THE ACQUISITION ORDER OF L2 ENGLISH INFINITIVE AND GERUND COMPLEMENTS BY L1 THAI LEARNERS: A USAGE-BASED APPROACH

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

อันดับการรับส่วนเติมเต็มรูปกริยากลางและรูปกริยาเป็นนามในภาษาอังกฤษในฐานะภาษาที่สอง ของผู้เรียนที่ใช้ภาษาไทยเป็นภาษาที่หนึ่ง: แนวคิดที่เกี่ยวกับการใช้

นางสาวรักษิณา เขียวชอุ่ม

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต
สาขาวิชาภาษาอังกฤษเป็นภาษานานาชาติ (สหสาขาวิชา)
บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2560

Thesis Title	THE ACQUISITION ORDER OF L2 ENGLISH INFINITIVE AND GERUND COMPLEMENTS BY L1 THAI LEARNERS: A USAGE-BASED APPROACH
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Field of Study	English as an International Language
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รักษิณา เขียวชอุ่ม : อันดับการรับส่วนเติมเต็มรูปกริยากลางและรูปกริยาเป็นนามในภาษาอังกฤษในฐานะภาษาที่สองของผู้เรียนที่ใช้ภาษาไทยเป็นภาษาที่หนึ่ง: แนวคิดที่เกี่ยวกับการใช้ (THE ACQUISITION ORDER OF L2 ENGLISH INFINITIVE AND GERUND COMPLEMENTS BY L1 THAI LEARNERS: A USAGE- BASED APPROACH) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: รศ. ดร.ณัฐมา พงศ์ไพโรจน์, 81 หน้า.

งานวิจัยนี้มุ่งศึกษาประสิทธิผลของความถี่ที่มีผลต่อการรับส่วนเติมเต็มรูปกริยากลางและรูปกริยาเป็นนามในภาอังกฤษในฐานะภาษาที่สองของผู้เรียนที่ใช้ภาไทยเป็นภาษาที่หนึ่ง ผู้เข้าร่วมวิจัยครั้งนี้คือนักศึกษาชั้นปีการศึกษาที่หนึ่งจากจุฬาลงกรณ์มหาวิทยาลัย โดยแบ่งออกเป็นสองกลุ่ม คือ กลุ่มที่มีสมิทธิภาพภาษาอังกฤษต่ำ และ กลุ่มที่มีสมิทธิภาพภาษาอังกฤษสูง ตามเกณฑ์คะแนนของแบบทดสอบวัดความสามารถในการใช้ภาษาอังกฤษเพื่อการศึกษาที่จัดโดยจุฬาลงกรณ์มหาวิทยาลัย (CU-TEP) แต่ละกลุ่มประกอบไปด้วยผู้เข้าร่วมวิจัยกลุ่มละ 30 คน ผู้เข้าร่วมวิจัยได้รับมอบหมายให้ทำแบบทดสอบเลือกคำตอบที่ถูกต้อง (Word Selection Task) และ แบบทดสอบตัดสินความถูกต้องทางไวยากรณ์ (Grammaticality Judgement Test) สมมติฐานสองข้อได้ถูกกำหนดขึ้นภายใต้ทฤษฎีที่เกี่ยวกับการใช้ (The usage-based theory) ข้อที่หนึ่ง มีการตั้งสมมติฐานว่าผู้เรียนชาวไทยจะรับส่วนเติมเต็มรูปกริยากลางได้ก่อนส่วนเติมเต็มรูปกริยาเป็นนามและผลการวิจัยก็ยืนยันสมมติฐาน มีการกล่าวอ้าวว่า การที่ผู้เรียนชาวไทยรับส่วนเติมเต็มรูปกริยากลางได้ก่อนนั้นเนื่องจากส่วนเติมเต็มรูปดังกล่าวถือเป็นโครงสร้างทางภาษาที่มีความถี่ในการปรากฏสูง ในทางกลับกัน การที่ผู้เรียนชาวไทยรับส่วนเติมเต็มรูปกริยาเป็นนามได้ทีหลังนั้นเป็นเพราะส่วนเติมเต็มรูปดังกล่าวถือเป็นโครงสร้างทางภาษาที่มีความถี่ในการปรากฏต่ำ หรืออีกนัยหนึ่งคือโครงสร้างทางภาษาที่มีความถี่สูงทำให้การรับกลายเป็นเรื่องง่ายขึ้นสำหรับผู้ที่เรียนภาษาอังกฤษเป็นภาษาที่สองเนื่องจากผู้เรียนมีโอกาสได้สัมผัสกับโครงสร้างประเภทนี้มากกว่า ข้อที่สอง มีการตั้งสมมติฐานว่าความถี่ของคำกริยาที่เกิดขึ้นในโครงสร้างส่วนเติมเต็มเป้าหมายนั้นจะมีส่วนช่วยสนับสนุนในการสร้างความแข็งแกร่งแก่แผนภาพภายในจิตใจทางภาษาระดับต่ำของผู้เรียน (Low-level constructional schemas) กล่าวคือ รูปแทนนามธรรมของโครงสร้างทางภาษาที่มีความเฉพาะเจาะจงในระดับคำศัพท์ และ การใช้ภาษาของผู้เรียน อย่างไรก็ตาม ผลการวิจัยสนับสนุนสมมติฐานที่สองเฉพาะบางส่วนเท่านั้น เนื่องจากผลการวิจัยชี้ให้เห็นว่าความถี่ของคำกริยาที่เกิดขึ้นในโครงสร้างส่วนเติมเต็มเป้าหมายนั้นไม่ได้มีส่วนช่วยสนับสนุนในการสร้างความแข็งแกร่งแก่แผนภาพภายในจิตใจทางภาษาระดับต่ำของผู้เรียน และไม่ได้มีผลกระทบต่อพฤติกรรมการใช้ภาษาของผู้เรียน ผลของงานวิจัยชิ้นนี้เป็นส่วนหนึ่งของแนวคิดที่เกี่ยวกับความถี่และบทบาทหน้าที่ที่สำคัญของความถี่ที่มีต่อบริบทของการรับภาษาที่สอง

สาขาวิชา ภาษาอังกฤษเป็นภาษานานาชาติ ลายมือชื่อนิสิต .....

