulated recall protocol were analyzed using content analysis which covered the following phases: reading through the data, manually segmenting the transcriptions into small meaning units where each one contained one single meaning, formulating codes and categorizing themes by refining the research questions and the definitions of terms, classifying the meaning units into formulated codes and themes, detecting the possible emerging themes and revising of the categories after analyzing 50% of the data sets. Lastly, the frequency of each code was calculated for frequency and summarized in percentages. To ensure the reliability of the coding process, the intra-rater reliability and inter-rater reliability were examined using the Kappa statistic.

Research question 2 aimed to answer what strategies the learners in the experimental group employed during the process of the cooperative corpus consultation. To answer this question, both qualitative and quantitative data derived from both the learners and the researcher was analyzed. The data from 'can-do' statements which was obtained three times: before the treatment, after the paper-based concordance tasks and after the hands-on concordance-based tasks was analyzed for mean and standard deviation. All items in the questionnaire were summarized in percentages according to learners' rating the strategy management in dealing with a corpus. To derive criteria to interpret the data, the number of interval scales derived from the highest score minus the lowest and divided by five, the number of Likert scales, leading to 0.8. Then the mean score of each 'can-do' statement was interpreted as presented below.



| | | |
|---|---|---|
| 4.21 – 5.00 | means | the learners reported that they strongly agree. |
| 3.41 – 4.20 | means | the learners reported that they agree. |
| 2.61 – 3.40 | means | the learners reported that they neither agree nor disagree |
| 1.81 – 2.61 | means | the learners reported that they disagree. |
| 1.00 – 1.80 | means | the learners reported that they strongly disagree. |

Also, the verbal reports from the stimulated recall protocol and the reflective journals were qualitatively analyzed using content analysis. To ensure the reliability of the

coding process, the intra-rater reliability and inter-rater reliability were examined using the Kappa statistic. From the researcher's perspective, the data from the classroom observation schemes used as supplementary data was analyzed the frequency of the learners' cooperative strategies and the teacher's notes in each observation was analyzed using content analysis which was explained earlier.

Finally, research question 3 was concerned with the learners' attitudes towards the application of the traditional corpus approach and the cooperative corpus consultation. The data from all items of the questionnaire from both groups were summarized in percentages to reveal the frequency of learners' opinions. Then, each item was calculated for the mean. Then, the mean score obtained from the questionnaire was interpreted according to the following criteria.

| | | |
|---|---|---|
| 4.21 – 5.00 | means | the learners reported that they strongly agree. |
| 3.41 – 4.20 | means | the learners reported that they agree. |
| 2.61 – 3.40 | means | the learners reported that they neither agree nor disagree. |
| 1.81 – 2.61 | means | the learners reported that they disagree. |
| 1.00 – 1.80 | means | the learners reported that they strongly disagree. |

**3.7 Pilot study**



Before the main study, a pilot study was conducted for the following reasons: to assess the feasibility of the lesson plans in terms of effectiveness and time for each lesson, to try out the instruments to check the reliability of the instruments and to identify potential problems.

The learners in the pilot study were 38 first year university from the Faculty of Humanities and Social Sciences. They were similar to the learners in the main study in terms of English proficiency, age, their first language and educational background. The pilot study was conducted in the first semester at Srinakharinwirot University.

The instruments used in the pilot study were as follows: the lesson plans which covered the paper-based concordance-handouts and the hands-on concordance-based tasks the pre-test, the 'can-do' statement questionnaire and the post-project

questionnaire. The data collection procedure started with the administration of the pre-test followed by the paper-based concordance-handouts and the hands-on concordance-based tasks and the two questionnaires were given to the learners after the task completion.

Overall, the pilot learners were able to complete their tasks within the time limits. However, it was found that there were some problems resulting from the paper-based concordance-handouts. Firstly, the learners had difficulties in flipping between the instructions and the pages containing the concordance lines. Moreover, underneath each instruction, the provided space was found inadequate. As a result, the researcher adjusted the paper-based concordance-handouts to facilitate the learners in the main study by separating the instructions and the concordance lines and provided more space for the learners underneath each item. When the learners consulted COCA for completing the hands-on concordance-based tasks, it was found that there were some occasional technological interruptions due to the usage limits given by COCA to free users. To overcome this problem, the researcher contacted the website and purchased one-year institutional accounts for the main learners.

# CHAPTER IV
# RESULTS AND DISCUSSION

This chapter presents the results from the experiments and the subsequent discussion. The chapter is divided into three sections. The first section focusing on the acquisition of the adjective + preposition collocations is divided into two parts: quantitative and qualitative results related to the acquisition of the adjective + preposition collocations (4.1.1) and a discussion concerning the effects of the cooperative corpus consultation on the acquisition of the target collocations (4.1.2). The second section highlights the learning strategies used by the learners during the cooperative corpus consultation. As before, the second section also contains two parts: quantitative and qualitative data concerning the learners' strategies (4.2.1) and a discussion of strategies used during the cooperative corpus consultation (4.2.2). Lastly, the third section deals with the learners' attitudes towards the cooperative corpus consultation. This section consists of two parts presenting quantitative and qualitative results concerning the learners' attitudes towards the cooperative corpus consultation (4.3.1) and a discussion of the learners' attitudes towards the cooperative corpus consultation (4.3.2).

## 4.1 The acquisition of adjective + preposition collocations

### 4.1.1 Quantitative and qualitative results related to the acquisition of adjective + preposition collocations

A research question was posed in an attempt to discover whether the effects of a cooperative corpus consultation on the acquisition of adjective + preposition collocations would become apparent after the implementation of a new corpus consultation. It was hypothesized that a cooperative corpus consultation would have a better effect on the acquisition of adjective + preposition collocations than corpus-based instruction. To test this hypothesis, both quantitative and qualitative data was collected. The quantitative data was derived from the learners' pre-test and post-test scores, and the qualitative data came from the verbal protocol transcript.

Table 8: Average pre-test scores of GJT and GFT

| | **Control group** | **%** | **Experimental group** | **%** | **Sig (2 tailed)** |
|---|---|---|---|---|---|
| **GJT (full score= 30 )** | 16.26 | 54.2 | 16.08 | 53.6 | **0.82** |
| **GFT (full score= 15 )** | 4.79 | 31.93 | 4.53 | 30.2 | **0.55** |

* $p<0.05$

As shown in Table 8, the mean GJT score of the control group was 16.26 out of 30 marks (54.2 %) while that of the experimental group was slightly lower, namely 16.08 out of 30 marks (53.6 %). The mean GFT scores were considered, and it was found that the mean GFT score of the control group was slightly higher than that of the experimental group, in that the former was 4.79 out of 15 marks (31.93 %) while the latter was 4.53 marks (30.2%). Then, an independent-samples t-test was conducted to compare the average GJT and GFT scores of both groups. The independent samples t-test showed that the average GJT and GFT scores did not significantly differ ($p$ = 0.82 and $p$ = 0.55, respectively). It was clearly seen that the learners from both groups performed almost equally.

Table 9 : The comparison of problematic collocations of the pre-test between G1 and G 2collocations

| | **Control Group (38 learners)** | | **Experimental Group (36 learners)** | |
|---|---|---|---|---|
| | **Collocations** | **%** | **Collocations** | **%** |
| Group 1 | upset in | 92.10 | puzzled at | 94.44 |
| | furious with | 89.47 | slow at | 91.66 |
| | puzzled at | 89.47 | annoyed by | 86.11 |
| | excited by | 86.84 | excited by | 86.11 |
| | annoyed at | 81.57 | shocked at | 83.33 |
| | slow at | 81.57 | upset in | 83.33 |
| | shocked at | 78.94 | furious with | 77.7 |
| | disappointed in | 76.31 | disappointed in | 80.5 |
| | amazed in | 71.05 | slow in | 69.44 |
| Group 2 | wrong at | 89.47 | wrong at | 94.44 |
| | immune to | 73.68 | free for | 91.66 |
| | free to | 76.31 | punished at | 80.5 |
| | | | punished with | 77.77 |

The data from the pre-test was analyzed, showing the five most problematic collocations displayed in Table 9. The collocations from Group 1 caused more problems than those from group 2 in both GJT and GFT task. To be precise, there were 12 pairs from Group 1 collocations while there were 5 pairs from Group 2 collocations. The data from Table 9 also shows that the learners in the experimental group had the problems with 13 pairs while their counterparts had fewer problems with 12 pairs of the collocations. It should be noted that the learners from both groups encountered the similar collocational problems. In fact, the following eight pairs: "upset in", "furious with", "disappointed in", "wrong at", "puzzled at", "slow at", "excited by" and "shocked at" were found problematic in both groups. All the problematic collocations were then classified into three groups: more frequent collocations, less frequent collocations and incorrect collocations as in Table 10.

Table 10: Three classifications of problematic collocations

| | **Incorrect collocations** | **More frequent collocations** | **Less frequent collocations** |
|---|---|---|---|
| Control group | amazed in | free to<br>immune to | annoyed at |
| Experimental group | free for<br>punished at | annoyed by<br>slow in | punished with |
| Both groups | upset in<br>furious with<br>disappointed in<br>wrong at | excited by<br>shocked at | puzzled at<br>slow at |



The data from Table 10 shows that of the three groups of problematic collocations, 'incorrect collocations' caused both groups of learners the most difficulty. This was followed by 'more frequent collocations' and 'less frequent collocations', respectively. Most of the learners in both groups perceived the incorrect collocations as acceptable when reading the sentences in GJT task. In both groups of learners, the problems with the more frequent and less frequent collocations occurred when the learners judged the use of both groups of collocations in the given contexts as incorrect.

Table 11 : The comparison of the post-test and pre-test, both within each group (control group and experimental group) and between the two groups

| | **Control Group** | | | | **Experimental Group** | | | | **Between groups** |
|---|---|---|---|---|---|---|---|---|---|
| | **Pre** | **%** | **Post** | **%** | **Pre** | **%** | **Post** | **%** | **Sig (2 tailed)** |
| **GJT** (full score= 30 ) | 16.26 | 54.2 | 16.03 | 54.1 | 16.08 | 53.6 | 19.44 | 64.8 | ***p* = 0.000** |
| **Intra group** | **0.794** | | | | ***p* = 0.000** | | | | |
| **GFT** (full score= 15 ) | 4.79 | 31.93 | 5.86 | 39.06 | 4.53 | 30.2 | 8.03 | 53.53 | **p = 0.000** |
| **Intra group** | ***p* = 0.011** | | | | ***p* = 0.000** | | | | |

* p<0.05

After the two training sessions and ten weeks of treatment, both groups took the post-test. A comparison of the pre-test and post-test scores between the two groups was made, and according to the data in Table 11, the learners in the experimental group outclassed those in the control group in both tasks, while the learners in the control group showed improvement in the GFT only. The comparison of the pre-test and post-test scores of the experimental group, in both the GFT and GJT, revealed that the average score in the GJT rose from 53.6% to 64.8% and that the mean score in the GFT jumped sharply from 30.2% to 53.5%. Then, a paired samples t-test was performed and the statistical data suggested that there was a significant difference in both the GJT and GFT ($p$=0.000). Unlike those in the experimental group, the learners in the control group showed improvement in the GFT only, where the average score increased from 31.93 % to 39.06 % while the GJT score remained the same. When a paired samples t- test was conducted to compare the average pre-test and post-test scores of the control group in both the GFT and GJT , the data showed that there was no difference in the scores of the GJT ($p$ =0.794), but there was a substantial difference in those of the GFT ($p$ =0.011). Lastly, the average

scores of the two groups were compared using an independent-samples t-test and the data revealed a significant difference ($p$ = 0.000).

Table 12 : The five most common problematic collocations of the post-test

| | **Control Group (38 learners)** | | | | **Experimental Group (36 learners)** | | | |
|---|---|---|---|---|---|---|---|---|
| | **Collocations** | **POST-TEST** | | **PRE-TEST** | **Collocations** | **POST-TEST** | | **PRE-TEST** |
| | | **%** | | **%** | | **%** | | **%** |
| Group 1 | furious with | 79.9 | ↓ | 89.47 | puzzled at | 58.33 | ↓ | 94.44 |
| | shocked at | 76.31 | ↓ | 78.94 | slow at | 69.44 | ↓ | 91.66 |
| | excited by | 68.42 | ↓ | 86.84 | excited by | 69.44 | ↓ | 86.11 |
| | slow in | 68.42 | ↓ | 86.84 | shocked at | 52.77 | ↓ | 83.33 |
| | slow at | 81.57 | = | 81.57 | upset in | 63.88 | ↓ | 83.33 |
| | disappointed in | 76.31 | = | 76.31 | furious with | 80.55 | ↓ | 80.5 |
| | amazed in | 76.31 | ** | - | disappointed in | 72.22 | = | 77.7 |
| | surprised in | 76.31 | ** | - | slow in | 88.8 | ↑ | 69.44 |
| | puzzled by | 73.68 | ** | - | | | | |
| Group 2 | wrong at | 86.84 | ↓ | 89.47 | wrong at | 88.8 | ↓ | 94.44 |
| | immune to | 76.31 | ↑ | 71.05 | free for | 72.22 | ↓ | 91.66 |
| | free for | 86.84 | ** | - | | | | |
| | frightened in | 84.2 | ** | - | | | | |

As can be seen from the data in Table 12, the learners in the experimental group outperformed those in the control group. To begin with, the number of problematic collocations in the experimental group decreased from 13 pairs to 10 pairs, while that of the control group slightly increased from 12 pairs to 13 pairs. Moreover, a closer analysis revealed that the learners in the experimental group did not have any additional problematic collocations, yet the learners from the control group had problems with four more collocational pairs, namely “surprised in”, “free for”, “frightened in” and “puzzled by”. Furthermore, the learners in the experimental group showed progress according to their improved scores in eight collocation pairs. It should be noted that their score of “furious with” remained the same, and it can be seen that there were more learners who had a problem with “slow in” since the percentage who had problems with it increased from 69.44 in the pre-test to 88.8 in the post-test. In contrast, the control group learners showed an improvement in only five pairs and they still had problems with the same two collocations: “disappointed in” and “slow at”. They also struggled more with “amazed in” and “immune to”.

Table 13 : The number of the learners who chose two correct collocates in the GFT

| Group 1 collocations | Prep | Prep | Pre-test | | Post-test | |
|---|---|---|---|---|---|---|
| | | | Control group | Experimental group | Control group | Experimental group |
| shocked | by | at | | | 2 (5.26%) | 9 (25%) |
| excited | by | at | | | | 5 (13.88%) |
| annoyed | by | at | | 1 (2.77%) | 1 (2.63%) | 8 (22.22%) |
| puzzled | by | at | 1 (2.63%) | | 1 (2.63%) | 9 (25%) |
| slow | in | at | | | 1 (2.63%) | 1 (2.77%) |
| Total | | | 1 | 1 | 5 | 32 |

As presented in Table 13, there was only one learner from each group who was able to choose both correct collocates in the GFT task before the corpus consultation. In fact, there were five pairs of group 1 collocations in the GFT task where the learners could choose two prepositional collocates without a change of meaning. After the corpus consultation, it was found that there was a significant difference between the two groups with regard to the number of times that learners were able to choose both correct collocates in the GFT task. The number of times learners in the control group were able to choose both correct collocates in the GFT task was five times higher in the post-test, while the corresponding number in the experimental group was 32 times higher.

In the next part, the findings from the stimulated recall interview with six learners from the experimental group are presented in Table 14.

Table 14 : Frequency of verbal protocol reports related to the effects of the cooperative corpus consultation

| Factors | S1 | S2 | S3 | S4 | S5 | S6 | Total |
|---|---|---|---|---|---|---|---|
| Group discussion | 15 | 9 | 9 | 3 | 6 | 21 | 63 |
| Frequency of the prepositions or nouns in the concordance lines | 7 | 2 | 4 | 1 | 6 | 9 | 29 |
| Grammatical knowledge | 7 | 1 | 6 | 1 | 8 | 3 | 26 |
| Confusion from tasks | 5 | 2 | 4 | 2 | 2 | 4 | 19 |
| Meaning of words | 3 | 1 | 1 | 4 | 4 | 3 | 16 |

As shown in Table 14, the data from the stimulated recall showed 153 verbal protocol reports as evidence of the effects of the cooperative corpus consultation. The first three factors yielded positive benefits; those factors are group discussion, frequency of the prepositions or nouns found in the concordance lines, and grammatical knowledge. However, the last two factors – confusion from the corpus tasks and the meanings of words – resulted in negative effects on the acquisition-of-collocations learning process.

**4.1.2 Discussion of the effects of the cooperative corpus consultation on the acquisition of adjective + preposition collocations**

As stated in section 1.4, the first aim of the present study was to investigate the effects of a cooperative corpus consultation on the acquisition of adjective + preposition collocations among L1 Thai learners of English. To achieve this objective, one hypothesis was written. For convenience, the hypothesis presented in 1.5 is repeated below.

Hypothesis 1: A cooperative corpus consultation has a better effect on the acquisition of adjective + preposition collocations than corpus-based instruction.

It was found that in both tasks, the post-test scores of the experimental group learners showed significant improvement on the corresponding pre-test scores. Before receiving the treatment, the learners in both groups – like other Thai learners – had little or limited knowledge of collocations. After the treatment, the average scores of

the experimental group were significantly higher than those of the control group, in both the grammaticality judgment task and gap filling task. To be precise, the mean score of the GJT increased from 53.6% to 64.8%, and the average score of the GFT climbed markedly from 30.2% to 53.5%, while the performance of the control group was better in the GFT only. It could be said that the cooperative corpus consultation was more effective than a traditional corpus consultation in promoting the acquisition of the target collocations, which confirms the hypothesis that the cooperative corpus consultation has positive effects on acquiring the target collocations.

Before the discussion of the effects on learners regarding both their perception and production can be presented, the detailed analysis of the pre-test should be explained first.

To start with, the pre-test scores revealed the adjective + preposition collocations were problematic to the learners in this study despite their levels of proficiency. Although the learners might have encountered some adjectives in the list before incidentally or intentionally, the learners tended to see the adjectives as single-word lexical items and retrieved them as previously seen. As a result, when encountering the target collocations in the pre-test, the learners in both groups seemed to struggle. The possible cause is that the materials used in classroom settings hardly pay attention to this particular pattern. Those textbooks are likely to highlight the definitions of some adjectives as single words as seen in (28) and (29). Both excerpts were taken from the verbal protocol interviews. Excerpt (28) reveals that the learners in one group saw the adjective "slow" as a single item. Hardly were they aware of its prepositional collocates. Likewise, excerpt (29) derived from the other learner from the other group shows that the learner was unsure about how the different meanings of the adjective "good" when it changed its collocates.



(28)

"Our group agreed that "slow" was difficult for us. We never knew that "slow" was used with prepositions. We spent a lot of time working with it. At first, we got to the wrong directions". (ST 3)

(29)

"We found that "good" was much difficult than "puzzled. At first, we thought "good at" meant that "to be able to use something" or "deal with people well". (ST 5)

As confirmed by Henriksen (2013), collocations are less frequently seen compared to single-word lexical items that constitute collocations. In this study, the pre-test revealed the learners failed to choose two possible prepositions for G1 collocations and selected the wrong prepositions for G2 collocations.

In terms of learners' collocational perception, the detailed analysis of the GJT showed collocational deviations. To begin with, the learners from both groups accepted the incorrect use of the prepositions "in", "at" and "with" when collocating with "upset", "amazed", "wrong" and "furious" as in sentences (30) to (33).

(30) Someone stole my bag. I was **upset in** leaving my smartphone which was inside the bag.
(31) Sarah was **amazed in** the morning news about an armless airplane pilot.
(32) George was **wrong at** ringing you so late at night when you were asleep.
(33) Jo's teacher is always **furious with** not getting attention from his students.



Moreover, the learners in the control group misjudged the use of the preposition "in" with the adjective "disappointed", as in sentence (34).

(34) Rose was **disappointed in** not getting a raise.

On the other hand, the learners in the experimental group had problems with two additional pairs, as seen in sentences (35) and (36). What should be observed is that the use of these prepositions is not acceptable in the given contexts.

(35) George was **wrong at** ringing you so late at night when you were asleep.
(36) The university asked every learner not to drink at last night's concert, so it was **free for** all kinds of alcohol drinks.

The underlying causes of the acceptance of the incorrect collocations could be transfer of training and the negative influence of their L1. The first factor can be explained by the fact that the learners' perception and production of language have been greatly influenced by teachers and teaching materials. Selinker (1972) explains that learners' interlanguage elements result from their previous learning experience as well as teachers and teaching materials. In the Thai educational system, teaching grammar is more highlighted and the significance of learning new words tends to be ignored (Boonyasaquan, 2009a, 2009b). Additionally, when learning new words takes place in classroom settings, the focus of teaching new vocabulary is on definitions and usage (Mallikamas & Pongpairoj, 2005). Wangsirisombat (2011) points out that the negligence in teaching vocabulary with emphasis on collocations and awareness of them is one important factor leading to the poor performance of Thai learners. It could be said that the learning of collocations in Thai educational settings has been neglected. The aforementioned factor leads to limited exposure to collocations as well as limited knowledge and awareness of them among learners.