ปีการศึกษา 2560 ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

5887529220 : MAJOR ENGLISH AS AN INTERNATIONAL LANGUAGE

KEYWORDS: ACQUISITION ORDER, L2 ENGLISH, INFINITIVE AND GERUND COMPLEMENTS, L1 THAI, USAGE-BASED APPROACH

RAKSINA KEAWCHAUM: THE ACQUISITION ORDER OF L2 ENGLISH INFINITIVE AND GERUND COMPLEMENTS BY L1 THAI LEARNERS: A USAGE- BASED APPROACH. ADVISOR: ASSOC. PROF. NATTAMA PONGPAIROJ, Ph.D., 81 pp.

The current study aimed to investigate the frequency effects on the acquisition of L2 English infinitive and gerund complements among L1 Thai learners. The participants were first-year undergraduate students from Chulalongkorn University. They were categorized into the low and the high proficiency groups based on their CU-TEP scores. Each group consisted of 30 participants. The participants were required to complete the Word Selection Task (WST) and the Grammaticality Judgement Test (GJT). Two research hypotheses were formulated based on the usage-based theory. First, it was hypothesized that Thai learners would acquire the infinitive complements before the gerund complements and the findings conformed to the hypothesis. It was claimed that the learners acquired the infinitive complements first because they were the high type frequency construction. In contrast, the learners acquired the gerund complements later because they were the low frequency construction. In other words, the high type frequency construction facilitated L2 English learners because they were exposed more to this construction type. Second, it was hypothesized that the frequency of verbs occurring in the target complements constructions would contribute to the entrenchment of the Thai learners' low level constructional schemas (i.e. the abstract representations of constructions which were lexically specific) and their language. The results, however, partially confirmed the second hypothesis as the findings indicated that the frequency of verbs occurring in the target complements constructions did not contribute to the strengthening of the Thai learners' low level constructional schemas and affect their language use. The results of the study contributed to the concept of frequency and its vital role in the SLA context.

Field of Study:	English as an International Language	Student's Signature	.....
		Advisor's Signature	.....
Academic Year:	2017		

ACKNOWLEDGEMENTS

This thesis would not have been possible without the support of many people. Above all, I would like to thank my advisor, Assoc. Prof. Nattama Pongpairoj Ph.D. Without her patience and guidance, I could not have completed this thesis. Besides my advisor, I would like to thank my thesis committee: Assoc. Prof. Wirote Aroonmanakun, Ph.D. and Asst. Prof. Supakorn Phoocharoensil, Ph.D. for their constructive suggestions and comments on my research. In addition, I am indebted to the three highly experienced experts: Asst. Prof. Sudaporn Luksaneeyanawin, Ph.D., Asst. Prof. Raksangob Wijitsopon, Ph.D. and Asst. Prof. Theeraporn Ratitamkul, Ph.D., for their assistance on my research instruments.

My sincere gratitude also goes to my dear friends, EIL students batch 14 and EIL office staff, who always stay by my side and take good care of me, especially, Mr. Narasak Sirikanjanawong, Ms. Chanisara Tangkijmongkol, Ms. Punyavee Kosolsombat, Ms. Raveewan Viengsang, Ms. Sirinnuch Thiangsat and Mrs. Kulyada Boonyaworanant. Without them, I would have never been this far.

Lastly and most importantly, I am truly grateful for all of the support and understanding provided by my beloved family. I would have never been here since the beginning if not because of them.

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CHAPTER 1
INTRODUCTION

1.1 Background of the Study

Over the last decades, the usage-based theory has emerged as a response to traditional mainstream generative approaches to language (Bybee, 2010; Bybee & Beckner, 2009; Dabrowska, 2004; Goldberg, 2006; Langacker, 2008; Tomasello, 2003). Based on this theory, linguistic knowledge or language structure is remarkably influenced by language use (Bybee & Beckner, 2009; Croft & Cruse, 2004). That is, it can possibly be said that linguistic knowledge is driven out of language use rather than an innate ability which is strongly believed by generative linguists (Bybee & Beckner, 2009; Croft & Cruse, 2004). Also, in order to be able to form strong cognitive or abstract representations of linguistic knowledge in mind and to take them as the templates for future language use, having repeated experiences of particular linguistic elements in a bottom-up manner (i.e. through frequent usage as well as frequent encounter) is very necessary (Bybee, 2010; Bybee & Thompson, 1997). Hence, as a part of its nature, frequency, which normally hides itself under the concept of repetition, is perceived to be an important factor in language acquisition. According to Ellis (2002), the frequency of linguistic items in which second language (L2) learners have been exposed to can possibly become the facilitator for their second language acquisition. Nevertheless, the exact role of frequency has yet to be clearly understood, particularly, in the context of second language acquisition (SLA) (Almulla, 2015) because it usually interacts with other factors, such as semantic basicness and perceptual salience (Ellis, 2002; Ellis & Collins, 2009; Gass & Mackey, 2002). Therefore, this exploratory research attempted to get the better understanding of the frequency effects on the acquisition, specifically, the acquisition of the linguistic elements beyond the lexical level (i.e. syntactic level), particularly, the infinitive and the gerund complement constructions by L1 Thai learners.

The investigation of these two complement constructions is significant because of the following reasons. First, there have been a limited number of studies related to the acquisition of infinitive and gerund complements in the SLA context since most of the studies seem to focus on the definite and indefinite article, third-person singular subject-verb agreement, tense shift and modality (Schwartz & Causarano, 2007). Second, many L2 learners of English appear to get easily confused with these two complement constructions (Schwartz & Causarano, 2007). Third, both grammarians and language teachers also share a similar idea in that the concept of infinitive and gerund complement constructions is very difficult to teach or almost unteachable because of their complexity (Kitikanan, 2011; Schwartz & Causarano, 2007). Besides, it is also impossible to classify the verbs triggering the infinitive complement construction from the verbs triggering the gerund complement construction without consulting with a good dictionary (Swan, 2005). Finally, it is more interesting to look specifically at L1Thai learners' production and perception of English infinitive and gerund complement constructions because it can possibly be said that there are no parallel of the infinitive and the gerund verbal complement constructions between English and Thai (Lekawatana et al., 1969; Mallikamas, 2010).