The second factor can be explained by the fact that in learning a second language, there is a high occurence of first language transfer. Selinker (1972) points out that language transfer is the first and most obvious process that underlies interlanguage. According to Ellis (1994), forms and meanings of learners' L1 can be productively and receptively transferred to foreign languages and cultures. The transfer could lead to either positive or negative results. As stated by Nesselhauf (2003, 2005), language transfer has an impact on the learning of L2 collocations. The learners in this study, when experiencing the test items in the GJT, resorted to their first language. The learners accepted the usage of the prepositions "in", "at" and "with" because when those sentences are literally translated into Thai, the meanings of the adjective + preposition collocations can be understood. The incorrect collocations in this study are consistent with those of Phoocharoensil (2011, 2014), in that both high and low proficiency Thai learners had difficulties with collocations and one of the main causes of that was negative transfer. However, after the cooperative corpus consultation, the learners in the experimental group showed a considerable improvement. Firstly, the mean score in the GJT significantly improved. More

importantly, there were more experimental learners who were aware of the incorrect collocations, so the number of collocational errors significantly decreased with regard to the following pairs: “amazed in”, “disappointed in”, “upset in”, “wrong at” and “free for”.

In terms of collocation production, the very small number of learners who were able to successfully choose both correct prepositional collocates in certain GFT items reflected the low level of collocational awareness regarding variations of the target collocations. In fact, there were five items in the GFT which were designed to have two answers. These test items were designed to check learners’ collocational awareness as well as their overall production, as can be seen from (37) and (38).

(37) Parents are genuinely shocked _____ the widespread use of alcohol and drugs in school zones.

A. at B. to C. by D. of

(38) With the advent of modern technology, children tend to be more excited _____ computer games than traditional books and toys.

A. by B. for C. to D. at

The learners in both groups were informed of this possibility before taking the pre-test. However, there was only one learner from each group who was able to select both correct prepositional collocates in the pre-test. This could be a result of the transfer of training since word definition and usage is highlighted in the learning of new words. The learners’ attention was rarely drawn to collocations, in particular the grammatical aspects of collocations and their variations. Hence, little were they aware of possible collocational variations. What should be observed is that the number of times that the experimental learners were able to choose the items with two correct prepositional collocates in the GFT rose dramatically from once in the pre-test to 32 times in the post-test, showing a higher level of collocational awareness and a significant improvement in collocational productive ability.

The findings in this study support those of Cho (2016) in that the learners in the collaborative groups outdid those in the individual group, in particular when completing the conceptual task. Cho (2016) explains that the collaborative learners collaboratively conducted the data analysis in order to interpret the corpus data comprehensively. There are three possible factors which contributed to a higher level of collocational awareness and a substantial development of the collocational productive ability of the learners in the experimental group: promotive interaction during the cooperative corpus consultation, the observation of frequency in the concordance lines and learners' grammatical knowledge.

The first possible explanation for the significant improvement in the learners' perception and production could be mainly from the promotive interaction between the learners while completing the tasks. As discussed earlier, before they completed the treatment, the corpus consultation was a completely new learning experience for the learners. According to the pre-project questionnaire, none of the learners had ever heard anything about corpus or concordance lines. In fact, the cooperative corpus consultation provided the learners with a community where four members could co-work on the new tasks. To complete the unfamiliar tasks, the learners had to cooperate and interact with each other based on their weekly assigned role. According to Vygotsky (1987), when learners are given tasks beyond their ability, they should be provided initial aid from a "more knowledgeable peer". As stated by Johnson et al., (2014), cooperative learning encourages productive interaction and discussion where learners co-create conceptual understanding and provide each other with useful comments. The detailed analysis of the stimulated verbal protocol confirms that the experimental group learners received support from their peers during the group discussion, in the forms of sharing linguistic findings, and justification and evidence provision as well as feedback provision



The promotive interaction in the cooperative corpus consultation is beneficial to the experimental group in three aspects: increasing exposure to corpus data, hypothesis confirmation as well as hypothesis rejection, and query expansion. Each aspect is explained as follows.

To begin with, the promotive interaction between the learners in the same group can maximise exposure to the target collocations and their patterns. As

discussed earlier, the learners in this study had limited exposure to the adjective + preposition collocation pattern. Working on the corpus data involved observing, comparing, differentiating and interpreting the data, thus increasing the exposure to the target collocations to some extent. Discussing, reflecting and reasoning with their teammates can enhance the amount of corpus exposure as well as raise the learners 'awareness of the target pattern. The following excerpt (39) illustrates that the learner had a problem with the prepositional collocates. While discussing the problem with his team members, he received useful linguistic support from his friend in the forms of some more concordance lines until he understood clearly. On his own, he did not notice the use of the target adjective. The comments and some more concordance lines during the group discussion serve as scaffolding which promotes conceptual understanding.

(39) Normally, our group always raises problems for discussion. For example, when working on the adjective "grateful", I was confused about which prepositions could be used with people. When Pond (his teammate) pointed out that "grateful + to" collocates frequently with nouns referring to people, and he showed me the examples from the concordance lines, I understood clearly. (ST 6)

(40) "Learner: While working, I got confused. One of my teammates turned to do something. Then, she turned to me with more corpus samples and we looked through all the lines together. I was impressive"

In fact, more exposure to the target forms is believed to be beneficial as supported by Nation (2001) that word repetition is likely to promote the ability to retrieve.

Secondly, the cooperative corpus consultation promotes the process of hypothesis confirmation and rejection. The process of traditional corpus consultation is said to provide language learners opportunities to form a language hypothesis based on concordance line observation and test it (O'Keeffe & McCarthy, 2010; O'Keeffe et al., 2007). Commonly, learners' hypothesis is tested on their own, frequently leading

to uncertainty and confusion. Unlike the tradition corpus consultation, the learners proposed their findings based on their observation to the group. When their findings were compared and proven similar to their team members, the hypothesis they first formed was confirmed. On the other hand, when their findings were proposed, compared to their peers and proven different from those of the teammates, the hypothesis was rejected. This practice led to a higher level of confidence in forming and testing a language hypothesis as seen in (41) and (42).

(41) "Teacher: Ok, you observed the nouns, right? Today, I saw you talk to your friends. What was about?
Learner: I asked if the word had the same meanings as the given word in the tasks, and if they had the same opinions and answers as me?
Teacher: What did they say?
Learner: They first said they agreed with me. Then they checked their handouts and answers. It turned out they had the same answers." (ST 4)

(42) "I was a bit confused about finding the preposition collocating with the adjective "good", which conveys the meaning "dealing with something". I wasn't sure which prepositions could be used. At first, my answer was "good at", yet I found that "good at" means being able to do something well. I wondered if "good at" could be used interchangeably. Then, my teammates discussed and checked the use of nouns with "good at". We found it only refers to subjects or activities, so it should convey the meaning of being able to do something well. It can't convey the meaning of "dealing with something". (ST 1)



Thirdly, the promotive interaction promotes query expansion. With the cooperation of their team members, the experimental learners were able to come up with unexpected collocational patterns, which were derived from the observation and generalization during the cooperative corpus consultation. Although the researcher focused on two prepositional variations for each adjective, to provide the learners with the freedom and opportunity to explore various prepositional collocates, the researcher also encouraged them to summarize what they found from the data. This

confirms the observations of Sripicharn (2003) in that the learners were able to observe and provide unexpected explanations which were more sophisticated than those provided by the teacher. Excerpts (43) and (44) from the handouts from two different groups reveal that the experimental learners summarized additional findings as well as patterns including the two target prepositional collocates.

(43)

frightened of  N (common, gerund) = to feel feat to something
frightened of  N (abstract, N) = something makes someone scary
frightened to + V infinitive, N = to feel scare to something
frightened for + N (abstract, common, pronoun, gerund) = concerning

(44)

Different propositions have different meaning (Prepo *เปลียน ความหมายเปลี่ยน)*
generous with + noun =ใจกว้างกับ
generous of + pronoun =ใจกว้างของ
generous to + pronoun , noun = ใจกว้างต่อ
generous by + noun =ใจกว้างโดย
generous in + noun= ใจกว้างใน

This is in line with Ghaith's findings (2002) in that cooperative learning provided both academically and personally supportive classroom atmospheres. When working in a group, the experimental learners seemed to be more confident in exploring the corpus data, and observing and generalizing the collocational patterns as well as other findings beyond the tasks' requirement.

Another possible explanation for the significant improvement of the experimental group is that the observation of frequency in the concordance lines, in terms of prepositional variations and the subsequent nouns, enabled the learners to focus on the target collocations. The corpus data in the concordance lines have given them enough input and chances to observe the most frequent target collocations and suitable subsequent nouns, which is important for generalizing the target collocations.

This lends support to the findings of Sripicharn (2003) in that the integration of classroom concordancing seemed to be beneficial in drawing learners' attention to aspects of vocabulary, in particular, collocations and language patterns. In addition, the findings are in line with those of Granger (2011), who suggested that learners could observe and analyze corpus data according to three aspects: frequency, variations and co-texts. The learners in the present study, when dealing with the large number of concordance lines required to complete the given tasks, relied on the frequency criteria to facilitate the corpus consultation, as in (45) and (46).

(45) "I started by searching "surprised" to see what prepositions can follow it, and I looked at the frequency of each preposition. Then, I chose the most frequent prepositions before comparing and contrasting their meanings. Once we understood the meanings, our group continued observing the nouns which follow the prepositions". (ST 4)

(46) "Teacher: I heard that you and your friend said, "there is only one use of "over", so it is not important."
Learner: Yes
Teacher: What were you thinking of when saying that?
Learner: Of the 30 lines, there is only one which contains "over" so I think it is not necessary to focus on it. We should focus on other prepositions because they are used more frequently." (ST 6)



Furthermore, the patterns of the target collocations important to the learners' understanding include nouns that follow the target collocations. As a result, not only did the learners observe the frequent prepositions collocating with the target adjectives, but they also paid attention to the nouns which follow them, in order to form patterns, as seen in excerpts (47) and (48) from the verbal protocol scripts.

(47) "At first, I circled the prepositions following the adjective to see what prepositions can follow the target adjective, and then I wrote them down separately to see the most frequently used prepositions. I found "by, for, at and

to" are the most frequent collocates. Then, I looked at the types of noun which follow the prepositions, like abstract nouns, concrete nouns or object pronouns". (ST 1)

(48) "I looked at the nouns following the prepositions and I observed similar meanings. I found the following words frequently: facts, questions, presence and lack. (ST 4)

It was found that the cooperative corpus consultation as well as the materials raised the groups' collocational awareness, leading to learner noticing the variations of both prepositional and noun collocates. The following two excerpts were taken from the group handouts from two different groups. Excerpt (49) is from question 4 of the hands-on concordance-based handout distributed in week 8 and excerpt (50) is from question 4 of the hands-on concordance-based handout distributed in week 10. After the experimental group identified the prepositional collocates that could convey the same meaning, they were asked to find noun collocates following the adjective + prepositions.

(49)

| | |
|---|---|
| shocked by the fact | shocked at the price |
| shocked by the reaction | shocked at the lack |
| shocked by the outcome | shocked at the results |
| shocked by the fear | shocked at the widespread |
| shocked by the encounter | shocked at the time |

(50)

| upset about + thing | upset in + history | upset at idea | upset over death |
|---|---|---|---|
| fact | league | prospect | fact |
| way | way | way | way |
| people | people | people | prospect |
| conference | home | issue | plans |

Also, the study notes that the learners were able to generalize the patterns, and they came up with their linguistic hypothesis when they observed and analyzed the nouns following the adjective + preposition collocations from the concordance lines. For example, to the majority of Thai learners, the adjective “punished” refers to making someone suffer due to his or her crime or mistakes, and the adjective “frightened” means showing fear. However, the cooperative corpus consultation enabled the group to notice various noun collocates, discuss the findings and generalize the collocational patterns, as shown by excerpts (51) and (52).

(51) “I thought “punished” was easily observed since “punished with” occurred with nouns referring to punishments only, while “punished for” indicates the reasons why the people got punishments”. (ST 6)

(52) “When the adjective “frightened” means showing fear, the noun follows the prepositions “to, of, and with”. “When it means showing concern, it seems to have the preposition “for” only.” (ST 1)

This lends support to Hill (2000) in that integrating corpora and concordancers in language teaching and learning allows learners to investigate language patterns and adjust their misconceptions by observing naturally occurring examples in real texts. It could be noted that observing the frequency in the concordance lines is beneficial to the acquisition since it helps the learners to observe, hypothesize and generalize the collocational patterns. More importantly, the findings from the corpus data can be used as reliable evidence rather than their own intuition.



The present study also notes the difference between G1 and G2 collocations. As mentioned earlier, the pre-test showed that G1 collocations caused more problems to both groups. In fact, this particular collocation group was difficult for the learners during the cooperative corpus consultation. The possible cause might be the subtle meanings of noun collocates of G1 collocations. In fact, to generalize the pattern of G1 collocations, the learners were asked to explore the concordance lines, compare them and identify at least two prepositional collocates which did not affect the

meanings. By doing so, they needed to observe whether the nouns following the two prepositions were similar or not, which was much more difficult than identifying differences of nouns as seen in (51), (52) and one additional report in (53). All the reports came from three learners from three different groups.

(53)

> "G2 collocations seemed easier for us today. We focused on "grateful", and it was obvious from the observation that "grateful to" occurred with nouns referring to people. A lot of concordance lines showed that "grateful to" surely came with people." (ST 5)

The last positive factor that promotes the acquisition of the target collocations is the learners' grammatical knowledge. This supports the findings of Sun (2003) in that various factors contribute to concordancing outcomes, including prior knowledge of a specific linguistic form. During their cooperative corpus consultation, the learners were required to apply the five corpus strategies, which include comparing and differentiating, in order to complete their tasks. The experimental group learners' prior grammatical knowledge came into play since the learners rely on prior knowledge as a supporting tool and a facilitating tool. The following two excerpts illustrate how grammatical knowledge was useful to the learner while consulting the corpus. Excerpt (54) shows that the learner excluded a set of words based on their grammatical knowledge, while excerpt (55) reveals that their knowledge facilitated their differentiating strategy.



(54) "At first, I thought it would be right, but when I looked at the noun that followed, which is 'day', I realized it should have been "adverbs of frequency" that I was looking at". (ST 1)

(55) "Learner: I wrote which part of speech each word was."
Teacher: Why did you decide to write that?
Learner: It would be easy to differentiate and translate". (ST 3)

This is in good agreement with Sun (2003) in that despite the different degrees of prior knowledge among the learners, they all experience the various stages of learning. Sun explains that using a concordancer as a supporting tool enables learners with complete prior knowledge to prove their hypotheses and confirm their intuition and prior knowledge, while the concordancer could encourage learners with incomplete prior knowledge to investigate and build their own structural knowledge.

However, our results differ slightly to some extent from those of Cho (2015, 2016) in the following two aspects. In Cho's 2015 study, the researcher claims that the collaborative corpus consultation might impede the individual investigation learning process. In those two studies (2015, 2016), the learners experienced power inequality in the procedural task while working with their team, which put a burden on the less capable members. In the current study, the fact that power inequality was not observed could account for the first element, which is "positive interdependence" in cooperative learning. As Johnson and Johnson (2009) explain, interdependence can subsume three categories: outcome, means, and boundary. In this study, the first two factors – namely outcome interdependence and means interdependence – come into play. According to Johnson and Johnson (2009), outcome interdependence refers to goals and rewards while means interdependence refers to resources, roles and task interdependence. They further explain that various roles can be designed and assigned to group members so that each of them is responsible for one aspect of the assignments. In fact, when receiving each weekly task, the experimental group learners were aware of their goal. Also, each of the four learners in a particular group was assigned a different role each week – namely facilitator, secretary, collocation recorder and strategy recorder – to provide equal opportunities for each member to try each role and avoid manipulation by any of the members. It could be said that each of the members was given equal importance, resulting in a healthy environment of cooperative learning as shown in the following verbal reports.

(56) “Teacher: You have worked on the corpus with your team. What did you think about this?
Learner: I think working with my teammates means that we can share the work systematically. It is faster than working alone. Well, each one has their own responsibility to take care of and then, we can co-work during the discussion.” (ST 3)

(57) “Teacher: You have worked with your team four times. How do you feel about your team?
Learner: I think this team is a good one. Paveena is good at taking notes, so she always writes many details, while Pond has lots of knowledge and always sees interesting details. He can help in discussions.”(ST 6)

Concerning possible obstacles to individual investigation during learning process, the present study notes a healthy balance between cooperative working and individuality. During the observation, the researcher (as their instructor) observed where a particular group sat and worked on their tasks silently before starting the group discussion. When the members were asked if they had problems working together, two of the team members said that it was their preferable way of working. They tended to work on the tasks separately before they shared what they had learned from the concordance lines, as seen in the following two excerpts.



(58) “At first, we worked separately on the task. We tried to understand the data on our own. After that, we started a discussion. Mostly, we preferred this way”. (ST 3)

(59) “We silently work on our own before sharing what we have found”. (ST 5)

The healthy balance between individuality and cooperative learning could be explained by the two elements of cooperative learning: positive interdependence and individual accountability. According to Johnson and Johnson (2009), positive interdependence binds group members together, leading to a sense of responsibility

for doing an individual share of the work and for facilitating the work of other group members. Feeling responsible for the group's success, the experimental group learners provide themselves with the space to study and reflect on the corpus data, meaning that they complete their own part before they gather as a group and share their personal ideas. However, as suggested by Cho (2015), to prevent the loss of personal learning opportunities, the individual corpus consultation may occur before the collaborative corpus consultation.

Apart from the significant improvement of the experimental group in both tasks, the study notes a noticeable development of the control group learners in the GFT. The explanations for this development are listed as follows. The control group learners were given two training sessions like those for the experimental group. As discussed in Chapter 1, the previous corpus studies (Tasanameelarp & Laohawiriyanon, 2010; Yoon & Hirvela, 2004; Yoon & Jo, 2014) suggest training for corpus consultation. Moreover, as pointed out by Sripicharn (2003), the Thai learners in his study had a problem with inductive learning. Like the participants in Sripicharn (2003), the participants shared the same first language and were undergraduate learners. As a result, the researcher provided both the control and experimental group with the two training sessions, but the control group learners were not trained in the five elements of the cooperative strategies. The two training sessions – where the first one focuses on collocations, and the second highlights the five corpus strategies and some exercises – might have given the control learners a good start.



Another possible explanation might be that they worked on the paper-based handouts during the first five weeks. The paper-based handouts not only increased exposure to the target collocations, but also provided opportunities to practice the corpus consultation process at a manageable level. One of the demotivating factors from a corpus consultation can be an excessive number of concordance lines since it can lead to confusion. Hence, Gilmore (2009) states that teachers or researchers should provide support by editing concordance lines. The paper-based handouts distributed to both groups in weeks 1 to 5 were designed to facilitate the corpus consultation process with two sets of corpus data which had 30 concordance lines in each set. Managing sufficient and manageable input in the first place might have

facilitated their collocation learning since the learners could practice using the five corpus strategies: observing, comparing, differentiating, grouping and generalizing. The positive impact of the paper-based handouts can be seen from the comparison between the first and the second 'can-do' statement questionnaire. The first questionnaire was given after the two training sessions, and the second one was distributed after the five sessions of the paper-based handouts. The comparison reveals that the learners in the control group showed a much higher level of managing the corpus strategies after working on the paper-based handouts.