To the best of the researcher's knowledge, there has been a lot of research exploring the acquisition of infinitive and gerund complements among L2 English learners from different native languages (Almulla, 2015; Cook, 1996; Mazurkewich, 1988; Schwartz & Causarano, 2007; Shirahata, 1990; Wakabayashi, Hokari, Haniu, Fujimoto, & Kimura, 2016), including L1 Thai learners (Kitikanan, 2011; Samana, 2005). However, while most of the studies agreed that L2 learners of English acquired the infinitive complements before the gerund complements (Almulla, 2015; Cook, 1996; Mazurkewich, 1988; Samana, 2005; Schwartz & Causarano, 2007; Shirahata, 1990; Wakabayashi et al., 2016), one research findings showed a contradiction (Kitikanan, 2011). This study revealed that L1 Thai learners were better in using the gerund complements than the infinitive complements. Also, there has never been any

research conducted on the acquisition of these 2 English language features among L1 Thai learners based on the usage-based theory. Hence, the current study filled in the gaps by investigating the acquisition order of L2 English infinitive and gerund complements among L1 Thai learners as well as using the usage-based theory as the main theoretical framework for this study.

As mentioned earlier that in order to establish strong cognitive or abstract representations of linguistic constructions or constructional schemas in mind, the concepts of repetition and frequency must be involved. Correspondingly, under the umbrella of the usage-based theory, the abstract representations of complex constructions or the constructional schemas can also be represented in various levels of abstraction, namely, high-level constructional schemas and low-level constructional schemas (Dabrowska, 2004; Langacker, 2008). The high-level constructional schemas represent the abstract representations of general patterns, which can be equivalently considered as general rules, of complex constructions. For example, the high-level constructional schema covering all possibilities of verbs for the ditransitive construction can probably be illustrated as [VERB NOUN NOUN] (Langacker, 2008). On the other hand, the low-level constructional schemas represent a lesser degree of abstractness. To put it simply, they are more lexically specific or more characterized over specific lexical items rather than the abstract representations of general patterns (Dabrowska, 2004; Langacker, 2008). For example, the low-level constructional schema for the ditransitive construction can possibly be cognitively represented as [GIVE NOUN NOUN], [SEND NOUN NOUN] or [THROW NOUN NOUN], depending on the entrenchment of verbs from the language use (Langacker, 2008). Since the effect of frequency on the low-level constructional schemas still has been inconclusive (Almulla, 2015), along with the investigation of the acquisition of the two target linguistic features, the current study also looked at the effect of frequency of verbs occurring in the target complement constructions on the entrenchment of the Thai learners' low-level constructional schema and their language use.

1.2 Research Questions

The current study was conducted to answer the following research questions:

1. What is the acquisition order of L2 English infinitive and gerund complements by L1 Thai learners?
2. Does the frequency of verbs occurring in the target complement constructions contribute to the entrenchment of the Thai learners' low-level constructional schemas and their language use?

1.3 Objectives of the Study

The objectives of the present study were as follows:

1. Based on the usage-based theory, this study will investigate the acquisition order of L2 English infinitive and gerund complements by L1 Thai learners.
2. Based on the usage-based theory, this study will investigate whether the frequency of verbs occurring in the target complement constructions contribute to the entrenchment of the Thai learners' low-level constructional schemas and their language use.

1.4 Statement of Hypotheses

The formulated hypotheses were as follows:

1. Based on the usage-based theory, Thai learners will acquire the infinitive complements before the gerund complements.
2. Based on the usage-based theory, the frequency of verbs occurring in the target complement constructions will contribute to the entrenchment of the Thai learners' low-level constructional schemas and their language use.

1.5 Scope of the Study

(1) Population and Sample

The population of this study was the first-year undergraduate Thai students at Chulalongkorn University. Furthermore, the sample of the study was selected by purposive sampling. In other words, the participants were chosen and categorized into two groups based on their scores from Chulalongkorn University Test of English Proficiency (CU-TEP). These two groups of participants were the first-year students with low English language proficiency level (CU-TEP 45 – 56 score: Middle Intermediate Level) and the first-year students with high English language proficiency level (CU-TEP 80 – 91 score: Middle Advanced Level), respectively (see Appendix A). With these two different English language proficiency groups, the research findings and the acquisition order of the two linguistic features under the investigation were expected to be clearly compared and contrasted. Moreover, each proficiency level consisted of thirty participants. Totally, there were sixty participants. Besides, all of the participants must have learned English for at least 12 years according to the government compulsory education policy in normal Thai schools or in Thai setting. They must not come from English Program (EP) or Intensive English Program (IEP) in Thai schools, or international schools where English was entirely used as a medium of instruction. In addition, none of the participants from the two groups must have lived or studied in any English-speaking country for more than three consecutive months.

(2) Target Linguistic Features

Basically, verbs taking immediately infinitive or gerund complements could be classified into three groups: 1) verbs taking immediately only infinitive complements, 2) verbs taking immediately only gerund complements and 3) verbs taking immediately both infinitive and gerund complements. However, in this study, only the first two groups – verbs taking immediately only infinitive complements and verbs taking immediately only gerund complements – were investigated. Moreover, verbs with more than one meaning that can be followed immediately by infinitive complements or gerund complements (e.g. 'fail' or 'admit') as well as verbs followed immediately by infinitive complements or gerund complements that occur as a part of

phrases or idioms (e.g. 'learn to live with something' or 'keep going') were excluded from the analysis. In addition, all of the verbs used in the production of research instrument were in the range of A1 – B1 level, based on the Common European Framework Reference for Languages (CEFR). The range of available verbs was limited from A1 level to B1 level because this was the range of verbs the researcher assumed that both groups of the participants would know. Furthermore, the verb complementation construction normally focused on transitive verbs. However, due to the narrow range or small number of verbs (i.e. A1 – B1 level) that was available and could be used to produce the tasks, not only transitive verbs that were included in this study, but also intransitive verbs, such as the verb 'hurry' and the verb 'appear'. Nevertheless, the intransitive verbs appeared in the tasks would be written in the context in which the target complement constructions, namely, the infinitive complement construction and the gerund complement construction, were needed. Thus, the term 'verb complementation' here in this study referred to both transitive and intransitive complementation.