### 4.2 Learning strategies during the cooperative corpus consultation

#### 4.2.1 Quantitative and qualitative results related to learning strategies during the cooperative corpus consultation

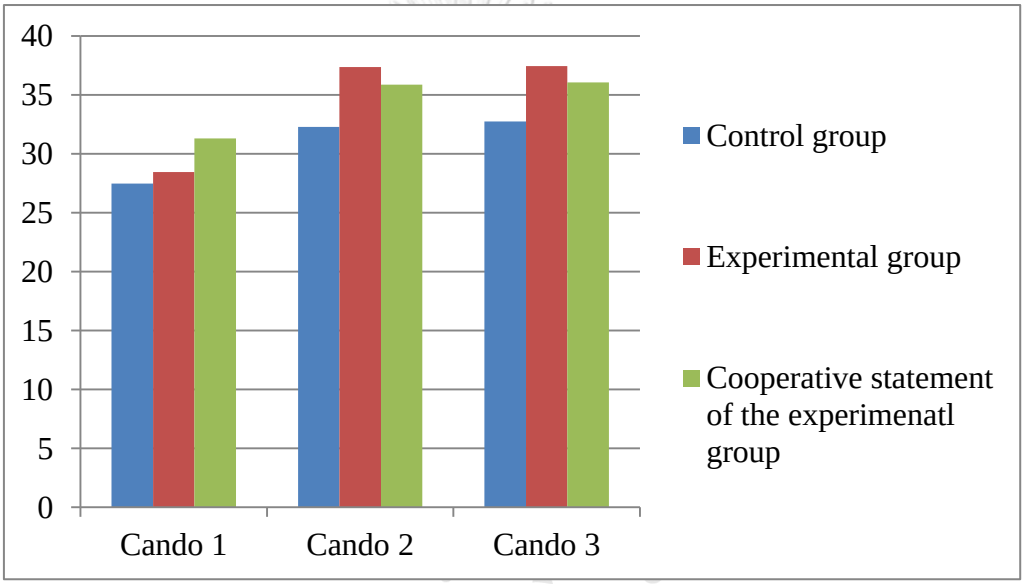
The second research question was posed to investigate the strategies which learners in both groups used to deal with the corpus consultation. The learners' strategies in this study were divided into two parts: the corpus strategies employed by both learner groups to deal with the concordance lines and the given tasks, and the cooperative strategies employed by the experimental learners to cooperate within the group. The corpus strategies consisted of the following strategies: observing, comparing, differentiating, grouping and generalizing. The cooperative strategies consisted of the five elements: positive interdependence, individual accountability, promotive interaction, social skills, and group processing. The following instruments were used during the treatment of both groups: the 'can-do' statement questionnaire and the reflective journal, while two instruments were used with the six learners selected from the experimental group: the observation schemes and the verbal protocol report.

To begin with, the 'can-do' statement questionnaire was administered three times with both groups: after the two training sessions, after the five sessions of the paper-based handouts and after the five sessions of the online activities. It was mainly employed to explore and compare the learners' self-assessment with regard to their ability to cope with the five corpus strategies (both groups) and the cooperative strategies (the experimental group).

Table 15 : Average scores of all three ‘can-do’ statement questionnaires

| | Control group | Experimental group | |
|---|---|---|---|
| | Corpus strategies | Corpus strategies | Cooperative strategies |
| | Mean scores | Mean scores | Mean scores |
| **CANDO1** | 27.47 | 28.44 | 31.30556 |
| **CANDO2** | 32.29 | 37.36 | 35.86111 |
| **CANDO3** | 32.73 | 37.44 | 36.05556 |

Figure 4 : Comparison of all three ‘can-do’ statement questionnaires






According to Table 15, both groups of the learners had similar levels of self-assessment right after the two training sessions. The experimental group learners showed a higher level of confidence in terms of how to handle the corpus process, as can be seen from the mean score of the first ‘can-do’ statement questionnaire, which was 28.44. In addition to the perceptions of the corpus strategies, they also checked their cooperative strategies, leading to an average score of 31.30. On the contrary, the control group rated their ability to deal with the corpus process at 27.47.

After the completion of the paper-based handouts over five weeks, both groups assessed their ability to handle the corpus process again. The data above revealed that both groups showed confidence in consulting the corpus and dealing with the five corpus strategies. However, the experimental group learners, who

worked cooperatively in their group, were more confident than those in the control group, as can be clearly seen from the average scores regarding the corpus strategies of the second ‘can-do’ statement questionnaire. The average scores of the experimental group were 37.36, rising sharply from 28.44, while those of the control group were 32.29, increasing from 27.47. The experimental group learners not only showed confidence in handling the corpus strategies, but also in dealing with their group members, as shown by the increase in the average score of cooperative strategies from 31.30 to 35.86.

Both groups then self-monitored for the last time after finishing the online activities and tasks. According to Table 15, the mean scores of both groups slightly increased from the second ‘can-do’ statement questionnaire. The mean scores of dealing with the corpus strategies were 32.73 in the control group and 37.44 in the experimental group. The same trend also occurred with the average scores of the cooperative strategy use, since the scores rose slightly from 35.86 to an average of 36.05 in the last questionnaire.

To understand the learners’ daily problems and solutions, the reflective journals were distributed and collected at the end of class eight times. The qualitative data from both groups was divided into small meaning units and each unit was given a code. The frequency was analyzed and is presented as follows:

Table 16 : Reflective journal reports on problems and strategies

| | Control | | Experimental | |
|---|---|---|---|---|
| **Problems** | Collocation forms and meanings | 69 | Collocation forms and meanings | 65 |
| | Tasks | 45 | Meanings of words | 34 |
| | Meanings of words | 39 | Different opinions | 21 |
| **Strategies** | | | | |
| Corpus Strategies | Observing strategy | 103 | Observing strategy | 124 |
| | Comparing strategy | 52 | Comparing strategy | 57 |
| | Differentiating strategy | 50 | Grouping strategy | 51 |
| | Grouping strategy | 42 | Differentiating strategy | 45 |
| Cooperative strategies | | | Promotive interaction | 98 |
| | | | Positive interdependence | 55 |
| Miscellaneous strategies | Seeking help | 120 | Technology | 70 |
| | Technology | 76 | | |
| | Use of L1 | 23 | | |

According to Table 16, both groups of learners shared similar problems and strategies despite some differences. Concerning their problems, a variety of prepositional collocates and various meanings of the target collocations caused the learners the most problems. The learners from both groups reported they had had problems comparing and differentiating nouns due to the subtle meanings of nouns as well as difficulties generalizing the collocation patterns. The next problem found in both groups' reflective journals was with meanings of individual words in the concordance lines. The learners described how unknown vocabulary impeded understanding of the concordance lines. Lastly, it should be noted that the learners in the control group viewed the unfamiliarity of the corpus and the questions in the tasks as obstacles, while those in the experimental group reported different opinions regarding what affected the corpus process in their groups.

In terms of the strategies employed during the corpus consultation, Table 16 reveals that some strategies were used in both groups, while other strategies were used in only one group. The strategies can be classified according to three groups: corpus strategies, cooperative strategies and miscellaneous strategies. The experimental group learners reported the use of four corpus strategies, two cooperative strategies

and one miscellaneous strategy, while the control group learners mentioned the same four corpus strategies and three miscellaneous strategies. To be precise, both groups reported the use of the following corpus strategies despite a slight difference in order of frequency: observing, comparing, differentiating and grouping. The experimental group learners reported the use of two cooperative strategies, namely promotive interaction and positive interdependence. The miscellaneous strategies which were reported by the control group are seeking help, technology and use of L1. Seeking help was described by the learners as asking their instructor and friends. Application of technology was described as using online dictionaries in finding the meanings of unknown words as well as the collocate function of the COCA in limiting the scope of a search. Use of L1 is when the learners use their mother tongue for translating the concordance lines and understanding collocation meanings.

Table 17 : Order of the strategies used during the corpus consultation

| | **Control group** | | **Experimental group** | |
|---|---|---|---|---|
| **Strategies** | Seeking help | 120 | Observing strategy | 124 |
| | Observing strategy | 103 | Promotive interaction | 98 |
| | Technology | 76 | Technology | 70 |
| | Comparing strategy | 52 | Comparing strategy | 57 |
| | Differentiating strategy | 50 | Positive interdependence | 55 |
| | Grouping strategy | 42 | Grouping strategy | 51 |
| | Use of L1 | 23 | Differentiating strategy | 45 |



Table 17 shows the order of the strategies each group employed during their corpus consultation. Despite the similarity regarding the use of the same four corpus strategies, both groups also adopted different strategies in order to solve problems during the treatment. In fact, the experimental group most frequently reported the application of the observing strategy. This was followed by promotive interaction, where they asked their teammates questions and discussed ideas with their team. When they encountered problems with vocabulary, they depended on technological tools. Additionally, when asked how they coped with various problems, the experimental group mentioned their reliance on other team members to achieve their group goal. However, the control group learners relied heavily on seeking help from

the instructor and their friends who sat next to them. Then, they applied the four corpus strategies, adopted the use of technology to search for word meanings and used their mother tongue to translate the concordance lines.

To get a whole picture of the strategies used, the six learners from the experimental groups whose scores were the highest, lowest and closest to the mean were invited to join the verbal protocol session to investigate their thinking processes. Throughout the whole treatment, the learners joined two training sessions to understand how they could verbalize their thoughts, and eight sessions of data collection after the cooperative corpus consultation. The data was segmented, coded and analyzed for frequency. Although the focus of the strategies used during the corpus process was on the five corpus strategies and the five cooperative strategies, all six learners revealed the use of miscellaneous strategies. Hence, focused strategies as well as miscellaneous strategies counted towards frequency are presented as follows.

Table 18 : Frequency of verbal protocol reports related to the strategies used during the cooperative corpus consultation

| Strategies | S1 | S2 | S3 | S4 | S5 | S6 | Total |
|---|---|---|---|---|---|---|---|
| **Corpus strategies** | | | | | | | |
| 1. Observing | 22 | 6 | 11 | 10 | 9 | 8 | 66 |
| 2. Comparing | 5 | 1 | 7 | 7 | 5 | 5 | 30 |
| 3. Differentiating | 5 | 2 | 3 | 2 | 4 | 3 | 19 |
| 4. Grouping | 6 | | 2 | 6 | 4 | 2 | 20 |
| 5. Generalizing | 10 | 3 | 4 | | 8 | 4 | 29 |
| **Cooperative strategies** | | | | | | | |
| 1. Positive interdependence | 2 | 1 | 4 | 6 | 4 | | 17 |
| 2. Individual accountability | 1 | 0 | 1 | | 2 | 1 | 5 |
| 3. Promotive interaction | 15 | 9 | 9 | 3 | 6 | 21 | 63 |
| 4. Social skills | 4 | 1 | 4 | | 6 | | 15 |
| 5. Group processing | 7 | 3 | 6 | 4 | 7 | 7 | 34 |
| **Miscellaneous strategies** | | | | | | | |
| 1. Symbols | 13 | 4 | 9 | 8 | 13 | 9 | 56 |
| 2. Technology | 1 | 5 | 4 | 2 | 1 | 1 | 14 |
| 3. Listing | 3 | | 3 | 1 | 1 | 2 | 10 |
| 4. Writing word meaning | 4 | | 3 | | | 3 | 10 |
| 5. COCA's function | 1 | | 2 | | 1 | 1 | 5 |

Table 18 illustrates that the following three corpus strategies were mentioned most: observing, comparing and generalizing. The first one was found a total of 66 times in the verbal reports of the six learners. The most frequently observed words were prepositions and nouns following the prepositions. The second and third strategies were similarly reported, 30 and 29 times, respectively. The least mentioned strategies were grouping and differentiating. Both strategies were similarly reported; grouping was reported 20 times whereas the differentiating strategy was reported 19 times.

In terms of the cooperative strategies, the strategy reported most frequently by all six learners was promotive interaction. All six learners reported the use of discussion, asking for clarification and justification, comparing, and asking for help from their team members despite the different styles of discussion. In fact, the verbal reports revealed that learners 3 and 5, who were from the same group, managed to maintain a balance between individuality and group discussion. Both learners reported that after receiving the handouts, they worked separately on the tasks and tried to understand the data before starting a group discussion and sharing their ideas. The second most frequently reported strategy was group processing. The six learners reported the assessment of their team members and the evaluation of their group work compared to the previous weeks. The use of the positive interdependence strategy and the use of social skills were the next most frequently reported strategies. The strategy which was least mentioned by all six learners was the use of individual accountability (see 3.3.1.1).



It is interesting to note that the six learners reported the use of miscellaneous strategies to complete their tasks. The most frequently reported strategy employed by all six learners was the use of symbols, namely the use of colored highlights and the use of other symbols such as circles, ticks and cross-outs. The learners used symbols to facilitate their corpus consultation as it helped them to easily observe and group the concordance lines. The second most frequently mentioned strategy was the use of technology. All the learners verbalized that when having difficulties with the vocabulary, they decided to look up the meanings of unknown words on their smartphones and in online dictionaries. Moreover, five out of six learners described the use of listing. In fact, four learners wrote a list of the most frequent prepositions

on their handouts to remind themselves which prepositions were frequently found. Some of the experimental group learners who joined the verbal protocol session mentioned writing word meanings in their L1 – which is Thai – on their handouts. Lastly, a few of them reported the use of the collocate function in the COCA to help them search for the target words more effectively.

The last instrument which was used to collect the six learners' behaviors and strategies was the observation scheme checklist developed from the five elements of the cooperative strategies. The classroom observation schemes were analyzed for frequency and the teacher's notes from each observation were analyzed using content analysis. The findings are presented below.

Table 19 : Observation scheme checklist related to the strategies used during the cooperative corpus consultation

| **Strategies** | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** | **Total** |
|---|---|---|---|---|---|---|---|
| 1. Promotive interaction | 10 | 10 | 10 | 10 | 10 | 10 | 60 |
| 2. The use of technology | 1 | 2 | 2 | 2 | 2 | 1 | 10 |
| 3. Seeking help | | 2 | 1 | 2 | 1 | 1 | 7 |

According to Table 19, all six learners employed promotive interaction the most. This finding is consistent with the verbal protocol reports, in which the learners themselves reported that they resorted to group discussion when having problems. This was particularly evident with learner 6. The finding can be observed from the teacher's notes as well as the video clips. The second most observed strategy was the use of smartphones to search for the meanings of unknown words. The last observation was that the vast majority of the learners asked for help from the teacher as well as their friends from other groups. When having problems with COCA's function, some of them posed a question to the teacher.

**4.2.2 Discussion of strategies used during the cooperative corpus consultation**

As stated in section 1.4, the second aim of the present study was to examine strategies the L2 learners use during the cooperative corpus consultation. To achieve this objective, one hypothesis was written. For convenience, the hypothesis presented in 1.5 is repeated below.

Hypothesis 2: L2 learners employ various strategies during a cooperative corpus consultation.

The findings confirm the hypothesis that L2 learners employ various strategies during a cooperative corpus consultation, including corpus strategies, cooperative strategies and miscellaneous strategies. To be precise, the first four corpus strategies – namely observing, comparing, grouping and differentiating – were reported the most. Regarding the two cooperative strategies, the learners used promotive interaction and positive interdependence the most. In addition, they employed miscellaneous strategies, such as using online dictionaries and the COLLOCATE function in the COCA.

To start with, the explanations of the use of corpus strategies by both groups are discussed. The corpus strategies in this research study were developed from the four cognitive skills of Sun (2003), resulting in the five corpus strategies: observing, comparing, differentiating, grouping and generalizing. What should be observed is that the experimental group learners reported the use of the first four strategies more often than the generalizing strategy. It could be explained by the fact that the observing strategy is the first fundamental strategy used in analyzing concordance lines, and the learners managed to use it because the concordance lines show obvious evidence for the learners, such as what prepositions are found and what prepositions and nouns are frequently used together. Accordingly, they tended to effectively manage their use of the comparing, grouping and differentiating strategies based on their observations. The qualitative data from both the reflective journals and the verbal protocol report yielded the same findings, in that the two most frequently used strategies were the observing and comparing strategies, respectively. However, the six learners from the verbal protocol sessions mentioned the more frequent use of the generalizing strategy than the grouping strategy. Like the experimental group learners,

the control group learners employed similar strategies: observing, comparing, differentiating and grouping. What should be observed is that the data in the present study could not confirm whether or not the learners followed the five corpus strategies one by one and in the given order. This is in line with Sun (2003), who pointed out that despite the classification of the four stages, some effective learners might have the ability to combine some of the stages into one, and they might not follow the four stages in the given order during the corpus data consultation.

The use of the three strategies – namely promotive interaction, the use of technology and positive interdependence – by the experimental group learners while encountering problems during the cooperative corpus consultation is discussed as follows.

To begin with, the cooperative environment allowed the learners to become familiar with the assigned tasks and with each other. The cooperative learning environment also allowed them to interact frequently. When completing the very new and challenging corpus tasks, the learners shared their hypothesized findings from the preliminary consultation and compared with their teammates. If they had similar findings, their hypothesized findings were confirmed. On the other hand, when they had different opinions and findings, they provided their own justification and supporting evidence in the form of concordance lines or background knowledge. The reflective journals show that the majority of the learners in the experimental group relied on the group discussion as a way to solve their problem, as seen in (60) and (61).



(60)

"During the cooperative corpus consultation, our group members had different opinions. What we did to solve this problem was we explained our thoughts, exchanged ideas with justification and listened to the majority of the group."

(61)

"We spent too much time on each activity since we were not sure whether we were right. We then consulted one another and made a group decision."

What should be observed is that when asked to share something with the class, most of them tended to keep silent. This shows that the learners felt less anxious to express their opinions when working in a group as in (62).

(62)

> "The group discussion helped me to express my opinions in a group. It stimulated me to discuss since we had different views in our group."

(63)

> "Working on the corpus process might be useful for increasing skills, but working in a group was faster since we brainstormed and helped one another. I could ask my friends in the same group anytime."

This is in line with the findings of Wichadee and Orawiwatnakul (2012) in that the cooperative learning environment results in less anxiety among learners, so that they can discuss, create, and think in a group rather than in a whole class. What is more, the learners acknowledged the usefulness of positive interaction. In fact, the reflective journals show that the brainstorm during the promotive interaction sped up their working processes as in (63). In addition, some learners stated that the problems could be tackled faster since they could turn to their peers anytime to ask for clarification.



The second most frequently reported strategy in the reflective journals is the use of technology, which covers the use of online dictionaries and some functions of the COCA. The data from both the reflective journals and the verbal protocol report pointed out that the learners struggling to understand unknown words in the concordance lines turned to their smartphone dictionaries during the paper-based handout activities and online dictionaries during the online tasks in order to look up the meanings of such words.

(64)

> "We used a dictionary application in our phone to search the unknown words in the concordance lines."

(65)

"We used to context clues first. When it did not work, we used a dictionary."

This could be explained by the fact that the majority of Thai learners are used to applying technology when studying languages, so they resorted to using their device during the cooperative corpus consultation. In fact, this could be seen as evidence of the problem solving skills of the learners. In addition, the learners frequently reported the use of the COLLOCATE function in the COCA. Realizing the benefit of using this function, the learners eagerly learned how to apply it and were willing to use it during the group work. They mentioned that this function facilitated and sped up the process of searching, as in (66) and (67).

(66)

"Observing the frequency of prepositions after the adjectives was easier and quicker. We used the function (COLLOCATE) the teacher taught use and it gave us a list of prepositions. We chose the most frequently used prepositions to start with."

(67)

"When we were interested in a pair of adjective + preposition, we used the function (COLLOCATE), typed both words and got the sentences quickly."



The study notes from the verbal protocol analysis report show that the less proficient learners are more likely to depend on technological tools, in particular when using dictionaries. This is partly due to their limited collocational knowledge.

The last strategy that the experimental group learners frequently employed is positive interdependence. The reason behind its frequent use might be the learners' positive attitudes towards group participation. In fact, the learners felt more motivated to work in a group where everyone worked together, discussed ideas, and shared ideas rather than working alone in a traditional learning style and competing with each other individually. The learners reported that the atmosphere of the cooperative corpus consultation was supportive. This supports Suwantarathip and Wichadee (2010) and Wichadee and Orawiwatnakul (2012) in that cooperative learning is

suitable for Thai contexts because it not only reduces competitiveness and individualism, but also promotes opportunities to actively construct or transform knowledge among learners. Moreover, the learners reported in the reflective journals that they divided the tasks between themselves to complete their tasks faster, which reduced their burden. In addition to the use of strategies, the cooperative corpus consultation might have had positive effects on the learners' perception of strategy management. The study notes that the experimental group learners seemed to have higher levels of confidence in managing both corpus tasks: the paper-based handouts and the online activities, as can be seen from the findings of the 'can-do' statement questionnaires in Table 15 in 4.2.1. This might be because the supportive atmosphere of the cooperative corpus consultation might have increased the learners' confidence in applying the five corpus strategies.

(68)

"We worked according to the given roles. It was quite fast, so we could interpret the data and generalize the patterns."

(69)

"We got the tasks done quickly because each one did their best according to the role."



The analysis of the reflective journals also reveals similarities and differences between the control and the experimental group regarding strategies used to cope with corpus consultation problems. The control group learners employed the following three strategies the most: seeking help from their teacher and friends, the use of technology such as dictionaries and the use of their L1. Only the first and the last strategy are discussed since the use of technology was discussed earlier.