(3) Construction Frequency of Verbs

Since this study mainly involved frequency, it was very necessary to find a reliable frequency source of actual language use, where the construction frequency of verbs or the frequency of verbs occurring in the target complement constructions (i.e. the infinitive complement construction and the gerund complement construction) could be counted. Moreover, the number of frequency of each verb must also be a representative. As a result, within the scope of this study, the frequency of each verb was counted from the first 200 random concordance lines, displayed randomly with lemma verb search from the British National Corpus (http://bncweb.lancs.ac.uk/). Furthermore, the first four verbs with the highest construction frequency and the last four verbs with the lowest construction frequency from each complement construction were used to produce the tasks.

(4) Tasks for Data Elicitation

In this study, two tasks, namely, Word Selection Task (WST) and Grammaticality Judgement Test (GJT) were used to elicit data from the participants. These two tasks were specifically designed by the researcher to elicit the data that would answer only within the scope of the two research questions.

1.6 Definition of Terms

1. Acquisition Order: The acquisition of specific syntactical features in a fixed order which can be evidenced from the language that learners produce.
2. Construction: The way in which words are put together and arranged to form a sentence, phrase and so on.
3. Verb Complementation: The infinitive complements and gerund complements that are required to follow both transitive verbs and intransitive verbs, which function as a main verb, in order to complete the meaning of the verbs in the given context.
4. Infinitive: A basic form of a verb that usually follows 'to' such as 'to eat', 'to open', and 'to join'.
5. Infinitive Complement Construction: An infinitive with to that immediately follows the main verb of a sentence in order to complete its meaning.
6. Gerund: A word ending in '-ing' that is made from a verb and used like a noun such as 'opening', 'seeing', 'going'.
7. Gerund Complement Construction: A gerund that immediately follows the main verb of a sentence in order to complete its meaning.
8. High-Level Constructional Schema: The abstract representation of a general pattern of a construction.
9. Low-Level Constructional Schema: The lesser degree of abstract representation of a construction. It is normally more lexically specific or more characterized

over one specific lexical item rather than the abstract representation of a general pattern.

10. Entrenchment: making the low-level constructional schemas of the infinitive and the gerund complement constructions strongly or firmly established in the learners' mind by having the learners experience the language features repeatedly in the lexically specific level.

11. L1 Thai Learners: First-year undergraduate students at Chulalongkorn University with the Thai language as their native language.

1.7 Significance of the Study

This study aimed to provide evidence whether the concept of frequency played a vital role in the SLA context, specifically, in the acquisition order of L2 English infinitive and gerund complements by L1 Thai learners, as well as in the entrenchment of the cognitive or abstract representations of the target constructions in the learners' mind.

CHAPTER 2
LITERATURE REVIEW

This section reviews 2.1 usage-based theory, 2.2 verbal complement structures in English and Thai and 2.3 previous studies in second language acquisition of infinitive and gerund complements.

2.1 Usage-Based Theory

This part reviews the nature of language structure under the usage-based point of view as well as other important related issues, such as domain-general cognitive processes, constructions and schemas, types of frequency and the use of corpus data as the representative of language use.

2.1.1 Domain General Cognitive Processes

Usage-based theory views language as a systematic and complex form of human behavior (Bybee, 2010; Bybee & Beckner, 2009). As the name implies, this theory believes that linguistic knowledge or language structure is built up from usage (Bybee & Beckner, 2009; Croft & Cruse, 2004). In other words, it is claimed that linguistic structure emerges out of language use rather than an innate ability which is strongly held by generative linguists (Bybee & Beckner, 2009; Croft & Cruse, 2004). Moreover, the cognitive abilities underlying the usage of language structure in the speaker's mind in the communication are those applicable in many other general cognitive domains, rather than those believed to be specific for language (Bybee, 2010; Bybee & Beckner, 2009; Croft & Cruse, 2004). According to (Bybee, 2010), 'domain-general' abilities refer to "those that are also used outside of language – in general cognition – and include chunking, categorization, the use of symbols, the ability to make inferences and so on" (p. 195-196). On the other hand, 'domain-specific' abilities refer to "those that are specific to language and not evidenced elsewhere" (p.

196). In summary, it is believed that the cognitive abilities human beings apply to speaking and understanding language are essentially the same as those applied to other cognitive tasks, such as sequential and statistical learning, reasoning, visual perception and motor activity (Bybee, 2010; Bybee & Beckner, 2009; Croft & Cruse, 2004).

Furthermore, there are mainly four domain-general cognitive processes underlying the development of linguistic knowledge in the speaker's mind during the usage (Bybee, 2010).These domain-general cognitive processes for language consist of categorization, chunking, rich memory and analogy (Bybee, 2010). Among them, categorization is considered the most important since it interacts with the others (Bybee, 2010; Bybee & Beckner, 2009). By categorization, it refers to cognitive similarity matching of the repeatedly occurring linguistic events (Bybee, 2010). For the repetitions to be recognized and categorized, the events must share some similar components (Bybee & Beckner, 2009). Second, chunking generally refers to the formation or grouping of repeated sequences of words as a single unit (Bybee, 2010). Third, rich memory refers to the memory storage which contains all details concerning language, such as phonetic rules of words or phrases, contexts of use, meanings and inferences attached to utterances (Bybee, 2010). Through the categorization process, the existing representations will be mapped onto the details of language stored in the rich memory (Bybee, 2010). Lastly, analogy refers to the process in which new utterances are created based on previously experienced utterances (Bybee, 2010). However, this process will occur only after the components of previously experienced utterances are recognized and categorized (Bybee, 2010).

Before moving to the next issue, another important concept involving the domain-general processes, the notion of repetition, also needs to be mentioned here. The importance of repetition is emphasized by Bybee and Beckner (2009). Bybee and Beckner (2009) state that "a general characteristic of cognition is that repetition of an activity has cumulative effect on future behavior" (p. 829).To put it simply, repeated

experiences or practices will eventually lead to automatization or unconscious routine (Bybee & Beckner, 2009). For instance, in the domain of motor skills, such as learning to ride a bicycle, an initially difficult task can be automatized later by a lot of practices (Bybee & Beckner, 2009). Similarly, in language learning, it involves a feedback loop. The human cognitive system produces actions while also monitoring and updating itself on the basis of those actions (Bybee & Beckner, 2009). As a result, repeatedly engaging in task leads to the formation of the representation in long-term memory. It seems that the cognitive system keeps tracking any behavior occurring repeatedly (Bybee & Beckner, 2009) Thus, it can probably be said that repeated experience has an effect on mental representation (Bybee & Beckner, 2009). With reference to these points, there is no reason to claim that language is different from any other cognitive domains (Bybee & Beckner, 2009).

2.1.2 Constructions and Schemas

Construction grammar is initially brought up by cognitive linguists to attack the componential model of the organization of a grammar which is generally found in generative syntactic theories(Croft, 2007; Croft & Cruse, 2004). Under the componential model of the organization of a grammar, the speakers' linguistic knowledge is separately organized and categorized into different components. Also, each component, namely, phonological, syntactic and semantic component, functions individually. That is, each of them only describes one aspect of a sentence or an utterance(Croft, 2007; Croft & Cruse, 2004). For example, the phonological component covers only the sound production aspect and this component only consists of the rules and constraints controlling the sound structure of the language(Croft, 2007; Croft & Cruse, 2004). For the syntactic component, it covers only the sentence structure aspect and this component only consists of the rules and constraints controlling the combination of words in a sentence(Croft, 2007; Croft & Cruse, 2004). For the semantic component, it covers only the meaning aspect and this component only consists of the rules and constraints controlling the meaning of a sentence (Croft,

2007; Croft & Cruse, 2004). Basically, since each component (phonological, syntactic and semantic components) functions separately, they need some linkers to map them together (e.g. mapping the syntactic structure of a sentence with its meaning) (Croft, 2007; Croft & Cruse, 2004). The linkers used to connect each component together are called linking rules(Croft, 2007; Croft & Cruse, 2004). There are only words or lexical items in the lexicon that contain linguistic information across components(Croft, 2007; Croft & Cruse, 2004). The basic organization of grammatical knowledge in the componential model is illustrated in Figure 2.1.

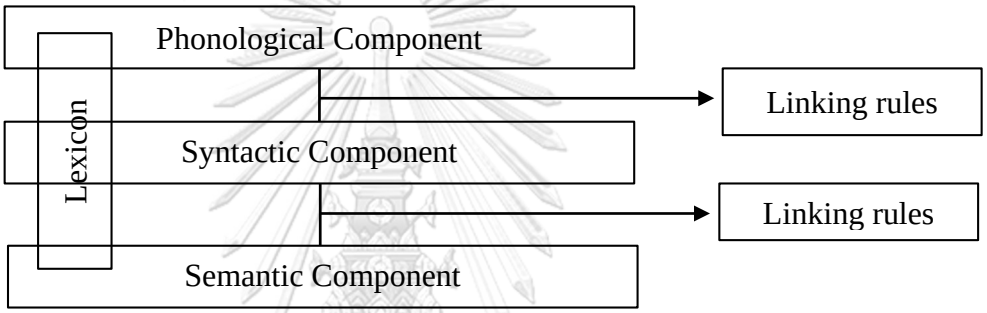

Figure 2.1: The componential model of the organization of a grammar (Croft (2007), p. 465)

Regarding this model, it is claimed that all aspects of language structure larger than a single word can be captured with general rules of the grammatical components. However, it has been found that idioms cannot be explained by the general rules of the syntactic and semantic components as well as their linking rules(Croft, 2007; Croft & Cruse, 2004). Idioms are problematic language expressions for the componential model since they are syntactically and semantically idiosyncratic in various ways and they are also too large to be assigned into the lexicon(Croft, 2007; Croft & Cruse, 2004). As a result, the existence of the idioms is claimed to be the evidence for construction grammar by cognitive linguists(Croft, 2007; Croft & Cruse, 2004). Croft (2007)states that the underlying principle of construction grammar is that the basic form of a syntactic structure is a construction.

According to Croft (2007), Goldberg (2006) and Langacker (2008), constructions are considered as symbolic mapping between forms and meanings which are believed to be the basis of the cognitive representation of language in mind. Croft (2007) defines the term 'meaning' as "all of the conventionalized aspects of a construction's function, which may include not only properties of the situation described by the utterance but also properties of the discourse in which the utterance is found and of the pragmatic situation of the interlocutors" (p.472). In other words, the term meaning here refers to semantic, pragmatic and discourse meanings. In fact, a construction is quite similar to a word structure in the lexicon in the sense that it is a paring of forms (e. g. phonological and syntactic forms) and meanings (e.g. semantic and pragmatic meanings), but only differs in the degree of complexity (Croft, 2007; Croft & Cruse, 2004). Constructions vary in sizes and degree of complexity (Goldberg, 2006). They can represent morphemes, words, idioms, phrases or sentences (Goldberg, 2006). The symbolic structure of a construction is represented in Figure 2.2.

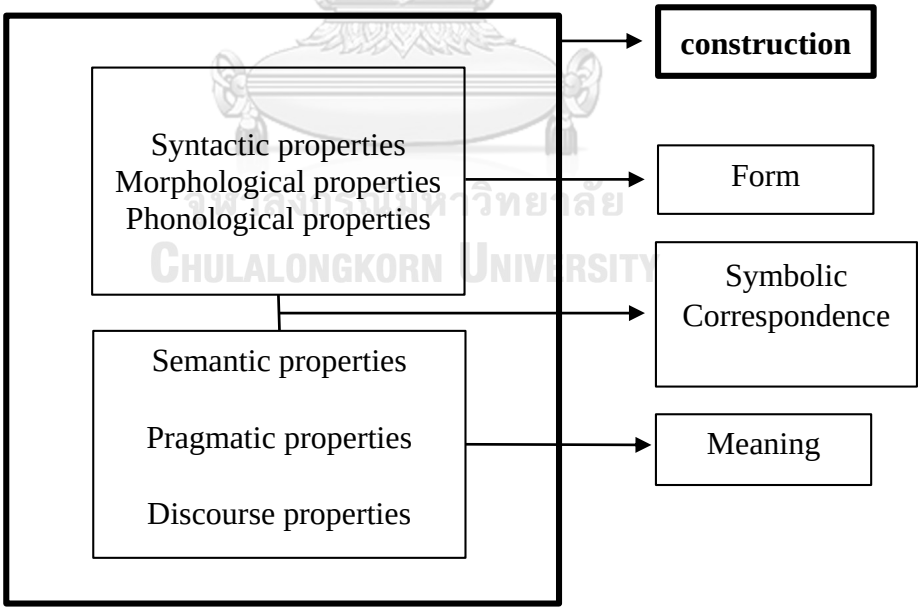

Figure 2.2: The symbolic structure of a construction (Croft (2007), p. 472)