The most reported strategy in the control group was seeking help from the teacher and their peers. The control group learners who were used to a teacher-centered approach in traditional classrooms sought both linguistic and technical help as well as clarification on the tasks from the teacher, as in (70) and (71). This is in line with Sun (2003) in that the participant in Sun's study frequently relied on the

teacher's intervention since she was not familiar with data-driven learning. Moreover, the fact that the control group learners sought help from the teacher and their friends confirms the findings of Tasanameelarp and Laohawiriyanon (2010).

(70)

"Corpus was new to me. I was confused, so I asked the teacher."

(71)

"I asked the teacher and my friends next to me. If they could not answer, we asked the teacher."

What should be observed is that the seeking of help from friends during a traditional corpus consultation might not be as beneficial as promotive interaction taking place during a cooperative corpus consultation, for the following reasons. Firstly, asking for feedback and providing each other with support in an unsystematic way might not yield promising results. In fact, the control group learners worked on the tasks separately, solved problems inductively and found their own individual learning problems. Realizing their own problems, they sought help from their friends whose pace of learning was different.

On the contrary, when working on and completing the corpus tasks, the experimental group learners applied two of the cooperative strategies, namely promotive interaction and group processing (see 3.3.1.1). As discussed earlier, the promotive interaction had a positive effect on the learning of the target collocations. Moreover, the group processing tended to have a positive impact because the experimental group learners were encouraged to reflect on the opinions of their peers and the effectiveness of their peers' actions, and to decide on which opinions and actions should remain or be changed. As Johnson, Johnson, and Smith (2014) state, group processing could lead to a simpler learning process, elimination of unskilled and inappropriate actions and improvement of learners' skills as part of a team. In fact, the six observed learners in the experimental group verbalized that they had observed their peers and assessed their teammates' performance for the whole semester. As a result, the seeking of help among the control group learners might not have been as effective as among the experimental group learners. Secondly, the

atmosphere of the traditional corpus consultation might have been competitive rather than supportive, as discussed earlier. Some learners might not have been willing to share their findings with others since they had no feelings of having a shared goal. Lastly, seeking help from the teacher might not promote the sense of autonomous learning in the long run. According to O'Sullivan (2007), process-oriented corpus activities promote self-monitoring and regulation of cognitive work, and they help improve learners' cognitive and metacognitive abilities, enhancing autonomous learning.

Another frequently mentioned strategy is the use of the learners' first language in learning. In fact, not only the control group learners employed their L1 in learning, but the experimental group learners did so too. The learners reported that they had used their L1 in writing the definitions in order to facilitate the corpus process. Some reported that it helped when they studied the concordance lines, as seen in (72) and (73).

(72)

"What I did was I translated each concordance lines into Thai."

(73)

"I compared the same collocations from different concordance lines and translated them into Thai."



Despite the controversy regarding the use of L1 in classroom settings, the study notes that their L1 was used as a tool in understanding and remembering. According to Cook (2001), learners' first language can be used to create links between two languages, ranging from conveying meanings and explaining grammar to, more importantly, individual strategy use. Teachers should pay attention to learners' learning styles and preferences. In fact, Oxford (2003) states that no learning strategy is good or bad, and that there are some conditions which make a learning strategy positive, such as good relationships between strategies and tasks, effective application of strategies, and good coordination between strategies and learners' learning styles. She affirms that strategies meeting the conditions "make learning easier, faster, more

enjoyable, more self-directed, more effective, and more transferable to new situations" (Oxford, 1990, p. 8).

This study notes that there was some discrepancy between the learners' self-rated scores on the strategies and the actual reports in the reflective journals. As reported in 4.2.1, the analysis of the 'can-do' statement questionnaires of the learners in both groups showed a higher level of their perception of the corpus strategy management. However, this might be considered as learners' over-estimation since the findings of the 'can-do' statement questionnaires were not consistent with their actual performance in class and their daily reports. In fact, the generalizing skill was the least reported skill in the reflective journals and the most difficult skill for the six verbal protocol learners. According to Griffiths (2003), learners' self-reports might not represent their real use of vocabulary learning strategy. In this study, the learners perceived that they could employ all the five corpus strategies in learning collocations through corpus consultation, but they had some difficulties managing all the five strategies during the corpus consultation.

### 4.3 Learners' attitudes towards the cooperative corpus consultation

#### 4.3.1 Quantitative and qualitative results related to the learners' attitudes towards the cooperative corpus consultation

In addition to the effects of the cooperative corpus consultation on the acquisition of adjective + preposition collocations and the learners' strategies, the learners' attitudes towards the application of the corpus consultation were also explored by employing the post-project questionnaire and the reflective journals. The post-project questionnaire contained two sections. The first section was divided into two parts. The first part focused on positive attitudes towards the paper-based handouts and the online tasks, according to the five corpus strategies: observing, comparing, differentiating, grouping and generalizing. It also focused on the learning of the target collocations. Meanwhile, the second part dealt with negative attitudes towards the paper-based handouts and the online tasks, according to the five corpus strategies: observing, comparing, differentiating, grouping and generalizing. It also dealt with the learning of the target collocations. The first section was comprised of

24 questions on a five-point Likert scale. The second section was employed to discover the attitudes of the experimental group learners towards the cooperative corpus consultation. This section was comprised of 12 items.

Table 20 : Analysis of the attitudes towards the usefulness of the paper-based handouts

| | | **Control group** | **Experimental group** |
|---|---|---|---|
| **Item** | | **Mean** | **Mean** |
| 1 | Usefulness of the paper-based handouts on observing strategy | 4.02 | ** 4.42 |
| 2 | Usefulness of the paper-based handouts on comparing strategy | 3.68 | 4 |
| 3 | Usefulness of the paper-based handouts on differentiating strategy | 3.63 | 4 |
| 4 | Usefulness of the paper-based handouts on grouping strategy | 3.52 | 3.89 |
| 5 | Usefulness of the paper-based handouts on generalizing strategy | 3.36 | 3.69 |
| 6 | Usefulness of the paper-based handouts on learning the target collocations | 3.76 | 3.94 |

** Strongly agree

Table 21 : Analysis of the attitudes towards the usefulness of the online tasks

| | | Control group | Experimental group |
|---|---|---|---|
| **Item** | | **Mean** | **Mean** |
| 7 | Usefulness of the online tasks on observing strategy | 4.10 | ** 4.42 |
| 8 | Usefulness of the online tasks on comparing strategy | 3.71 | 4.03 |
| 9 | Usefulness of the online tasks on differentiating strategy | 3.63 | 4 |
| 10 | Usefulness of the online tasks on grouping strategy | 3.57 | 3.92 |
| 11 | Usefulness of the online tasks on generalizing strategy | 3.23 | 3.86 |
| 12 | Usefulness of the online tasks on learning the target collocations | 3.65 | 4 |

** Strongly agree

The findings from the questionnaire showed that the attitudes towards the application of the paper-based handouts and the online tasks were relatively similar in both groups. The means of each item were found to be above the middle point (3) on the five-point rating scale. It can be said that both groups considered that the employment of both tasks was useful. However, the experimental group learners showed more positive attitudes. To be precise, the mean scores of items 1, 2, 3, 7, 8 and 9 were 4 and above in the experimental group, while only items 1 and 7 had mean scores higher than 4 in the control group, It was clearly seen that the use of both tasks was considered by both groups to be useful, in particular with regard to the observing strategy as the mean scores of items 1 and 7 were higher than 4. In fact, the learners in the experimental group strongly agreed that the use of the paper-based handouts as well as the online tasks helped them to observe the concordance lines. In general, the majority of the learners in the experimental group agreed on the usefulness of the

paper-based handouts and the online tasks with regard to the rest of the strategies as well as their collocation learning. What should be observed is that the learners in the control group showed uncertainty towards the usefulness of the paper-based handouts and the online tasks with regard to the generalizing strategy, which is important for corpus consultation.

Table 22 : Analysis of the learners' attitudes towards the complication of the paper-based handouts

| | | **Control group** | **Experimental group** |
|---|---|---|---|
| **Item** | | **Mean** | **Mean** |
| 13 | Complication of the paper-based handouts on observing strategy | 3.52 | 3.53 |
| 14 | Complication of the paper-based handouts on comparing strategy | 3.63 | 3.47 |
| 15 | Complication of the paper-based handouts on differentiating strategy | 3.65 | 3.56 |
| 16 | Complication of the paper-based handouts on grouping strategy | 3.63 | 3.41 |
| 17 | Complication of the paper-based handouts on generalizing strategy | 3.94 | 3.56 |
| 18 | Complication of the paper-based handouts on learning the target collocations | 3.44 | 3.42 |

Table 23 : Analysis of the learners' attitudes towards the complication of the online tasks

| | | Control group | Experimental group |
|---|---|---|---|
| **Item** | | **Mean** | **Mean** |
| 19 | Complication of the online tasks on observing strategy | 3.23 | 3.47 |
| 20 | Complication of the online tasks on comparing strategy | 3.52 | 3.47 |
| 21 | Complication of the online tasks on differentiating strategy | 3.5 | 3.38 |
| 22 | Complication of the online tasks on grouping strategy | 3.57 | 3.28 |
| 23 | Complication of the online tasks on generalizing strategy | 3.57 | 3.44 |
| 24 | Complication of the online tasks on learning the target collocations | 3.47 | 3.42 |

Concerning the learners' negative attitudes towards the use of the paper-based handouts with regard to the five corpus strategies and overall learning, it was found from Table 23 that the overall mean scores of items 13-18 were relatively similar, ranging from 3.41 to 3.56. Overall, the interpretation of the mean scores indicated that both groups agreed on the complication of the paper-based handouts with regard to all five of the strategies as well as learning the target collocations. However, there were some differences between the two groups with regard to negative attitudes towards the online tasks, as seen in Table 23. The learners in the control group reported neutral attitudes towards the complication of the online tasks, with regard to the observing strategy, while the learners in the experimental group reported uncertainty regarding the complication of the online tasks according to two strategies, namely the differentiating strategy and the grouping strategy. Both groups shared the same

attitudes towards the complication of the online tasks with regard to comparing, generalizing and learning the target collocations.

Table 24: Analysis of the learners' positive attitudes towards the cooperative corpus consultation

| | | **Percentages of the learners** | | | | | **Mean** |
|---|---|---|---|---|---|---|---|
| **Item** | | **5** | **4** | **3** | **2** | **1** | |
| 25 | Usefulness of the cooperative corpus consultation on observing strategy | 52.8 | 38.9 | 5.5 | 2.8 | | ** 4.42 |
| 26 | Usefulness of the cooperative corpus consultation on comparing strategy | 50 | 41.7 | 5.5 | | 2.8 | ** 4.36 |
| 27 | Usefulness of the cooperative corpus consultation on differentiating strategy | 44.4 | 52.8 | 2.8 | | | ** 4.42 |
| 28 | Usefulness of the cooperative corpus consultation on grouping strategy | 41.7 | 52.8 | 5.5 | | | ** 4.36 |
| 29 | Usefulness of the cooperative corpus consultation on generalizing strategy | 38.9 | 44.4 | 16.7 | | | ** 4.22 |
| 30 | Usefulness of the cooperative corpus consultation on learning adjective +preposition collocations | 38.9 | 55.5 | 2.8 | 2.8 | | ** 4.31 |

** Strongly agree

With regard to the attitudes towards the cooperative corpus consultation, the results of the questionnaire suggested that the learners in the experimental group had positive attitudes towards the use of the cooperative corpus consultation, according to

all five strategies as well as learning the target collocations. Table 24 shows that the mean scores of items 25-30 were all higher than 4. To be precise, approximately half of the learners strongly agreed on the usefulness of the cooperative corpus consultation with regard to the observing strategy and the comparing strategy. Moreover, more than 40 % of them strongly agreed that the cooperative corpus consultation helped them differentiate and group the concordance lines. Nearly 40% of the learners strongly agreed that a corpus consultation with a group of friends facilitated the generalizing strategy. In general, the majority of the learners in the experimental group revealed positive attitudes towards the cooperative corpus consultation on learning adjective + preposition collocations. To be precise, 39% of them strongly agreed and 55% of them agreed on the usefulness of the cooperative corpus consultation with regard to learning the target collocations.

Table 25 : Analysis of the learners' negative attitudes towards the cooperative corpus consultation

| | | **Percentages of the learners** | | | | | **Mean** |
|---|---|---|---|---|---|---|---|
| **Item** | | **5** | **4** | **3** | **2** | **1** | |
| 31 | Observing collocations individually | | 5.6 | 11.1 | 38.9 | 44.4 | 1.78 |
| 32 | Comparing collocations individually | | 2.8 | 5.6 | 38.9 | 52.7 | 1.58 |
| 33 | Differentiating collocations individually | | 2.8 | 8.3 | 38.9 | 50 | 1.63 |
| 34 | Grouping collocations individually | | 2.8 | 11.1 | 36.1 | 50 | 1.67 |
| 35 | Generalizing collocations individually | | 8.3 | 8.3 | 27.8 | 55.6 | 1.69 |
| 36 | Learning adjective + preposition collocations individually | | 2.8 | 16.7 | 36.1 | 44.4 | 1.77 |

The last six items of the post-project questionnaire were employed to elicit the negative attitudes of the experimental group learners towards the cooperative corpus consultation. The results of the post-project questionnaire pointed out that the learners strongly disagreed on the idea of individual corpus consultation, as can be seen from the mean scores of items 31- 36, which were all under 1.80. It can be clearly seen from Table 25 that the majority of the learners preferred to employ all five of the strategies with a group of friends rather than consult the corpus individually. However, it is interesting to note that a few learners reported that they would rather observe and generalize the concordance lines on their own.

To have a clearer picture of the attitudes towards the corpus consultation, both groups were given a reflective journal in which one of the questions focused on the advantages of the corpus consultation. After the process of segmentation and coding was completed, the codes were counted, and they are presented in Table 26 below.

Table 26 : Analysis of the learners' attitudes towards the cooperative corpus consultation

| | **Control group** | | **Experimental group** | |
|---|---|---|---|---|
| Positive attitudes | Collocational knowledge | 182 | Collocational knowledge | 120 |
| | Confidence and future use | 80 | Confidence and future use | 101 |
| | Strategies | 43 | Strategies | 56 |
| | Corpus process | 14 | Unity/ Group work | 15 |
| | Retention | 10 | Retention | 11 |
| Negative attitudes | Corpus process | 39 | Corpus process | 48 |
| | Technology | 26 | Physical problems | 9 |
| | Time | 23 | Time | 8 |
| | Low motivation | 6 | Technology | 7 |

It was found from Table 26 that both groups had similar attitudes towards corpus consultation. It can be clearly seen from the first three mentioned advantages from their reflective journals. To begin with, both groups considered the corpus

consultation process the most useful process for their collocation learning, as can be seen from the collocational knowledge code, which has the highest number. Secondly, investigating the concordance lines increased their confidence in writing as well as reading, and the possibility of native-like use of collocations in the future. The third advantage found in both groups was the development of other learning strategies, such as observing, analyzing and generalizing patterns from the concordance lines. The least mentioned advantage in both groups was word retention. Both groups agreed that the process of corpus consultation helped them remember the target collocations better. However, the fourth advantage of each group differed. While the control group considered the corpus and the COCA as additional resources for vocabulary learning, the experimental group learners viewed using them as an opportunity to work with their teammates. More importantly, the allocation of duties in their group enabled them to have different perspectives based on each role, distribute work responsibilities and solve problems within their group.

In terms of negative attitudes towards the corpus approach, both groups had more or less the same negative attitudes towards the corpus consultation. To begin with, the learners in both groups considered the corpus process difficult and complicated, and they felt there were too many concordance lines to analyze, particularly when working on the online tasks. Next, the learners from the experimental group reported some physical problems, such as eye strain from staring at the computer screen and from analyzing a large number of concordance lines. However, the second negative attitude of the control group learners was regarding technological problems, such as internet problems and the website itself. In fact, technological problems were also mentioned by the learners from the experimental group, as can be seen in Table 26. It should be observed that both groups shared a negative attitude towards time allocation and time management for task completion. However, the learners in the control group reported this problem more frequently; the number of reports in this group was 23, compared to just eight in the experimental group. Lastly, the control group learners mentioned their boredom, confusion and low motivation in their reflective journals.

**4.3.2 Discussion of the learners' attitudes towards the cooperative corpus consultation**

As presented in section 1.4, the third aim of the present study was to study the L2 learners' attitudes toward a cooperative corpus consultation. To achieve this objective, one hypothesis was written. For convenience, the hypothesis presented in 1.5 is repeated below.

Hypothesis 3: L2 learners have positive attitudes towards cooperative corpus use.

It was found that the experimental learners had positive attitudes towards the approach, in that they preferred to work cooperatively on the corpus tasks, and they felt the cooperative corpus consultation promoted the five corpus strategies. Also, it was found that the control group had positive attitudes towards the traditional corpus approach. This confirms previous studies related to classroom-based research concerning classroom concordancing (Chan & Liou, 2005; Sripicharn, 2003; Yoon & Hirvela, 2004). The first three positive attitudes reported by the experimental group are the learners' awareness of the usefulness of the approach, the confidence in future use and the practice of useful strategies. What should be observed is that not only did the experimental group learners report the three advantages, but the control group learners also reported the three benefits in the same order.



The first explanation for their positive attitudes comes from the learners' awareness of the usefulness of the approach, with regard to improving their collocational knowledge. In their reflective journals, the learners in both groups reported that they were more aware of the target collocations in terms of the variety of prepositional collocates. In addition, they were more aware of the similarities and differences of the target collocations in terms of meanings, so they thought they were able to use the target collocations more effectively, as seen in the following two excerpts which are from the reflective journals from both groups.

(74)

Learning collocations through the cooperative corpus consultation enabled me to notice the differences between various prepositions. Moreover, I now gained more knowledge about how some adjectives should be used with some prepositions and their frequent uses. (Experimental group)

(75)

It enabled me to observe how words are used and their parts of speech. In fact, I gained more knowledge about collocations which were completely new to me. I knew more about which adjectives can occur with which prepositions. Also, I am much more aware of similarities and differences of collocations. (Control group)

Secondly, both the cooperative corpus consultation and the traditional corpus consultation had a positive effect on the level of the learners' confidence in writing as well as reading, and in native-like use of collocations in the future. The learners mentioned in their reflective journals that they felt more confident in using the target collocations, and that they could use them in their writing as well as recognize them in their reading, as in (76) and (77). The findings are in line with those of Sripicharn (2003) in that the learners were aware of the advantages of using concordance-based tasks as a tool to raise consciousness of the patterns and use of the target items. Also, the findings are consistent with those of Yoon and Hirvela (2004) in that their learners perceived the corpus approach to be advantageous for the improvement of L2 writing skills, and they increased their confidence in L2 writing. However, there was still no measurement in the ability to produce collocation in real writing tasks in this study.



(76)

The usefulness is that I can use the adjective + preposition collocations correctly both in my writing and sentences. (Experimental group)

(77)

I can use these collocations in my future writing and reading correctly. (Control group)

The third mentioned positive attitude of both groups is the learners' awareness of useful learning strategies in general, particularly the observing strategy. The learners wrote that the corpus-based learning enabled them to practice observing as well as other strategies such as comparing and analyzing. This could be explained that both groups of learners saw a chance of collocation and skill development from the corpus consultation, despite the unfamiliarity of the new learning approach, as seen in the following two excerpts.

(78)

It helped me practice the observing, thinking, analyzing and grouping skills. The corpus teaches us to compare and observe patterns of words. (Experimental group)

(79)

The usefulness is that the practice of observing and analyzing skills. (Control group)

Despite the acknowledgment of the positive impacts of the cooperative corpus consultation, the experimental group learners as well as the control group learners were aware of the challenges and difficulties resulting from the approach and reported the following problems in their reflective journals: difficulty with the corpus process, time constraints, and technological problems. The negative attitudes regarding the corpus process, the technology and the time constraints are not surprising since they are in line with the previous studies (O'Sullivan & Chambers, 2006; Varley, 2009).

To start with, difficulty during handling corpus process was the most mentioned in the reflective journals. The learners in both groups reported that they had difficulty with the corpus process especially when the stage of the hands-on concordance based tasks began, as seen in the excerpts below.

(80)

When I started using COCA, I found that it was more difficult than the handouts the teacher gave in class. Once we spent more time with it, I started to gain more ideas how to do it. The process was time-consuming, so all of my teammates helped each other. (Experimental group)

(81)

Using the corpus is something new to me and my friends so we needed time to learn it. At first, it was really difficult and I still didn't know how to do it. (Control group)

The second negative effect reported by both groups is from time constraints. Dealing with a new learning approach in an inductive learning with several authentic samples is challenging to the learners. Moreover, the corpus consolation lasted approximately 50 minutes after class. As a result, the learners found that they needed more time as seen in (82) and (83).