As stated in Dabrowska (2004) and Langacker (2008), constructions are stored in the form of schemas. The schemas generally refer to the abstract representations of

linguistic structures in the speaker's mind and they can be used as templates to assemble or create new expressions (Dabrowska, 2004; Langacker, 2008). The schemas are generated or established through the process of schematization, which is defined by Langacker (2008) as "the process of extracting the commonality inherent in multiple experiences to arrive at a conception representing a higher level of abstraction" (p.17). According to Dabrowska (2004), a construction which is both complex and schematic (i.e. it has already been schematized until it becomes an abstract representation) can be referred as constructional schema. It is also claimed that constructional schemas are the equivalence of language rules in the speaker's mind since they capture the speaker's knowledge about the internal structures of complex expressions (Dabrowska, 2004). In addition, these internal structures are also represented in the same format as their instantiations or actual expressions of the language use (Dabrowska, 2004). This is where the construction grammar differs from the mainstream linguistic approaches, in which syntactic knowledge is represented in a different format from lexical knowledge and explained by various abstract principles, such as phrase structure rules or movement rules (Dabrowska, 2004). Although constructional schemas and their corresponding instantiations are represented in the same format, they are different in the level of specificity. That is, the constructional schema is characterized in less detail than its instantiations or actual expressions (Dabrowska, 2004). Furthermore, the constructional schemas themselves can also be represented in various levels of abstraction, namely, high-level constructional schemas and low-level constructional schemas (Dabrowska, 2004; Langacker, 2008). This is best explained by means of examples. In English ditransitive construction, the verbs of transfer, such as 'give' as in 'give him a cup of water', 'send' as in 'send someone a letter' and 'throw' as in 'throw John a ball', are central to the pattern (Langacker, 2008). Thus, the high-level constructional schema covering all the possibilities of verbs for the ditransitive construction can possibly be represented as [VERB NOUN NOUN] (Langacker, 2008). On the other hand, the low-level constructional schema represents a lesser degree of abstractness. That is, it is more

lexically specific or more characterized over one specific lexical item rather than the abstract representation of a general pattern (Langacker, 2008). Hence, the low-level constructional schema of the ditransitive construction can possibly be something like [GIVE NOUN NOUN], [SEND NOUN NOUN] or [THROW NOUN NOUN], depending on the entrenchment of verbs from the language use (Langacker, 2008). It seems that there is a relationship among the abstract representation of general patterns or high-level constructional schemas, the lexically specific patterns or low-level constructional schemas and actual expressions or instantiations of the language use (Dabrowska, 2004; Langacker, 2008).

2.1.3 Types of Frequency

Under the usage-based perspective, where language use determines grammatical representation in mind, a distinction needs to be made between two types of frequency: token frequency and type frequency (Bybee & Beckner, 2009; Bybee & Thompson, 1997; Croft, 2007; Croft & Cruse, 2004; Ellis & Collins, 2009).

Token Frequency

Token frequency is the count of occurrence in running texts of either particular words, such as 'broken' or 'have', or of specific phrases, such as 'I don't think' (Bybee & Thompson, 1997). To put it simply, token frequency refers to the total number of occurrences of a particular word or phrase in language use (Bybee & Beckner, 2009; Bybee & Thompson, 1997; Croft, 2007; Croft & Cruse, 2004; Ellis & Collins, 2009). In addition, a high token frequency of a word corresponds to a high number of specific usage events of that particular word (Croft & Cruse, 2004). Each time a word is used, the representation of that word in the speaker's mind is entrenched or strengthened (Croft & Cruse, 2004; Dabrowska, 2004). Hence, it can be said that token frequency is responsible for the entrenchment (i.e. the strengthening of the representation in the speaker's mind) of a single word (Bybee & Beckner, 2009; Bybee & Thompson, 1997; Croft, 2007; Croft & Cruse, 2004). Besides, the more frequently a word is accessed, the

easier it can be activated for the future use and vice versa (Dabrowska, 2004). The network pattern for low vs. high token frequency is illustrated in Figure 2.3 (Boxes with rounded corners refer to usage events while a dashed box and a bolded box refer to a lower degree of entrenchment and a higher degree of entrenchment, respectively.)

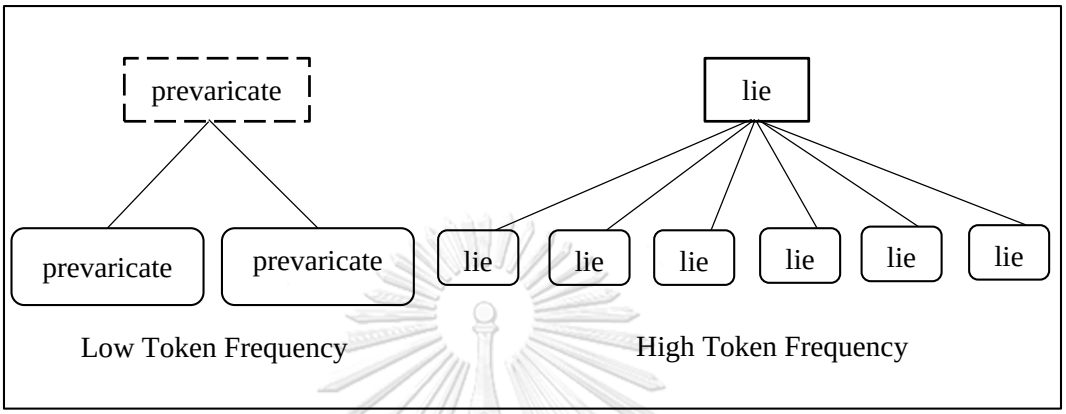

Figure 2.3: The network pattern for low vs. high token frequency (Croft and Cruse (2004), p. 309)