(82)

We wasted too much time on each item in the task. (Experimental group)

(83)

The time was not enough since I needed to read every single sentence. Reading every sentence was time-consuming. (Control group)

The last negative effect found in both groups is from technological problems. The most mentioned problem ranges from the internet coverage to the website COCA itself. This particular problem was frequently reported after the stage of the hands-on concordance based tasks, as in (84) and (85).



(84)

The searching was very slow due to the internet problem. (Experimental group)

(85)

I had a problem logging into the system so it was very slow. (Control group)

Although the two groups shared some similar negative attitudes, they differed in that some of the control group learners wrote about their confusion and boredom. Like other learners in previous studies, the control group learners' unfamiliarity with corpus consultation and inductive learning meant that they encountered the mentioned problems while individually consulting the corpus. The following excerpts taken from

the reflective journals written by two learners in the control group show their boredom and demotivation in a traditional corpus consultation.

(86)

It is hard for me to use the corpus. I tried really hard not to get bored.

(87)

I couldn't understand and it was so difficult so I was not eager to make a search.

These particular attitudes are a concern since they might affect their motivation to adopt the corpus consultation themselves in the future. The learners in the experimental group seemed to be more motivated, which might have resulted from the cooperative corpus consultation. As mentioned earlier, the learners in the experimental group reported a high level of satisfaction with the cooperative corpus consultation. The reflective journals as well as the verbal protocol reports revealed that the learners felt a sense of community where each member had equal responsibility for the team's success. In fact, when they had a problem, they relied on each other and tended to be more actively engaged during the group discussion.

# CHAPTER V
# CONCLUSION

This chapter concludes the study. Section 5.1 concludes the major findings based on the hypotheses of the study as well as evaluating the extent to which the hypotheses were supported. Then, some theoretical and pedagogical implications are provided in 5.2. and 5.3, respectively. Section 5.4 discusses the limitations of the study as well as recommendations for future studies.

## 5.1 Conclusions

The conclusions are made in accordance with the three hypotheses of this thesis.

The first hypothesis of the study was that the cooperative corpus consultation would have better effects on the acquisition of adjective + preposition collocations than corpus-based instruction. The hypothesis was supported. The qualitative findings suggested that the cooperative corpus consultation was more effective than the traditional corpus consultation in maximizing collocational knowledge both receptive and productive knowledge. The outstanding performances of the experimental group were attributed to potential of the method to facilitate collocation learning. Firstly, the method encouraged the learners' active involvement in their group in the form of group discussion. Secondly, the selected concordance lines in the paper-based handouts and the concordance format in the online activities provided enough data for the learners to observe the frequency of the target collocations, in terms of collocational variations and their meanings; there were a greater number of encounters with such variations and meanings while working with their teammates. Lastly, it activated the learners' grammatical knowledge during the cooperative corpus consultation, in which they were able to test and confirm their hypotheses.

The second hypothesis was that the L2 learners would employ various strategies during the cooperative corpus consultation. The hypothesis was proven to be correct by the results. The experimental group employed three groups of strategies during the cooperative corpus consultation: corpus strategies, cooperative strategies

and miscellaneous strategies. Although the number of strategies reported by the experimental learners did not outnumber those reported by the control group, the experimental learners employed a wider variety of strategies. Apart from the four corpus strategies, the experimental learners also employed promotive interaction, positive interdependence and technological tools to solve their learning problems. The use of the mentioned strategies resulted from the potential of the method to facilitate collocation learning. In fact, the promotive interaction resulted in less anxiety, so the experimental group learners could discuss, create, and think in a group. The use of positive interdependence was shown by the positive attitudes towards group participation where all members contributed to the team's success. As discussed in Chapter 4, positive interdependence might have decreased competitiveness and individualism since the team had a shared goal to complete their tasks. Lastly, the target learners employed technology in facilitating the collocation learning process due to the usefulness of the technological tools.

The third hypothesis was that the L2 learners would have positive attitudes towards cooperative corpus consultation. The hypothesis was supported by the results showing the experimental group learners' acknowledgment of the usefulness of the cooperative corpus consultation. The learners were aware of its usefulness regarding collocational knowledge, their confidence in using the target collocations and the practice of the strategies.



## 5.2 Theoretical implications

The cooperative corpus consultation integrating inductive learning from DDL and cooperative learning has confirmed its usefulness for the acquisition of the adjective + preposition collocations. To implement the approach successfully, the following implications are provided.

1. Previous studies have suggested various approaches in vocabulary acquisition. In Thai EFL contexts, vocabulary strategies have proven useful for Thai learners. The learners employed the following vocabulary strategies such as use of online dictionaries and their L1 in searching word definitions.

2. In terms of collocation leaning, practitioners should take cognitive levels of learners into consideration when choosing concordance lines as learning resources. Concordance lines should stimulate necessary cognitive skills such as comparing, differentiating and generalizing skills so that learners are able to conduct data driven learning process on their own.

3. Levels of difficulty of collocations should come into play. This study noted that there was a certain level of difficulty perceived by the learners between G1 collocations and G2 collocations. G1 collocations whose combinations contain one adjective, one preposition and one noun collocate seemed to cause more problems to the learners due to subtle distinctions of noun collocates.

4. Cooperative learning should take group dynamics and group process into account. Based on the observation in this study, interaction among learners during group work reflects the aspects of group dynamics and group process. Learners in a cooperative learning environment will be able to observe their peers' behaviors such as tracking of concordance lines, reasoning skills and decision-making through group interaction.

5. Learners' L1 can be used as a vehicle to L2 vocabulary acquisition. In this study, the learners in both groups used their L1 as lexical resources and tools to explore L2 vocabulary.



**5.3 Pedagogical implications**

Four pedagogical implications are drawn from the results of this study as follows:

1. The cooperative corpus consultation should begin with trainings in order to prepare learners at the first place. There are two trainings: training for collocations and training for a cooperative corpus consultation. For a training for collocations, it is suggested that learners should be introduced what collocations are, how those collocations can be observed, what a corpus and concordance lines are, and how corpus and concordance lines can be used in learning. In terms of a cooperative corpus consultation training, learners become familiar with the materials and tasks which will be used in a cooperative corpus consultation.

2. The pedagogical tasks should be designed with a manageable input data which are purposefully selected for learners. This provides learners opportunities to practice necessary skills such as observing, comparing as well as differentiating and, more importantly, generalizing skills with enough and manageable data. Also, it can be beneficial in terms of cognitive skills and the affective factors such as developing motivation to further use a corpus or develop their own skills based on group observation.

4. The learning activities employed in classroom should be hands-on activities with authentic concordancers. Teacher should demonstrate strategies which can be applied to conducting a cooperative corpus consultation and COCA. These can promote meaningful learning as well as raise awareness of authentic tasks.

5. Learners should be informed about different roles and duties in order to work cooperatively. In addition, the number of group members can range from 3 to 4 people, and group allocation should come from learners' willingness to work together. This is to create a healthy environment in a group and to enhance cooperation.

6. The results from this study can be generalized to the other aspects of language learning. It is recommended that application of the cooperative corpus consultation goes well with many other conventional collocation-learning approaches. The balance of the combined methods depends on the goal of instruction. In some cases, the cooperative corpus consultation might be used as a supplementary tool with other teaching methods, such as in the present study. Teachers might integrate a cooperative corpus consultation as a group project with a reading class or a grammar class. In terms of a reading class, each group can choose certain words from reading, conduct a search to identify collocation patterns and compare the patterns they discover with those found in the reading texts. For a grammar class, teachers might ask learners in a group to select any grammatical rules, conduct a cooperative corpus consultation and compare their findings with grammar books. For example, if grammar books highlight the use of "than' in making a comparison, each group might conduct a search on some comparative forms to observe the use of "than". To achieve promising results, learners need to be trained fundamental corpus strategies and basic knowledge about a corpus and concordancers.

## 5.4 Limitations and recommendations for further studies

Although the study could provide encouragement to anyone implementing the cooperative corpus consultation approach in a classroom setting, there are some limitations. They are as follows.

To begin with, the focus of the study was on a particular grammatical collocational pattern, and the supplementary materials were wholly designed to facilitate the new learning approach for the high proficiency learners. Future research should investigate whether a cooperative corpus consultation would also help promote the acquisition of other grammatical collocations, such as the noun + 'to' infinitive pattern or the adjective + 'that' clause pattern as well as lexical collocations such as the noun + verb pattern or the adjective + noun pattern. Moreover, the study focused on only two test measurement formats. Future studies might investigate more by providing different types of test formats such as analyzing errors or word association tests.

Secondly, the present study was conducted over one semester, and the duration of the cooperative corpus consultation lasted for approximately 50 minutes. Corpus consultation time is an important factor. Different learners might need different amounts of time to understand and conduct the whole search process before they can reach a conclusion or generalize linguistic items. Future studies might include a long-term study with this experimental design, providing a longer corpus-consultation period to gain more of an insight into the effects of the cooperative corpus consultation. Providing a longer period of time might enable learners to both perform a given task and to search for unexpectedly interesting lexical items on their own.

Thirdly, the learners in this study were all high proficiency learners from the Faculty of Humanities and Social Sciences. The findings of this study might not be generalized to learners whose learning field is science or medical science such as the Faculty of Engineer or Medicine or to learners with different English proficiency levels. Future studies might compare and contrast the learning effects of the cooperative corpus consultation among learners in different fields or among learners of differing English proficiency.

Lastly, although the present study highlighted the allocation of different roles and duties in a cooperative corpus consultation, the effects of each role on the collocation acquisition was not investigated. Future research might investigate whether different roles have an effect on learning and group performance or not.

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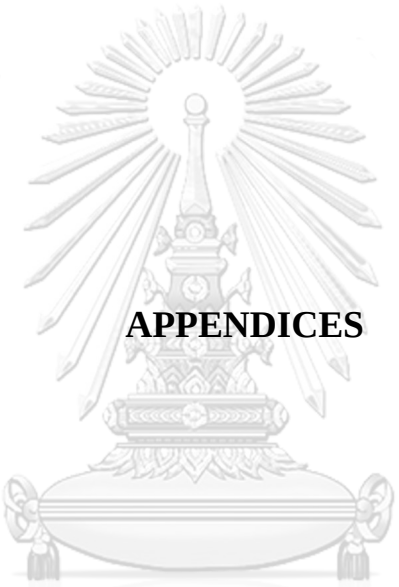
# APPENDICES



## Appendix A: IOC scores of word list

| | | | IOC scores of word list | | | |
|---|---|---|---|---|---|---|
| | | | Expert 1 | Expert 2 | Expert 3 | total |
| Group 1 | Prep | Prep | | | | |
| 1. annoyed | by | at | 1 | 1 | 1 | 1 |
| 2. amazed | at | by | 1 | 1 | 1 | 1 |
| 3. disappointed | by | at | 1 | 1 | 1 | 1 |
| 4. excited | by | at | 1 | 1 | 1 | 1 |
| 5. slow | in | at | 1 | 1 | 1 | 1 |
| 6. upset | by | over | 1 | 1 | 1 | 1 |
| 7. furious | at | over | 1 | 1 | 1 | 1 |
| 8. surprised | by | at | 1 | 1 | 1 | 1 |
| 9. shocked | by | at | 1 | 1 | 1 | 1 |
| 10. puzzled | by | at | 1 | 1 | 1 | 1 |
| | | | | | IOC = | 1 |

| | | | IOC scores of word list | | | |
|---|---|---|---|---|---|---|
| | | | Expert 1 | Expert 2 | Expert 3 | total |
| Group 2 | Prep | Prep | | | | |
| 1. frightened | of | for | 1 | 1 | 1 | 1 |
| 2. free | to | from | 1 | 1 | 1 | 1 |
| 3. wrong | with | for | 1 | 1 | 1 | 1 |
| 4. sick | of | at | 1 | 1 | 1 | 1 |
| 5. punished | for | with | 1 | 1 | 1 | 1 |
| 6. good | to | with | 1 | 1 | 1 | 1 |
| 7. generous | with | of | 1 | 1 | 1 | 1 |
| 8. grateful | for | to | 1 | 1 | 0 | 0.67 |
| 9. clear | of | on | 1 | 1 | 1 | 1 |
| 10. immune | to | from | 1 | 1 | 1 | 1 |
| | | | | | IOC= | 0.967 |

## Appendix B: Pre-project questionnaire

**Descriptions**

The information from this questionnaire will be used for the research purpose. To protect your identity as a participant in the study, you will not be identified in any report or publication of this study.

The questionnaire covers the following 3 parts.

- Part I: General Information
- Part II: Background of learning English
- Part III: Computer Skills and previous experience of using a corpus

Instructions: Please give the information by ticking (√ ) in appropriate boxes or columns
and giving short answers where needed.

**Part I: General Information**

1. Name ……...
2. Age ……
3. Faculty ……
   Field of study ……
4. Previous school / institution ……

**Part II: Background of learning English**

5. How long have you been learning English?
   □ 1-3 years □ 4-6 years □ 7-9 years
   □ 10-12 years □ More than 12 years

6. Have you studied English abroad?
   □ Yes: Where and for how long? ……
   □ No

7. Do you like studying English?
   □ Very much □ Much □ Moderately
   □ Not much □ Not at all

8. How would you rate your overall English proficiency?
   □ Poor □ Fair □ Average
   □ Good □ Very good

**Part III: Computer Skills and previous experience of using a corpus**

9. Do you possess any of the following electronic devices: a computer, a tablet computer or a smartphone?
   □ Yes
   □ No

10. How good is your basic computer skill?
□ Very good □ Good □ Average
□ Poor □ Very poor

11. Have you ever used a computer, a tablet computer or a mobile device for studying English?
□ Yes Please briefly specify.
……..
□ No

12. Have you ever heard anything about a corpus or a concordancer?
□ Yes Please briefly specify.
……..
□ No

## Appendix C: Sample of the paper-based material (1)

### Task 1

1. Cross out the concordance lines that do not contain adjective + preposition collocations.

8. she wouldn't be half as annoyed, probably not **annoyed** at all. Toward her quirky younger sister Daisy felt nothing
9. Jordan cut Racine an irritated glance, and **annoyed** at being ignored, she finally moved on.
10. I like to get the most value out of the items I buy and get **annoyed** when I have to upgrade or replace a product that should be working fine.
11. ınsisting that he leave them in peace. # He'd only been vaguely **annoyed** at first. He didn't trust the cunning Chatri as far as he could
12. Though I was sometimes **annoyed** by my sister's habit of abruptly dropping one topic and taking up another
13. but I could tell she was **annoyed** at my answer. By the way she clacked the scalpel down on the steel
14. The lighthouse keeper, **annoyed** at this distraction, tells him to be off and then turns his back on
15. She tugged on his hold, definitely **annoyed** by now. " Listen, " she began, but he wasn't listening
16. I think many people have been **annoyed** by the advertising and found it very suspicious
17. I get easily awakened by noise, " " I am **annoyed** by loud traffic

2. Do the rest of the concordance lines convey the same meaning? Which concordance lines convey the same meaning?

……
……..



3. According to the concordance lines in **SET A**, do the prepositions “at” and “by” affect the meaning of the adjective “annoyed”? What are the collocational patterns of the adjective “annoyed”?

……
……
……
……

4. Classify the concordance lines in **Set B** into at least 2 groups in terms of collocational meaning. Each group needs at least 5 sentences. Write down the number of the concordance lines.

Group 1

……..

Group 2

……..

5. According to your classification, compare the meanings of both sets and explain them.

Group 1

……
……
……

Group 2

……..,
……
……

6. According to the concordance lines in **SET B,** do the prepositions affect the meaning of the adjective “clear”? What are the collocational patterns of the adjective “clear”?