As a matter of fact, through high token frequency, some irregular forms, such as, irregular past tense verbs are preserved (Bybee & Beckner, 2009). Among English irregular verbs, the low token frequency verbs (i.e. verbs that are rarely used), such as 'weep' to 'wept' and 'creep' to 'crept' are more likely to regularize to 'weep' to 'weeped' and 'creep' to 'creeped', whereas the high token frequency verbs (i.e. verbs that are frequently used) resist regularization and maintain their irregularity, such as 'keep' to 'kept' and 'sleep' to 'slept' (Bybee, 2010; Bybee & Beckner, 2009; Bybee & Thompson, 1997). In summary, high token frequency strengthens the memory representations of words, making them easier to access and therefore less likely to undergo reformation (Bybee & Beckner, 2009).

Type Frequency

Type frequency, conversely, refers to the number of distinct lexical items that can be substituted in a given slot in a construction. It can be either a word-level construction for inflection or syntactic construction signifying the relation among

words (Bybee & Beckner, 2009; Bybee & Thompson, 1997; Ellis & Collins, 2009). A very clear example that can reflect type frequency is the regular English past-tense inflection '-ed'. This past-tense inflection can be applied to hundreds of different verbs in English (Bybee & Beckner, 2009; Bybee & Thompson, 1997; Croft, 2007; Croft & Cruse, 2004; Ellis & Collins, 2009).

As mentioned earlier that constructions are stored in the form of schemas (i.e. the abstract representations of the constructions) in the speaker's mind through the process of schematization where the constructions are recognized, categorized and abstracted or schematized from occurring expressions in usage events into cognitive templates or skeletal representations of shared organizational features (Dabrowska, 2004; Langacker, 2008). Once the schemas are established, they will function as templates for the creation and interpretation of new expressions (Langacker, 2008). Given these facts, the regular English past-tense inflection can also be schematized and its schema can probably be represented as something like [VERB –ed] (Croft, 2007; Croft & Cruse, 2004). Hence, it can possibly be concluded that type frequency is responsible for the entrenchment of a schema of a construction (Croft, 2007; Croft & Cruse, 2004). In addition, it can be said that the type frequency of the regular English past-tense inflection is the frequency of all different verbs that use the regular past tense in English (Croft, 2007; Croft & Cruse, 2004).

Moreover, type frequency can also be divided into two groups, including high type frequency and low type frequency. The distinctive examples of construction representing each group are the regular English past-tense inflection and the vowel change pattern for the past form of some irregular verbs respectively (Bybee & Beckner, 2009; Bybee & Thompson, 1997; Croft, 2007; Croft & Cruse, 2004; Ellis & Collins, 2009). The regular English past-tense inflection has a very high type frequency since it can be applied to hundreds of different verbs, such as 'watched', 'walked', 'talked', 'danced' and 'played' (Bybee & Beckner, 2009; Bybee & Thompson,

1997; Croft, 2007; Croft & Cruse, 2004; Ellis & Collins, 2009). On the other hand, the vowel change pattern for the past tense of some irregular verbs, such as 'blow' to 'blew', 'throw' to 'threw' and 'flow' to 'flew', has much lower type frequency as it can only be applied to limited number of verbs (Bybee & Beckner, 2009; Bybee & Thompson, 1997; Croft, 2007; Croft & Cruse, 2004; Ellis & Collins, 2009). Furthermore, a particular schema can be deeply entrenched if it has high type frequency (Croft & Cruse, 2004). The deep entrenchment can lead to easy access as well as easy activation of that schema in the future usage events (Dabrowska, 2004). The network pattern for low vs. high type frequency is illustrated in Figure 2.4 (Boxes with rounded corners refer to usage events while a dashed box and a bolded box refer to a lower degree of entrenchment and a higher degree of entrenchment, respectively.)

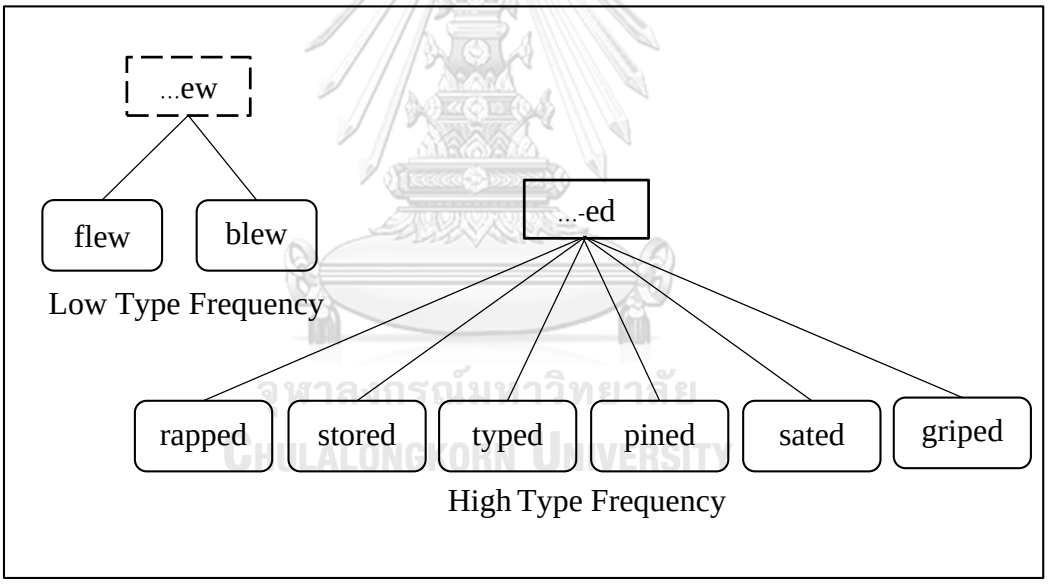

Figure 2.4: The network pattern for low vs. high type frequency (Croft and Cruse (2004), p. 309)

In fact, most of the details concerning type frequency are already summarized by Bybee and Thompson (1997) as follows:

> "...*The more lexical items that are heard in a certain position in a construction, the less likely it is that the construction will be associated with a particular lexical item and the more likely it is that a general category will be*

formed over the items that occur in that position. The more items the category must cover, the more general will be its criterial features and the more likely it will be to extend to new items. Furthermore, high type frequency ensures that a construction will be used frequently, which will strengthen its representational schema, making it more accessible for further use, possibly with new items…" (p. 384).