……
……
……
……

Group members/ Role

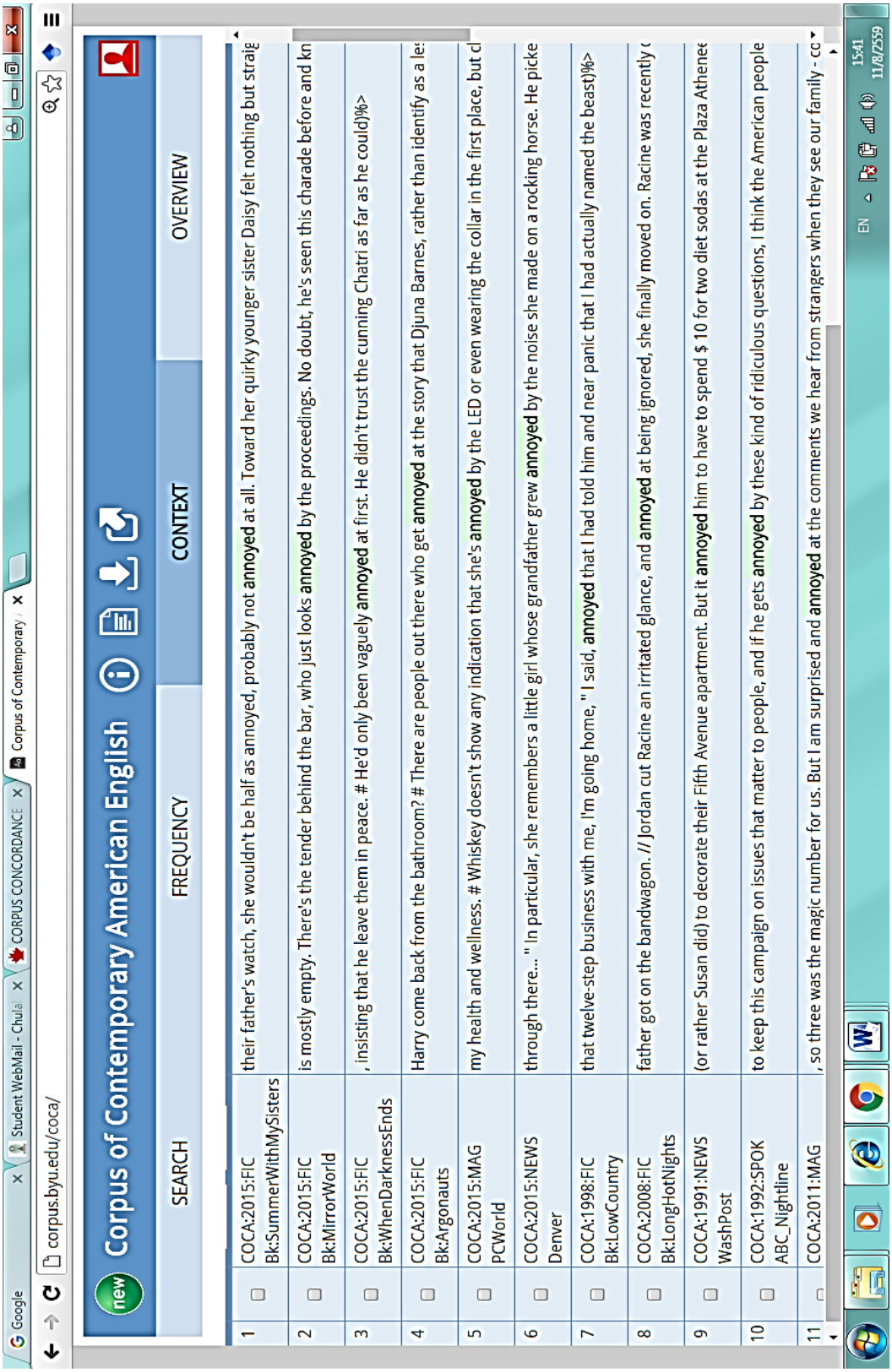
1…… Role ……

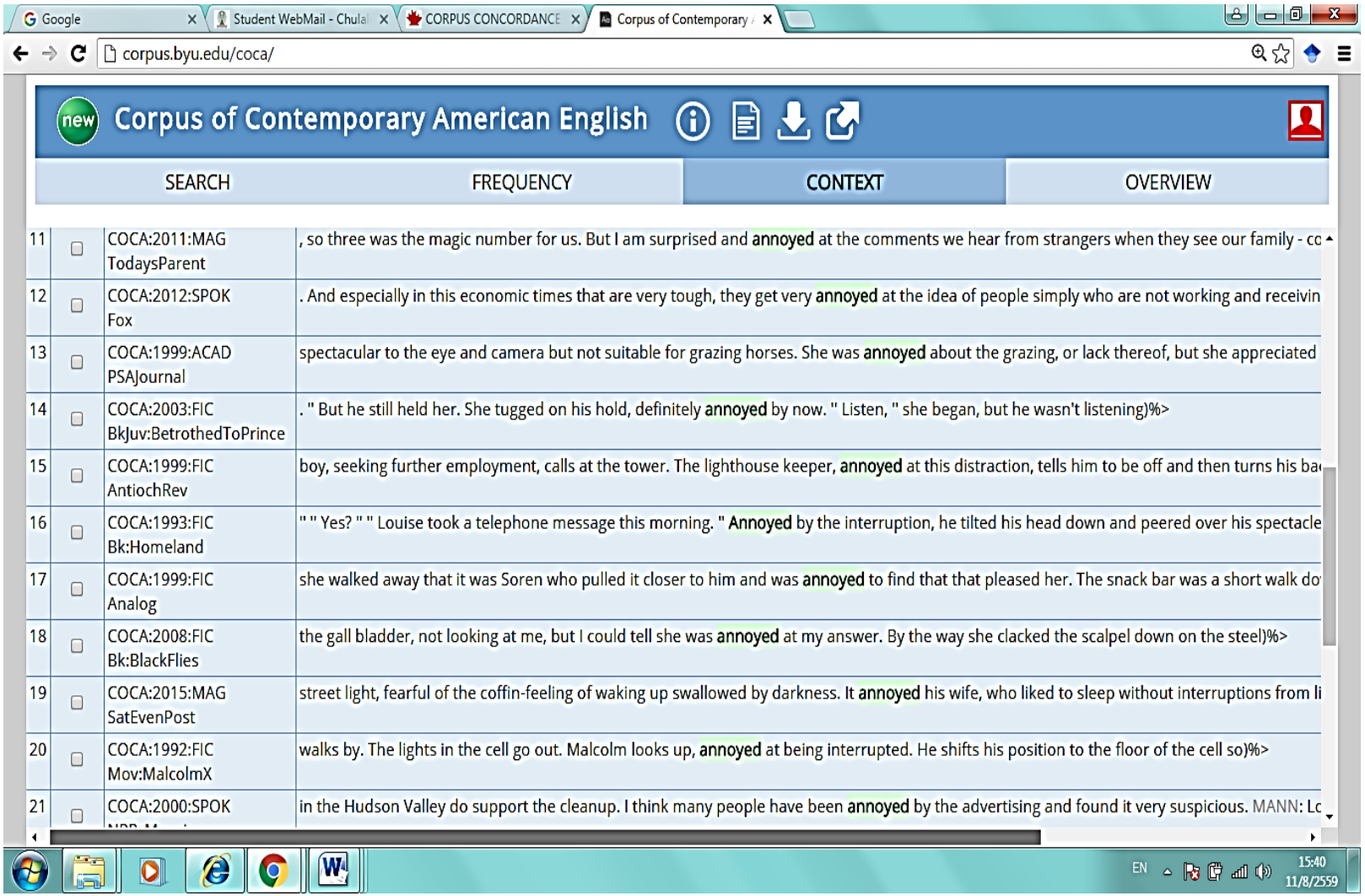
2…… Role ……

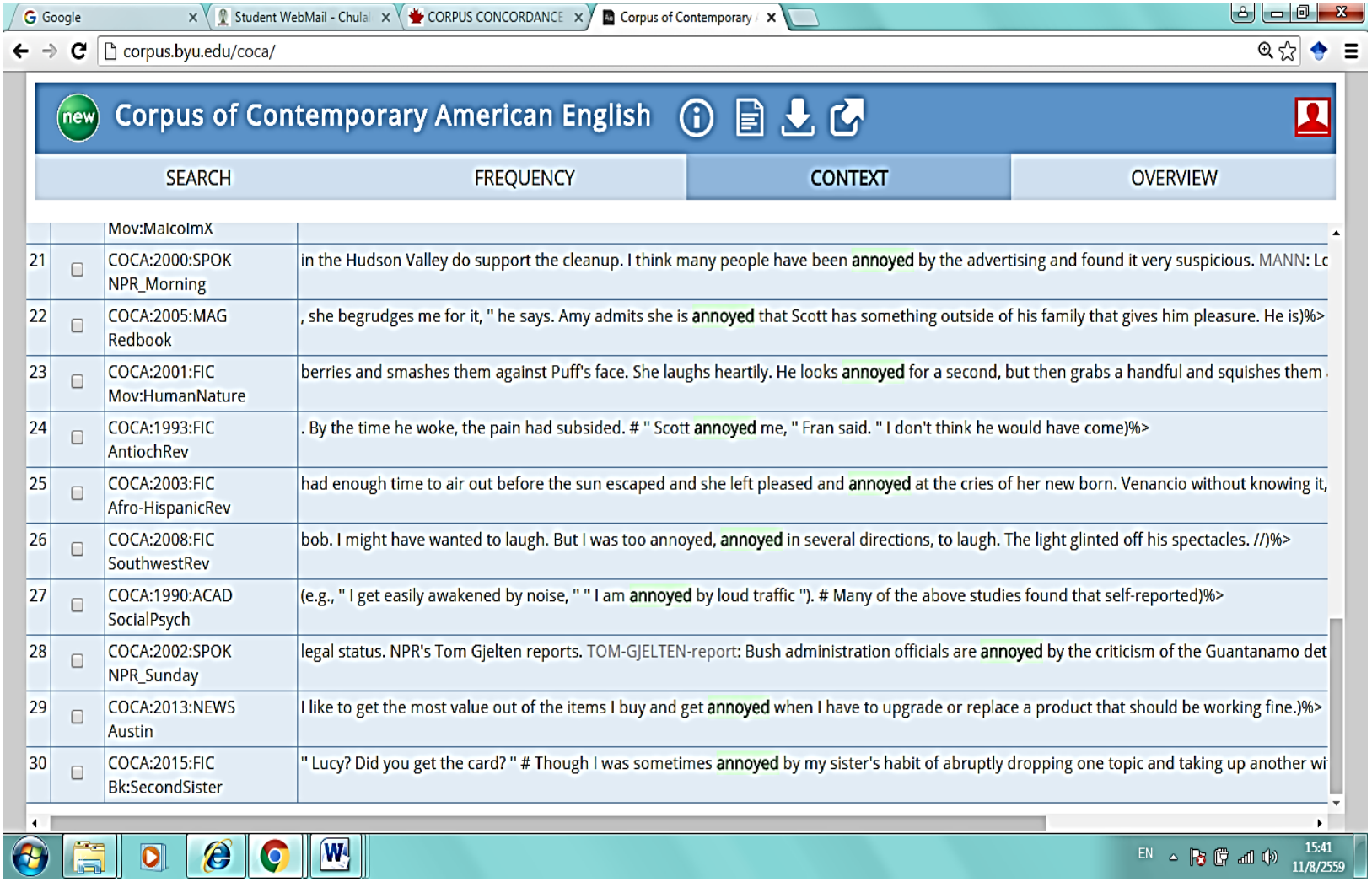
3…… Role ……

4…… Role ……

**Paper-based concordance handout of Task 1**
**SET A**

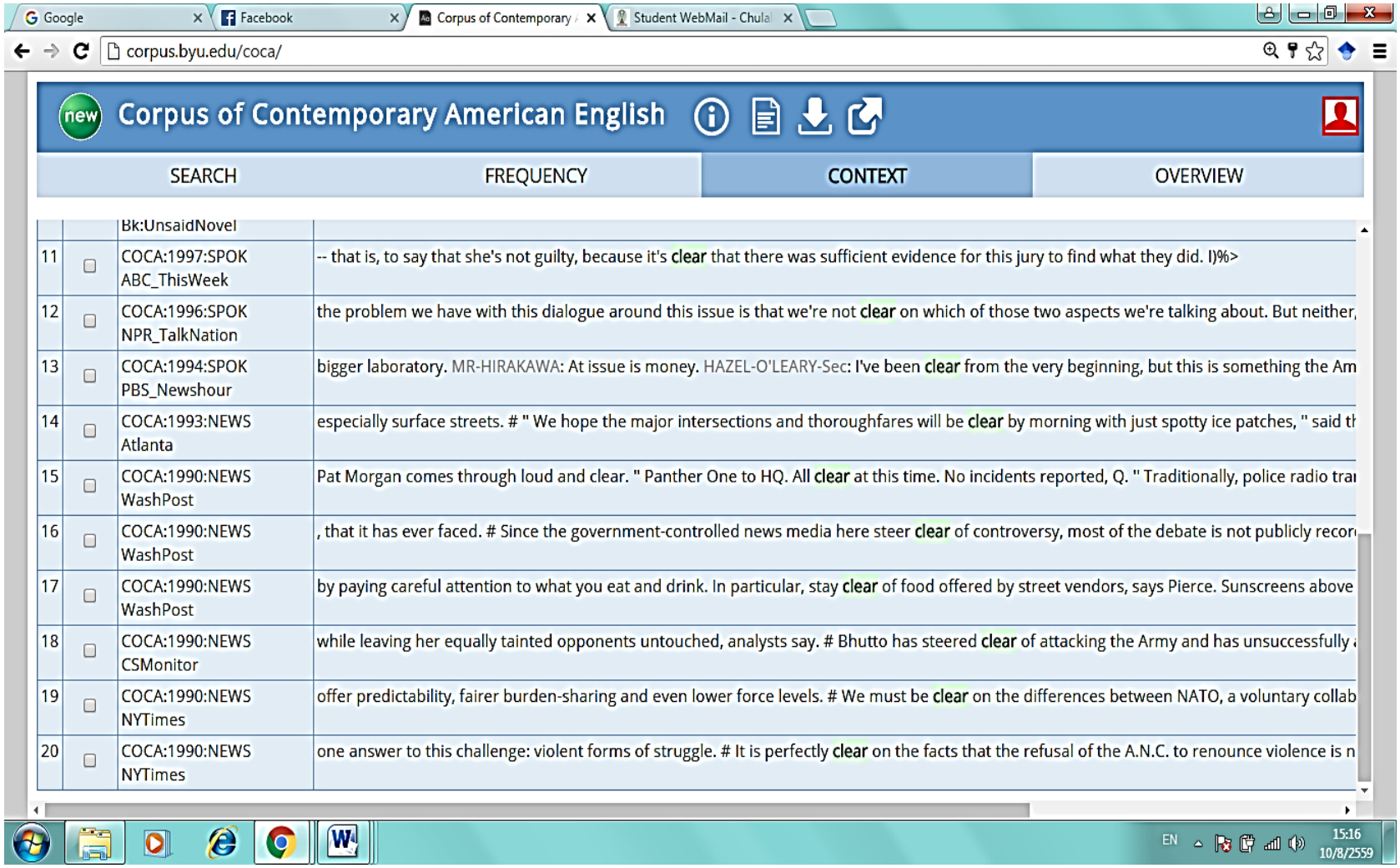



Google
Student WebMail - Chula
CORPUS CONCORDANCE
Corpus of Contemporary
corpus.byu.edu/coca/
new
Corpus of Contemporary American English
SEARCH
FREQUENCY
CONTEXT
OVERVIEW
11 COCA:2011:MAG TodaysParent , so three was the magic number for us. But I am surprised and annoyed at the comments we hear from strangers when they see our family - co
12 COCA:2012:SPOK Fox . And especially in this economic times that are very tough, they get very annoyed at the idea of people simply who are not working and receivin
13 COCA:1999:ACAD PSAJournal spectacular to the eye and camera but not suitable for grazing horses. She was annoyed about the grazing, or lack thereof, but she appreciated
14 COCA:2003:FIC BkJuv:BetrothedToPrince . " But he still held her. She tugged on his hold, definitely annoyed by now. " Listen, " she began, but he wasn't listening)%>
15 COCA:1999:FIC AntiochRev boy, seeking further employment, calls at the tower. The lighthouse keeper, annoyed at this distraction, tells him to be off and then turns his ba
16 COCA:1993:FIC Bk:Homeland " " Yes? " " Louise took a telephone message this morning. " Annoyed by the interruption, he tilted his head down and peered over his spectacle
17 COCA:1999:FIC Analog she walked away that it was Soren who pulled it closer to him and was annoyed to find that that pleased her. The snack bar was a short walk do
18 COCA:2008:FIC Bk:BlackFlies the gall bladder, not looking at me, but I could tell she was annoyed at my answer. By the way she clacked the scalpel down on the steel)%>
19 COCA:2015:MAG SatEvenPost street light, fearful of the coffin-feeling of waking up swallowed by darkness. It annoyed his wife, who liked to sleep without interruptions from li
20 COCA:1992:FIC Mov:MalcolmX walks by. The lights in the cell go out. Malcolm looks up, annoyed at being interrupted. He shifts his position to the floor of the cell so)%>
21 COCA:2000:SPOK in the Hudson Valley do support the cleanup. I think many people have been annoyed by the advertising and found it very suspicious. MANN: Lc
EN
15:40
11/8/2559


Google
Student WebMail - Chula
CORPUS CONCORDANCE
Corpus of Contemporary
corpus.byu.edu/coca/
Corpus of Contemporary American English
SEARCH
FREQUENCY
CONTEXT
OVERVIEW
Mov:MalcolmX
21 COCA:2000:SPOK NPR_Morning in the Hudson Valley do support the cleanup. I think many people have been annoyed by the advertising and found it very suspicious. MANN: Lc
22 COCA:2005:MAG Redbook , she begrudges me for it, " he says. Amy admits she is annoyed that Scott has something outside of his family that gives him pleasure. He is)%>
23 COCA:2001:FIC Mov:HumanNature berries and smashes them against Puff's face. She laughs heartily. He looks annoyed for a second, but then grabs a handful and squishes them
24 COCA:1993:FIC AntiochRev . By the time he woke, the pain had subsided. # " Scott annoyed me, " Fran said. " I don't think he would have come)%>
25 COCA:2003:FIC Afro-HispanicRev had enough time to air out before the sun escaped and she left pleased and annoyed at the cries of her new born. Venancio without knowing it,
26 COCA:2008:FIC SouthwestRev bob. I might have wanted to laugh. But I was too annoyed, annoyed in several directions, to laugh. The light glinted off his spectacles. //)%>
27 COCA:1990:ACAD SocialPsych (e.g., " I get easily awakened by noise, " " I am annoyed by loud traffic "). # Many of the above studies found that self-reported)%>
28 COCA:2002:SPOK NPR_Sunday legal status. NPR's Tom Gjelten reports. TOM-GJELTEN-report: Bush administration officials are annoyed by the criticism of the Guantanamo det
29 COCA:2013:NEWS Austin I like to get the most value out of the items I buy and get annoyed when I have to upgrade or replace a product that should be working fine.)%>
30 COCA:2015:FIC Bk:SecondSister " Lucy? Did you get the card? " # Though I was sometimes annoyed by my sister's habit of abruptly dropping one topic and taking up another wi
EN
15:41
11/8/2559

**SET B**


Corpus of Contemporary American English
SEARCH
FREQUENCY
CONTEXT
OVERVIEW
DELETE ENTRIES
MOVE ENTRIES
EXPAND ENTRIES
1 COCA:2015:NEWS NYTimes Force, Deborah Lee James, said the invasion of Crimea " made it abundantly clear to all of us that we have to stop relying on Russian engines. "
2 COCA:2015:NEWS NYTimes consensual restructuring of its $9 billion in bonds, for example. It was not clear on Monday whether those talks could continue, given that lack
3 COCA:2015:ACAD JAdolAdultLiteracy as a basis for curriculum planning, pedagogy, and assessment. # It was clear from the outset that video games differed from other forms of te
4 COCA:2015:ACAD JAdolAdultLiteracy make inferences and build meaning that is not directly stated. It is not explicitly clear to young readers how to integrate these various genres a
5 COCA:2015:ACAD JAdolAdultLiteracy Twitter into a variety of professional and educational settings is largely nascent, it is clear from existing studies that the site's popularity makes
6 COCA:2015:ACAD DeltaKappaGamma : engaging students in complex tasks, having students revise their understanding, being very clear about what critical information is needed, ar
7 COCA:2015:ACAD JAdolAdultLiteracy s skin legions and the syringe of heroin on the bathroom floor make it pretty clear that it was a textbook case of drug abuse. However, who wa
8 COCA:2015:ACAD GeneralMusicToday relevant evidence when supporting their own points in writing and speaking, making their reasoning clear to the reader or listener, and they cc
9 COCA:1994:NEWS WashPost for what they regard as a U.S. immigration problem. # Mexico made its policy clear in July 1993, when three shiploads of Chinese seeking entry
10 COCA:2011:FIC of exertion and the blare of the car horn. # We pulled the deer clear of the lane and onto the shoulder just as the car passed. Then we)%>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Corpus of Contemporary American English
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FREQUENCY
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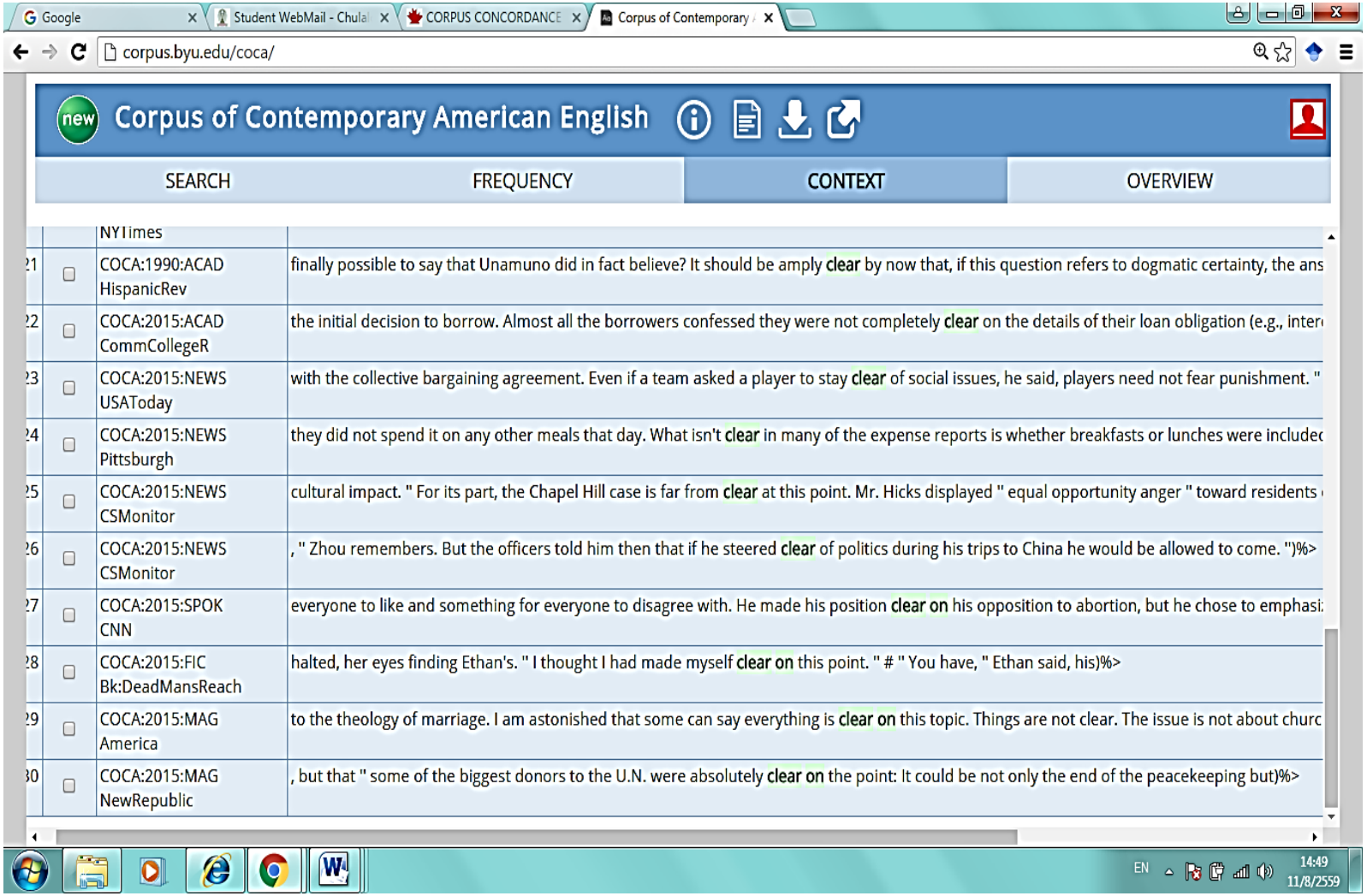
Bk:UnsaidNovel
11 COCA:1997:SPOK ABC_ThisWeek -- that is, to say that she's not guilty, because it's clear that there was sufficient evidence for this jury to find what they did. I)%>
12 COCA:1996:SPOK NPR_TalkNation the problem we have with this dialogue around this issue is that we're not clear on which of those two aspects we're talking about. But neither,
13 COCA:1994:SPOK PBS_Newshour bigger laboratory. MR-HIRAKAWA: At issue is money. HAZEL-O'LEARY-Sec: I've been clear from the very beginning, but this is something the Am
14 COCA:1993:NEWS Atlanta especially surface streets. # " We hope the major intersections and thoroughfares will be clear by morning with just spotty ice patches, " said th
15 COCA:1990:NEWS WashPost Pat Morgan comes through loud and clear. " Panther One to HQ. All clear at this time. No incidents reported, Q. " Traditionally, police radio trai
16 COCA:1990:NEWS WashPost , that it has ever faced. # Since the government-controlled news media here steer clear of controversy, most of the debate is not publicly recor
17 COCA:1990:NEWS WashPost by paying careful attention to what you eat and drink. In particular, stay clear of food offered by street vendors, says Pierce. Sunscreens above
18 COCA:1990:NEWS CSMonitor while leaving her equally tainted opponents untouched, analysts say. # Bhutto has steered clear of attacking the Army and has unsuccessfully
19 COCA:1990:NEWS NYTimes offer predictability, fairer burden-sharing and even lower force levels. # We must be clear on the differences between NATO, a voluntary collab
20 COCA:1990:NEWS NYTimes one answer to this challenge: violent forms of struggle. # It is perfectly clear on the facts that the refusal of the A.N.C. to renounce violence is n
EN
15:16
10/8/2559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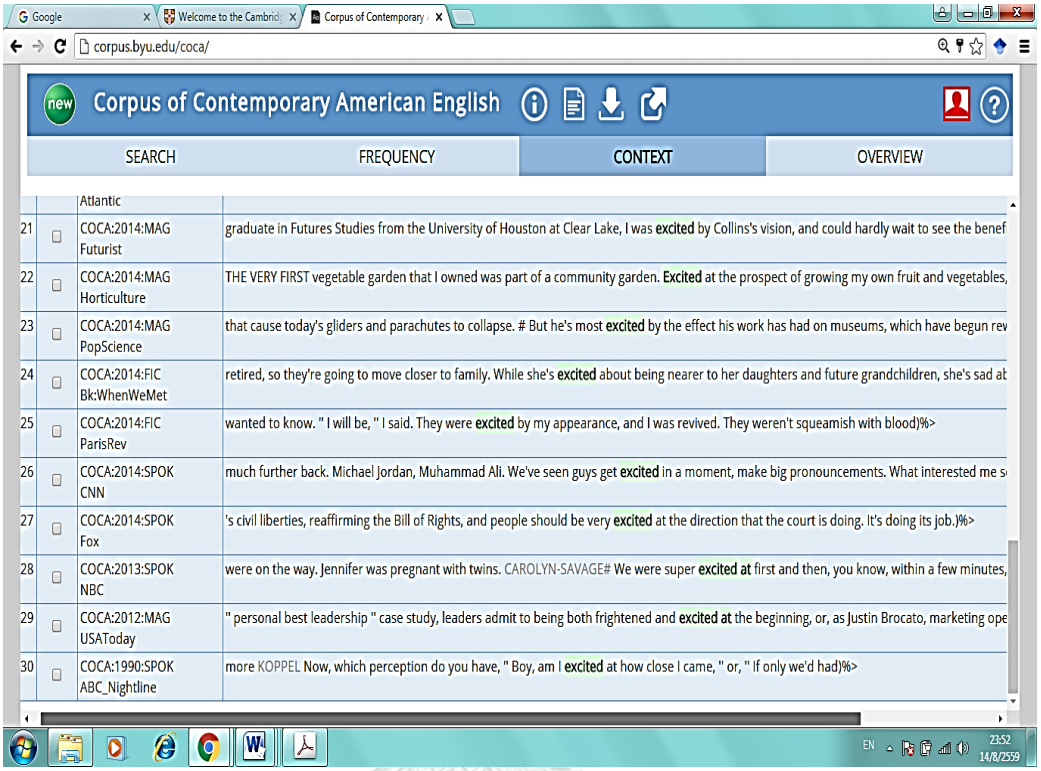
CORPUS CONCORDANCE
Corpus of Contemporary
corpus.byu.edu/coca/
Corpus of Contemporary American English
SEARCH
FREQUENCY
CONTEXT
OVERVIEW
NYTimes
21 COCA:1990:ACAD HispanicRev finally possible to say that Unamuno did in fact believe? It should be amply clear by now that, if this question refers to dogmatic certainty, the ans
22 COCA:2015:ACAD CommCollegeR the initial decision to borrow. Almost all the borrowers confessed they were not completely clear on the details of their loan obligation (e.g., inter
23 COCA:2015:NEWS USAToday with the collective bargaining agreement. Even if a team asked a player to stay clear of social issues, he said, players need not fear punishment. "
24 COCA:2015:NEWS Pittsburgh they did not spend it on any other meals that day. What isn't clear in many of the expense reports is whether breakfasts or lunches were includec
25 COCA:2015:NEWS CSMonitor cultural impact. " For its part, the Chapel Hill case is far from clear at this point. Mr. Hicks displayed " equal opportunity anger " toward residents
26 COCA:2015:NEWS CSMonitor , " Zhou remembers. But the officers told him then that if he steered clear of politics during his trips to China he would be allowed to come. ")%>
27 COCA:2015:SPOK CNN everyone to like and something for everyone to disagree with. He made his position clear on his opposition to abortion, but he chose to emphasi
28 COCA:2015:FIC Bk:DeadMansReach halted, her eyes finding Ethan's. " I thought I had made myself clear on this point. " # " You have, " Ethan said, his)%>
29 COCA:2015:MAG America to the theology of marriage. I am astonished that some can say everything is clear on this topic. Things are not clear. The issue is not about churc
30 COCA:2015:MAG NewRepublic , but that " some of the biggest donors to the U.N. were absolutely clear on the point: It could be not only the end of the peacekeeping but)%>
EN
14:49
11/8/2559

**Sample of the paper-based material (2)**

**Task 4**

1. Cross out the sentences that do not contain adjective + preposition collocations.




2. Which of the following sentences contain wrong use of collocations? Please correct them

9. Good therapists are **excited** by each new client, and learn something from them
10. The child was hot, tired, and **excited** in the unusual sights.
11. I was surprised Cameron was able to keep the secret. He was so **excited** to the wedding.
12. no one is likely to get **excited** by your product or service in a declining industry
13. He's very **excited** to have a daughter, and he spends a lot of time with her.
14. I'm so **excited** at this whole experience. It's going to be so much fun
15. " I have to continue to get better.... I'm just **excited** in the progression of improvement that happens throughout it. "
16. " Louis is happy and very **excited** with becoming a dad.

3. Find the missing prepositions for the given sentences.
   A. “Charlie asked us if we want a ride home. That was generous _____ him to offer”
   B. My company has been doing well. I hope my boss will be generous ____ annual bonuses this year.
   C. How generous _____ your parents! I can’t believe they bought two concert tickets for us.
   D. My coach dedicates himself the team. He is generous _____ his support and advice for the team.

4. Explain how different prepositions affect the meaning of the adjective “generous”. What are the collocational patterns of the adjective “generous”?

……
……
……
……
……
……
……



Group members/ Role

1…… Role ……
2…… Role ……
3…… Role ……
4…… Role ……

## Appendix D: Sample of the hands-on concordance-based handout (1)

### Task 7 (Hands-on concordance-based handout)

Instructions: Consult the corpus to find the answers to the following questions.

**Surprised**

18. What prepositions are frequently used with “surprised”?
19. Find the prepositional collocates that convey the same meaning?
20. Select at least five concordance lines for each collocate that share the same meaning and pattern.
21. Are there any similarities of the nouns that follow the prepositions from Q 2? What are those nouns?

**Immune**

22. Find the prepositions occurring with “immune” that conveys the following meaning
    - Being exempt from something or being protected
    - Developing an internal resistance to some outside agency
23. Select at least five concordance lines for each pattern.
24. What are the frequent words that follow the prepositions you receive from Q 5? Are there similarities and differences?

…….

**Sample of the hands-on concordance-based handout (2)**

**Task 8 (Hands-on concordance-based handout)**

Instructions: Consult the corpus to find the answers to the following questions.

**Shocked**

1. What prepositions are frequently used with “shocked”?
2. Find the prepositional collocates that convey the same meaning?
3. Select at least five concordance lines for each collocate that share the same meaning and pattern.
4. Are there any similarities of the nouns that follow the prepositions from Q 2? What are those nouns?

**Punished**

5. Find the prepositions occurring with “punished” that
   - Identify the penalty the subject of the sentence receives
   - Identify what the subject of the sentence has committed
6. Select at least five concordance lines for each pattern.
7. What are the frequent words that follow the prepositions you receive from Q 5? Are there any similarities or differences?



……

## Appendix E: IOC of the lesson plans

| Items | Expert 1 | Expert 2 | Expert 3 | total |
|---|---|---|---|---|
| **Part I: Paper-based concordance hand-outs** | | | | |
| 1. | 1 | 1 | 1 | 0.6 |
| 2. | 1 | 1 | 1 | 1 |
| 3. | 1 | 1 | 1 | 1 |
| 4. | 1 | 1 | 0 | 0.6 |
| 5. | 1 | 1 | 1 | 1 |
| | | | | 4.66/5=0.93 |
| **Part II: Online concordance based tasks** | | | | |
| 1. | 1 | 1 | 1 | 1 |
| 2. | 1 | 1 | 1 | 1 |
| 3. | 1 | 1 | 0 | 0.66 |
| 4. | 1 | 1 | 1 | 1 |
| | | | | 3.66/4=0.91 |
| | | | | IOC =0.92 |

## Appendix F: Pre-test

Name _____ Major_____ ONET score_____

**Description:** This test consists of two parts: Grammaticality Judgment Task (65 items) and Gap-filling (25 items). You have 1.5 **hours to** complete the test. Please follow the directions provided in each part.

**Part 1: Grammaticality Judgment Task**

***Direction:*** Read the sentences below and decide if they are correct or not. Write **(C)** if the sentence is correct. If they are incorrect, write **(I)** and please **CORRECT** them.

**Sample**

| Answers | Sentences | corrections |
|---|---|---|
| **C** | *1. I **am studying** at SWU.* | |
| **I** | *2. I am ~~**the**~~ learner.* | **a** |

| Answers | Sentences | corrections |
|---|---|---|
| | 1. The President was **furious at** the press report on the government corruption. | |
| | 2. Sophie was **surprised by** a knock at the door in the early hours of the morning. | |
| | 3. **While watching** TV last night, I was talking to my friend on the phone. | |
| | 4. Sandra has been **punished for** coming late three times in a row. | |
| | 5. Paula failed the test **as** she did not study beforehand. | |
| | 6. My mom **gave to me** this book. | |
| | 7. Someone stole my bag. I was **upset in** leaving my smartphone which was inside the bag. | |
| | 8. This exhibition is **free to** any learner if their learner card is shown at the entrance. | |
| | 9. They **have worked** for Toyota since 2014. | |
| | 10. **Unable to** afford an expensive car, Dan bought a cheap one. | |
| | 11. Rose was **disappointed in** not getting a raise. | |
| | 12. Jack did not arrive **in time** to meet his friend. | |
| | 13. The sea was **too rough** for my learners to go swimming today. | |
| | 14. Sarah was **amazed in** the morning news about an armless airplane pilot. | |
| | 15. **After watching** TV last night, I went to bed. | |

| | | |
|---|---|---|
| | 16. Elisabeth never went hiking because she was **frightened of** snakes. | |
| | 17. Jack did not arrive **early enough** to say goodbye to his friend. | |
| | 18. My sister leaves her room untidy. I am **sick by** her messy room. | |
| | 19. The sea was **rough enough** that the athletes could practice swimming. | |
| | 20. **Since watching** TV last night, my friend called me. | |
| | 21. George was **wrong at** ringing you so late at night when you were asleep. | |
| | 22. Anne failed the test **so** she did not study hard enough. | |
| | 23. I am **used to** getting up early every day. | |
| | 24. Parents are **upset over** tactics used by their children. | |
| | 25. Because Jo **was unable** to afford an expensive car, he bought a cheap one. | |
| | 26. Upon arriving at a five-star hotel, we were treated quite badly so we were **disappointed by** the receptionist's behavior. | |
| | 27. Alan did not study hard enough. **Consequently**, he failed the test. | |
| | 28. Helen always keeps me waiting. I am **sick of** her behavior. | |
| | 29. Kate broke her grandmother's vase and lied. Later she was **punished at** lying to her grandmother. | |
| | 30. **Even though** Janet is not rich, but she is happy. | |
| | 31. Your car is **more expensive** than mine. | |
| | 32. When the test result was announced, Joseph was **disappointed at** the mark. | |
| | 33. I am **use to getting up** early. | |
| | 34. My friend loves reading. Every time I talk to her, I'm always **amazed at** her world of knowledge. | |
| | 35. Tony bought a bicycle because a car **was unable**. | |
| | 36. I **was given** a gift on my birthday. | |
| | 37. The university asked every learner not to drink at last night 's concert, so it was **free for** all kinds of alcohol drinks. | |

| | | |
|---|---|---|
| | 38. Her house is **more cheaper** than mine. | |
| | 39. Some people refuse to explore caves because they are **frightened in** snakes and scorpions**.** | |
| | 40. I **started working** for this university in 2014 | |
| | 41. Alan expected England to win easily, so he was very **surprised at** their defeat to Iceland. | |
| | 42. Somsri **uses to** get up early last year. | |
| | 43. During the operation, Tom was under sedation and **free from** pain and worries. | |
| | 44. My car is not **as expensive as** yours. | |
| | 45. The children couldn't go swimming because the sea **was rough**. | |
| | 46. Because Tim was **upset by** the teacher's remark, he couldn't concentrate in class. | |
| | 47. **Although** I have little money, I am happy. | |
| | 48. My dad **gave me** this watch. | |
| | 49. Jo's teacher is always **furious with** not getting attention from his learners. | |
| | 50. When I was told the news, I was **sick at** not getting the job. | |
| | 51. Dr. Smith did not get back **on time** to meet his children. | |
| | 52. I am **amazed by** Mike and Anne's long honeymoon, lasting 675 days through 6 continents and 35 countries. | |
| | 53. I don't have much money, **although** I am satisfied. | |
| | 54. Steve and Susan split up as they were completely **wrong for** each other. | |
| | 55. I **have working** here as a teacher since 2014. | |
| | 56. Joni was **punished with** the death penalty after he had killed the Jackson Family. | |
| | 57. Tony is never satisfied. He is **always complaining**. | |
| | 58. When I am tired, I **will go** to bed early. | |
| | 59. Some people get **surprised in** unexpected visitors, so it is always better to call them first**.** | |
| | 60. Angelina was **furious over** suggestions that she had lied to the public. | |

| | | |
|---|---|---|
| | 61. I **have called** Anna this morning. | |
| | 62. Christine's son loves adventures and always goes diving alone. She is always **frightened for** him. | |
| | 63. They don't **allow parking** in this area. | |
| | 64. It has **started raining.** | |
| | 65. Owen has a fever and a rash, but the doctors still don't know what's **wrong with** him. | |

**Part 2 Gap-filling**

***Direction:*** Circle the best answers. **Some items may have more than one answer.**

Sample: *I am studying **_at_** SWU.* | at | on | under |

1. Peter's presentation is so organized that everyone is clear _____ what he plans to do.
   A. in B. of C. on D. from
2. Susan is a manager who works in _____ eminent enterprise.
   A. a B. an C. the D. –
3. The printer has not yet returned the documents, but when _____, I will send them to you.
   A. I have B. they have C. it has D. they are
4. Parents are genuinely shocked _____ the widespread use of alcohol and drugs in school zones.
   A. at B. to C. by D. of
5. Titan wants his father _____ him a new bicycle
   A. buy B. to buy C. buying D. buys
6. I looked for my glasses and couldn't find them _____.
   A. somewhere B. nowhere C. wherever D. anywhere
7. Susan's project costs a huge amount of money. Everyone criticizes her but she is immune _____ the gossip so she continues to work.
   A. at B. from C. to D. with
8. Nolan is the _____ of the two.
   A. young B. younger C. youngest D. as young as
9. With the advent of modern technology, children tend to be more excited _____ computer games than traditional books and toys.
   B. by B. for C. to D. at
10. Thomas was a gardener who had been working with this family _____ his father passed away.
    A. after B. when C. while D. since

11. My teacher is generous _____ her praise. “Good” is a word she always uses in class.
    A. towards B. to C. of D. with
12. Sarah did not know whether to sell her books or _____ them.
    A. keep B. keeping C. to keep D. kept
13. Jack and his brother look very much_____.
    A. alike B. likes C. like D. liking
14. No companies are slow _____ building customer loyalty and increasing their satisfaction.
    A. at B. on C. in D. over
15. I really cannot come now. I’ll have to visit you _____ day.
    A. next B. any other C. some other D. another
16. A kindergarten teacher who has to deal with a number of children should be good _____ children from diverse backgrounds.
    A. about B. at C. with D. of
17. Are you _____ tired to talk to me?
    A. much B. very C. quite D. too
18. _____ people in Thailand eat rice every day.
    A. Almost B. Most C. Almost every D. Most the
19. My colleague did not stop talking in the meeting. I was annoyed _____ her bossy behavior.
    A. at B. in C. with D. by
20. My learner confessed _____ the books from the school library.
    A. to take B. taking C. take D. to taking
21. _____ the two girls I met yesterday, Blair is the taller of the two.
    A. Among B. Between C. During D. Of
22. When Jo announced his early retirement, Mary looked puzzled _____ his decision.
    A. at B. by C. in D. of
23. You should do _____ you are told.
    A. as B. so C. since D. that
24. Did you have photos _____ last week?
    A. taken B. took C. taking D. take
25. I was so grateful ____ the many birthday presents I received this year.
    A. for B. in C. of D. with



*****End of the test*****

## Appendix G: IOC of the pre-test

| Items | Expert 1 Alan | Expert 2 An | Expert 3 Nicole | total |
|---|---|---|---|---|
| **Part 1** | | | | |
| 1. | 1 | 0 | 1 | 0.6 |
| 2. | 1 | 1 | 1 | 1 |
| 3. | 1 | 1 | 0 | 0.6 |
| 4. | 1 | 1 | 1 | 1 |
| 5. | 1 | 1 | 1 | 1 |
| 6. | 1 | 1 | 1 | 1 |
| 7. | 1 | 1 | 1 | 1 |
| 8. | 1 | 1 | 1 | 1 |
| 9. | 1 | 1 | 1 | 1 |
| 10. | 1 | 1 | 1 | 1 |
| 11. | 1 | 1 | 1 | 1 |
| 12. | 1 | 1 | 1 | 1 |
| 13. | 1 | 1 | 1 | 1 |
| 14. | 1 | 1 | 1 | 1 |
| 15. | 1 | 1 | 1 | 1 |
| 16. | 1 | 1 | 1 | 1 |
| 17. | 1 | 1 | 1 | 1 |
| 18. | 1 | 1 | 1 | 1 |
| 19. | 1 | 1 | 1 | 1 |
| 20. | 1 | 1 | 1 | 1 |
| 21. | 1 | 1 | 1 | 1 |
| 22. | 1 | 1 | 1 | 1 |
| 23. | 1 | 1 | 1 | 1 |
| 24. | 1 | 1 | 1 | 1 |
| 25. | 1 | 1 | 1 | 1 |
| 26. | 1 | 1 | 1 | 1 |
| 27. | 1 | 1 | 1 | 1 |
| 28. | 1 | 1 | 1 | 1 |
| 29. | 1 | 1 | 1 | 1 |
| 30. | 1 | 1 | 1 | 1 |
| | 30 | 29 | 29 | 29.32/30=0.977 |

| **Part 2** | | | | |
|---|---|---|---|---|
| 1. | 1 | 1 | 1 | 1 |
| 2. | 1 | 1 | 0 | 0.66 |
| 3. | 1 | 1 | 1 | 1 |
| 4. | 1 | 1 | 1 | 1 |
| 5. | 1 | 1 | 1 | 1 |
| 6. | 1 | 1 | 1 | 1 |
| 7. | 1 | 1 | 1 | 1 |
| 8. | 1 | 1 | 1 | 1 |
| 9. | 1 | 1 | 0 | 0.66 |
| 10. | 1 | 1 | 1 | 1 |
| | 10 | 10 | 8 | 9.322/10=0.93 |
| | | | | IOC= 0.95 |

## Appendix H: IOC of the pre-project questionnaire

| Items | Expert 1 | Expert 2 | Expert 3 | total |
|---|---|---|---|---|
| **Part I: General Information** | | | | |
| 1. | 0 | 1 | 1 | 0.6 |
| 2. | 0 | 1 | 1 | 0.6 |
| 3. | 1 | 1 | 1 | 1 |
| 4. | 1 | 1 | 1 | 1 |
| | | | 0.83 | 3.32/4=0.83 |
| **Part II: Background of learning English** | | | | |
| 5. | 1 | 1 | 1 | 1 |
| 6. | 1 | 1 | 1 | 1 |
| 7. | 1 | 1 | 1 | 1 |
| 8. | 1 | 1 | 1 | 1 |
| | | | | 4/4=1 |
| **Part III: Computer Skills and previous experience of using a corpus** | | | | |
| 9. | 0 | 1 | 1 | 0.6 |
| 10. | 1 | 1 | 1 | 1 |
| 11. | 0 | 1 | 1 | 0.6 |
| 12. | 1 | 1 | 1 | 1 |
| | | | 0.83 | 3.32/4=0.83 |
| | | | | IOC =0.88 |

## Appendix I: Post-project questionnaire

**Descriptions**

The information from this questionnaire will be used for the research purpose. To protect your identity as a participant in the study, you will not be identified in any report or publication of this study.

**คำอธิบาย**

ข้อมูลจากแบบสอบถามฉบับนี้จะถูกใช้เพื่อจุดประสงค์ในการทำงานวิจัยเท่านั้น เพื่อสงวนตัวตนของท่านในฐานะของผู้ให้ข้อมูลในงานวิจัยนี้ ชื่อของท่านจะไม่ถูกระบุในรายงานหรือการตีพิมพ์ใดๆ

**Please give the information by ticking (√) in appropriate boxes, according to these numbers.** (กรุณาให้ข้อมูลโดยการทำเครื่องหมาย (√) ในช่องว่างที่เหมาะสม โดยตัวเลขแต่ละตัวแทนความหมายดังต่อไปนี้)

| Scale | Meaning |
|---|---|
| 1 | Strongly disagree: ไม่เห็นด้วยอย่างมาก |
| 2 | Disagree: ไม่เห็นด้วย |
| 3 | Neither agree nor disagree ไม่มีความคิดเห็น |
| 4 | Agree : เห็นด้วย |
| 5 | Strongly agree: เห็นด้วยอย่างมาก |



| No. | Statement | ระดับความเห็น | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 1 | I learned new ways to observe collocations from the paper-based handouts and the given concordance lines. (ฉันได้เรียนรู้วิธีใหม่ที่จะสังเกตคำปรากฏร่วมจากเอกสารที่ได้รับแจกและ concordance lines ที่ปรากฏในเอกสาร) | | | | | |
| 2 | The paper-based tasks and the given concordance lines assisted me to identify similarities of collocations. (งานในเอกสารที่ได้รับแจกและ concordance lines ที่ปรากฏในเอกสารช่วยฉันให้ระบุความเหมือนของคำปรากฏร่วม) | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3 | The paper-based tasks and the given concordance lines assisted me to identify differences of collocations. (งานในเอกสารที่ได้รับแจกและ concordance lines ที่ปรากฏในเอกสารช่วยฉันให้ระบุความแตกต่างของคำปรากฏร่วม) | | | | | |
| 4 | The paper-based tasks and the given concordance lines assisted me to group concordance lines. (งานในเอกสารที่ได้รับแจกและ concordance lines ที่ปรากฏในเอกสารช่วยฉันให้จัดกลุ่ม concordance lines ได้) | | | | | |
| 5 | The paper-based tasks and the given concordance lines assisted me in generalizing collocational patterns. (งานในเอกสารที่ได้รับแจกและ concordance lines ที่ปรากฏในเอกสารช่วยฉันสร้างรูปแบบของคำปรากฏร่วม) | | | | | |
| 6 | The paper-based handouts and the given concordance lines assisted me to learn adjective preposition collocations. (เอกสารที่ได้รับแจกและ concordance lines ที่ปรากฏในเอกสารช่วยฉันเรียนคำปรากฏร่วมอันประกอบด้วยคำวิเศษณ์และคำบุพบท ) | | | | | |
| 7 | I learned new ways to observe collocations from performing the online tasks. (ฉันได้เรียนรู้วิธีใหม่ที่จะสังเกตคำปรากฏร่วมจากการทำกิจกรรมออนไลน์) | | | | | |
| 8 | Performing the online tasks assisted me to identify similarities of collocations. (การทำงานออนไลน์ช่วยฉันให้ระบุความเหมือนของคำปรากฏร่วม) | | | | | |
| 9 | Performing the online tasks assisted me to identify differences of collocations. (การทำงานออนไลน์ช่วยฉันให้ระบุความแตกต่างของคำปรากฏร่วม) | | | | | |
| 10 | Performing the online tasks assisted me to group concordance lines. (การทำงานออนไลน์ช่วยฉันให้จัดกลุ่ม concordance lines ได้) | | | | | |
| 11 | Performing the online tasks assisted me in generalizing | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | collocational patterns. (การทำงานออนไลน์ช่วยฉันให้สร้างรูปแบบของคำปรากฏร่วม) | | | | | |
| 12 | Performing the online tasks assisted me to learn adjective preposition collocations. (การทำงานออนไลน์ช่วยฉันให้เรียนคำปรากฏร่วมอันประกอบด้วยคำวิเศษณ์และคำบุพบท) | | | | | |
| 13 | Observing collocations from the paper-based handouts is a complicated task. (การสังเกตคำปรากฏร่วมจากเอกสารที่ได้รับแจกเป็นงานที่ซับซ้อน) | | | | | |
| 14 | Identifying similarities of collocations from the paper-based handouts is a complicated task. (การระบุความเหมือนของคำปรากฏร่วมจากเอกสารที่ได้รับแจกเป็นงานที่ซับซ้อน) | | | | | |
| 15 | Identifying differences of collocations from the paper-based handouts is a complicated task. (การระบุความแตกต่างของคำปรากฏร่วมจากเอกสารที่ได้รับแจกเป็นงานที่ซับซ้อน) | | | | | |
| 16 | Grouping concordance lines from the paper-based handouts is a complicated task. (การจัดกลุ่ม concordance lines จากเอกสารที่ได้รับแจกเป็นงานที่ซับซ้อน) | | | | | |
| 17 | Generalizing collocational patterns from the paper-based handouts is a complicated task. (การสร้างรูปแบบของคำปรากฏร่วมจากเอกสารที่ได้รับแจกเป็นงานที่ซับซ้อน) | | | | | |
| 18 | Learning adjective preposition collocations from the paper-based handouts is a complicated task. (การเรียนคำปรากฏร่วมอันประกอบด้วยคำวิเศษณ์และคำบุพบทจากเอกสารที่ได้รับแจกเป็นงานที่ซับซ้อน) | | | | | |
| 19 | Observing collocations from the online tasks is a complicated task. (การสังเกตคำปรากฏร่วมจากการทำงานออนไลน์เป็นงานที่ซับซ้อน) | | | | | |
| 20 | Identifying similarities of collocations from the online tasks is a complicated task. (การระบุความเหมือนของคำ | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | ปรากฏร่วมจากการทำงานออนไลน์เป็นงานที่ซับซ้อน) | | | | | |
| 21 | Identifying differences of collocations from the online tasks is a complicated task. (การระบุความแตกต่างของคำปรากฏร่วมจากการทำงานออนไลน์เป็นงานที่ซับซ้อน) | | | | | |
| 22 | Grouping concordance lines from the online tasks is a complicated task. (การจัดกลุ่มconcordance lines จากการทำงานออนไลน์เป็นงานที่ซับซ้อน) | | | | | |
| 23 | Generalizing collocational patterns from the online tasks is a complicated task. (การสร้างรูปแบบของคำปรากฏร่วมจากการทำงานออนไลน์เป็นงานที่ซับซ้อน) | | | | | |
| 24 | Learning adjective preposition collocations from the online tasks is a complicated task. (การเรียนคำปรากฏร่วมอันประกอบด้วยคำวิเศษณ์และคำบุพบทจากการทำงานออนไลน์เป็นงานที่ซับซ้อน) | | | | | |
| 25 | I learned new ways to observe collocations with my friends.<br>(ฉันได้เรียนรู้วิธีใหม่ที่จะสังเกตคำปรากฏร่วมกับเพื่อน ๆ) | | | | | |
| 26 | I learned new ways to identifying similarities of collocations with my friends. (ฉันได้เรียนรู้วิธีใหม่ที่จะระบุความเหมือนของคำปรากฏร่วมกับเพื่อน ๆ) | | | | | |
| 27 | I learned new ways to identifying differences of collocations with my friends. (ฉันได้เรียนรู้วิธีใหม่ที่จะระบุความแตกต่างของคำปรากฏร่วมกับเพื่อน ๆ) | | | | | |
| 28 | I learned new ways to group concordance lines with my friends.<br>(ฉันได้เรียนรู้วิธีใหม่ที่จะจัดกลุ่ม concordance linesกับเพื่อน ๆ) | | | | | |
| 29 | I learned new ways to generalizing collocational patterns with my friends. (ฉันได้เรียนรู้วิธีใหม่ที่จะสร้างรูปแบบของคำปรากฏร่วมกับเพื่อน ๆ) | | | | | |
| 30 | Working in a group assisted me to learn adjective | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | preposition collocations. (การเรียนรู้ในกลุ่มช่วยให้ฉันเรียนคำปรากฏร่วมอันประกอบด้วยคำวิเศษณ์และคำบุพบท) | | | | | |
| 31 | I would rather observe collocations alone. (ฉันอยากจะสังเกตคำปรากฏร่วมคนเดียว) | | | | | |
| 32 | I would rather identify similarities of collocations alone. (ฉันอยากจะระบุความเหมือนของคำปรากฏร่วมคนเดียว) | | | | | |
| 33 | I would rather identify differences of collocations alone. (ฉันอยากจะระบุความแตกต่างของคำปรากฏร่วมคนเดียว) | | | | | |
| 34 | I would rather group concordance lines alone. (ฉันอยากจะจัดกลุ่ม concordance lines คนเดียว) | | | | | |
| 35 | I would rather generalizing collocational patterns alone. (ฉันอยากจะสร้างรูปแบบของคำปรากฏร่วมคนเดียว) | | | | | |
| 36 | I would rather learn adjective preposition collocations alone.<br>(ฉันอยากจะเรียนรู้คำปรากฏร่วมอันประกอบด้วยคำวิเศษณ์และคำบุพบท คนเดียว) | | | | | |

## Appendix J: IOC of the post-project questionnaire

| Items | Expert 1 | Expert 2 | Expert 3 | total |
|---|---|---|---|---|
| **Part I: General Information** | | | | |
| 1. | 1 | 1 | 1 | 1 |
| 2. | 1 | 1 | 1 | 1 |
| 3. | 1 | 1 | 1 | 1 |
| 4. | 1 | 1 | 1 | 1 |
| 5. | 1 | 1 | 1 | 1 |
| 6. | 1 | 1 | 1 | 1 |
| 7. | 1 | 1 | 1 | 1 |
| 8. | 1 | 1 | 1 | 1 |
| 9. | 1 | 1 | 1 | 1 |
| 10. | 1 | 1 | 1 | 1 |
| 11. | 1 | 1 | 1 | 1 |
| 12. | 1 | 1 | 1 | 1 |
| 13. | 1 | 1 | 1 | 1 |
| 14. | 1 | 1 | 1 | 1 |
| 15. | 1 | 1 | 1 | 1 |
| 16. | 1 | 1 | 1 | 1 |
| 17. | 1 | 1 | 1 | 1 |
| 18. | 1 | 1 | 1 | 1 |
| 19. | 1 | 1 | 1 | 1 |
| 20. | 1 | 1 | 1 | 1 |
| 21. | 1 | 1 | 1 | 1 |
| 22. | 1 | 1 | 1 | 1 |
| 23. | 1 | 1 | 1 | 1 |
| 24. | 1 | 1 | 1 | 1 |
| | | | | 24/24= 1 |

| | | | | |
|---|---|---|---|---|
| **Part II: Cooperative corpus consultation** | | | | |
| 25. | 1 | 1 | 1 | 1 |
| 26. | 1 | 1 | 1 | 1 |
| 27. | 1 | 1 | 1 | 1 |
| 28. | 1 | 1 | 1 | 1 |
| 29. | 1 | 1 | 1 | 1 |
| 30. | 1 | 1 | 1 | 0.66 |
| 31. | 1 | 1 | 1 | 1 |
| 32. | 1 | 1 | 1 | 1 |
| 33. | 1 | 1 | 1 | 1 |
| 34. | 1 | 1 | 1 | 1 |
| 35. | 1 | 1 | 1 | 1 |
| 36. | 1 | 1 | 1 | 1 |
| | | | | 11.66/12=0.97 |
| | | | | IOC =0.98 |

## Appendix K: IOC of the "Can-do" statement questionnaire

| Items | Expert 1 | Expert 2 | Expert 3 | total |
|---|---|---|---|---|
| **Part I: General Information** | | | | |
| 1. | 1 | 1 | 1 | 1 |
| 2. | 1 | 1 | 1 | 1 |
| 3. | 0 | 1 | 1 | 0.66 |
| 4. | 1 | 1 | 1 | 1 |
| 5. | 0 | 1 | 1 | 0.66 |
| 6. | 1 | 1 | 1 | 1 |
| 7. | 1 | 1 | 1 | 1 |
| 8. | 1 | 1 | 1 | 1 |
| 9. | 1 | 1 | 1 | 1 |
| 10. | 1 | 1 | 1 | 1 |
| | | | | 9.31/10=0.93 |
| **Part II: Cooperative corpus consultation** | | | | |
| 1. | 1 | 1 | 1 | 1 |
| 2. | 1 | 1 | 1 | 1 |
| 3. | 1 | 1 | 1 | 1 |
| 4. | 1 | 1 | 1 | 1 |
| 5. | 1 | 1 | 1 | 1 |
| 6. | 0 | 1 | 1 | 0.66 |
| 7. | 1 | 1 | 1 | 1 |
| 8. | 1 | 1 | 1 | 1 |
| 9. | 1 | 1 | 1 | 1 |
| | | | | 8.66/9=0.96 |
| | | | | IOC = 0.94 |

# Appendix L: 'Can-do' statement questionnaire

**Descriptions**

The information from this questionnaire will be used for the research purpose. To protect your identity as a participant in the study, you will not be identified in any report or publication of this study.

**คำอธิบาย**

ข้อมูลจากแบบสอบถามฉบับนี้จะถูกใช้เพื่อจุดประสงค์ในการทำงานวิจัยเท่านั้น เพื่อสงวนตัวตนของท่านในฐานะของผู้ให้ข้อมูลในงานวิจัยนี้ ชื่อของท่านจะไม่ถูกระบุในรายงานหรือการตีพิมพ์ใดๆ

**Please give the information by ticking (√) in appropriate boxes, according to these numbers.** (กรุณาให้ข้อมูลโดยการทำเครื่องหมาย (√) ในช่องว่างที่เหมาะสม โดยตัวเลขแต่ละตัวแทนความหมายดังต่อไปนี้)

| Scale | Meaning |
|---|---|
| 1 | Strongly disagree: ไม่เห็นด้วยอย่างมาก |
| 2 | Disagree: ไม่เห็นด้วย |
| 3 | Neither agree nor disagree ไม่มีความคิดเห็น |
| 4 | Agree : เห็นด้วย |
| 5 | Strongly agree: เห็นด้วยอย่างมาก |



| No. | Statement | ระดับความเห็น | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | **Part 1: Corpus strategies** | | | | | |
| 1 | I can notice which pairs of words are adjective preposition collocations. (ฉันสามารถสังเกตได้ว่าคำคู่ไหนเป็นคำปรากฏร่วมระหว่างคำวิเศษณ์และคำบุพบท) | | | | | |
| 2 | I can notice a variety of prepositions of the adjective preposition collocations. (ฉันสามารถสังเกตถึงความ | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | หลากหลายของคำบุพบทของคำปรากฏร่วมระหว่างคำวิเศษณ์และคำบุพบท) | | | | | |
| 3 | I can identify similarities of meanings of the target collocations.<br>(ฉันสามารถระบุความหมายที่เหมือนเดิมของคำปรากฏร่วม) | | | | | |
| 4 | I can identify similarities of nouns following the target collocations.<br>(ฉันสามารถระบุความคล้ายคลึงของคำนามที่ปรากฏหลังคำปรากฏร่วม) | | | | | |
| 5 | I can identify differences of meanings of the target collocations.<br>(ฉันสามารถระบุความหมายที่แตกต่างของคำปรากฏร่วม) | | | | | |
| 6 | I can identify differences of nouns following the target collocations. (ฉันสามารถระบุความแตกต่างของคำนามที่ปรากฏหลังคำปรากฏร่วม) | | | | | |
| 7 | I can group the concordance lines that are similar in terms of meaning. (ฉันสามารถจัดกลุ่มของประโยค concordance lines ที่มีความหมายเหมือนกัน) | | | | | |
| 8 | I can exclude the concordance lines that do not belong to the groups given in the tasks. (ฉันสามารถตัดประโยค concordance lines ที่ไม่เข้าพวกออกจากกลุ่มได้) | | | | | |
| 9 | I can use inferences (An inference is a logical conclusion based on observations) from many previous observations to draw a conclusion about the patterns of Group 1 collocations. (ฉันสามารถใช้ข้อสรุปจากการสังเกตที่ผ่านมา สร้างรูปแบบของคำปรากฏร่วมกลุ่มที่ 1 ) | | | | | |
| 10 | I can use inferences (An inference is a logical conclusion based on observations) from many previous observations.to draw a conclusion about | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | the patterns of Group 2 collocations. (ฉันสามารถใช้ข้อสรุปจากการสังเกตที่ผ่านมา สร้างรูปแบบของคำปรากฏร่วมกลุ่มที่ 2) | | | | | |
| | **Part 2: Cooperative strategies** | | | | | |
| 1 | I can rely on every team member. (ฉันสามารถพึ่งพาเพื่อนทุกคนในกลุ่มได้) | | | | | |
| 2 | I can be confident that the group' success comes from every member. (ฉันสามารถมั่นใจได้ว่าความสำเร็จของกลุ่มมาจากสมาชิกทุกๆคน) | | | | | |
| 3 | I can explain my role and responsibilities and complete the tasks given to me. (ฉันสามารถอธิบายหน้าที่และความรับผิดชอบของตัวเองอีกทั้งทำงานที่ได้รับมอบหมายจนเสร็จ) | | | | | |
| 4 | I can ask the person who is in charge of each duty to explain what they have learnt. (ฉันสามารถขอให้เพื่อนผู้ซึ่งมีหน้าที่ของตัวเองอธิบายสิ่งที่แต่ละคนได้เรียนรู้) | | | | | |
| 5 | I can ask my peers to explain how to solve problems concerning corpus and the tasks. (ฉันสามารถขอให้เพื่อนๆอธิบายวิธีแก้ปัญหาที่เกี่ยวกับการใช้คลังข้อมูลและงานที่ได้รับมอบหมาย) | | | | | |
| 6 | I can discuss the concepts about the collocations with my team mates. (ฉันสามารถอภิปรายเรื่องแนวคิดต่างที่เกี่ยวกับคำปรากฏร่วมกับเพื่อนๆในทีมได้) | | | | | |
| 7 | I can lead my team and convince my friends to trust my judgments about the task solutions. (ฉันสามารถเป็นผู้นำและโน้มน้าวให้เพื่อนๆเชื่อการตัดสินใจของฉันที่เกี่ยวกับการแก้ปัญหาได้) | | | | | |
| 8 | I can solve a group conflict for my team members who have difficulties in working in a group. (ฉันสามารถแก้ปัญหาความขัดแย้งในกลุ่มให้กับเพื่อนคนที่ประสบปัญหาใน | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | การทำงานร่วมกันเป็นกลุ่ม) | | | | | |
| 9 | I can comment on my group's work, identifying which parts of the group learning process are beneficial to my own learning. (ฉันสามารถแสดงความคิดเห็นต่อการทำงานของกลุ่มพร้อมทั้งระบุส่วนที่ดีของการเรียนเป็นกลุ่มที่มีผลดีต่อการเรียนของฉัน) | | | | | |

## Appendix M: IOC scores of reflective journals

| Items | Expert 1 | Expert 2 | Expert 3 | total |
|---|---|---|---|---|
| **Prompts of reflective journals for the traditional corpus consultation** | | | | |
| 1 | 1 | 1 | 1 | 01 |
| 2 | 1 | 1 | 1 | 1 |
| 3 | 1 | 1 | 1 | 1 |
| | | | | 3/3=1 |
| **Prompts of reflective journals for the cooperative corpus consultation** | | | | |
| 1 | 1 | 1 | 1 | 1 |
| 2 | 1 | 0 | 1 | 0.66 |
| 3 | 1 | 0 | 1 | 0.66 |
| | | | | 0.77 |
| | | | | IOC = 0.88 |

# VITA

Supaporn Kulsitthiboon received her B.A. (second-class honors) from Khon Kaen University and a M.A. in language teaching and learning from the University of Auckland. Currently, she is a PhD candidate of EIL program, Chulalongkorn University and an English instructor at Srinakharinwirot University, Thailand. Her main interest is in Corpus linguistics and the development of corpus materials in classroom and L2 Acquisition.