2.1.4 Corpus Data as the Representative of Language Use

It is undeniable that corpus is a collection of actual language data. Thus, it can probably be assumed that the corpus data are the representation of actual language use (Almulla, 2015). The following paragraphs contain the overall numerical data taken from both the British National Corpus (BNC) and the Corpus of Contemporary American English (COCA) concerning the infinitive and the gerund complement structures.

Schwartz and Causarano (2007) conducted research on the role of frequency on second language acquisition with the focus on English infinitive and gerund complements. In this research, the BNC (http://view.byu.edu.), containing 100 million words, was used to estimate the frequency of infinitive and gerund complements produced by English native speakers. Infinitive frequency was defined as the type frequency of "[vv*] to [vvi]", covering any verbs immediately followed by 'to' and an infinitive verb. In turn, gerund frequency was defined as the type frequency of "[vv*] [ving]", covering any verbs immediately followed by a gerund. In total, the infinitive frequency was found as 0.001227 in the BNC, whereas the gerund frequency was found as 0.000141.

Almulla (2015) investigated the role of frequency in L2 structure accuracy with the focus on English infinitive and gerund complements. In this study, the COCA, containing over 450 million words, was used as a reference for construction frequency. The inquiry for the overall number of instances of the infinitive

construction ([verb]. [v*] to [v?i*]) in the whole corpus yielded 2,651,059 results (5,710 per million), while the overall number of instances of the gerund construction ([verb]. [v*] [vvg]) yielded 403,343 results (869 per million).

Based on these two studies, it can probably be concluded that the infinitive complements occur more frequently than the gerund complements in both the BNC and the COCA. Also, both studies consider the infinitive complements as high type frequency construction and the gerund complements as low type frequency construction.

2.2 Verbal Complement Structures in English and Thai

2.2.1 Verbal Complement Structure in English

According to Carter and McCarthy (2006), verb complementation refers to "items which are required to follow verbs of different types in order to complete the meaning of the verb" (p. 504). These items can be noun phrases, adjectives, prepositional phrases or whole clauses, and they function as objects or complements (Carter & McCarthy, 2006). There are generally four types of complementation: Monotransitive (verb + direct object), Ditransitive (verb + indirect object + direct object), Complex Transitive (verb + direct object + object complement or locative complement) and Copular (copular verb + subject complement) (Carter & McCarthy, 2006). Among these types of complementation, the present study focused only on monotransitive complementation because it relates to the target structures (to-infinitive and gerund) examined in this study.

By saying monotransitive complementation, it means that a verb only requires a direct object and this direct object can be noun phrase as in 'I love fish', that-clause as in 'He thinks that I'm right', wh-clause as in 'We understand what you're saying' or non-finite clause (e.g. to-infinitive or –ing clause, depending on verb) as in 'They decided to buy it' or 'We love buying old furniture' (Carter & McCarthy, 2006). Now, under the monotransitive complementation, the scope was narrowed down to the only

one type of direct object or complement concerned in the study, namely, non-finite clauses which can be sub-categorized into to-infinitive and -ing or gerund complements.

The infinitive and the gerund complements are lexically based. In other words, main verbs in sentences determine which type of complement is allowed after them. Hence, choosing the following verbal complement is mostly verb specific (Almulla, 2015). Basically, verbs taking immediately infinitive or gerund complements can be classified into three groups: 1) verbs taking only infinitive complements, 2) verbs taking only gerund complements and 3) verbs taking both infinitive and gerund complements (Almulla, 2015; Azar & Hagen, 2009; Cook, 1996; Kitikanan, 2011; Mallikamas, 2010; Mazurkewich, 1988; Schwartz & Causarano, 2007; Shirahata, 1990; Swan, 2005). Some examples of verbs taking each type of complement are illustrated below.

A list of verbs followed immediately by infinitives (Azar and Hagen (2009), p.325)

agree	appear	arrange
ask	decide	demand
deserve	expect	fail
need	offer	plan
struggle	swear	threaten

A list of verbs followed immediately by gerunds (Azar and Hagen (2009), p. 324)

admit	anticipate	avoid
complete	consider	discuss
dislike	enjoy	finish
keep	miss	postpone
practice	quit	suggest

A list of Verbs followed immediately by both infinitives and gerunds (Azar and Hagen (2009), p. 324 – 325)

begin	continue	forget
hate	like	love
prefer	regret	remember
start	stop	try

The last group of main verbs, verbs which can take both the infinitive and the gerund complements, is quite complicated because some particular main verbs, when taking different types of verbal complements can result in meaning change (Mallikamas, 2010). The followings are examples of some verbs followed by either the infinitive or the gerund complement with no difference in meaning: 'begin', 'start', 'continue', 'like', 'love', 'hate', 'prefer', 'can't stand' and 'can't bear' (Azar & Hagen, 2009; Swan, 2005). For example, 'Last year, she started to work /working as John's secretary', in this sentence it does not matter whether either 'to work' or 'working' is used after the main verb 'start' because the same meaning is still conveyed after all (Mallikamas, 2010). In contrast, these five verbs: 'forget', 'regret', 'remember', 'stop' and 'try', are verbs that can be followed by either an infinitive or a gerund complement, but result in meaning change (Azar & Hagen, 2009; Swan, 2005). For example, the meaning of the sentence 'I forgot to mail you' is different from the sentence 'I forgot mailing you'. The first sentence means 'I forgot that I had to mail you' (i.e. forget to perform a responsibility, duty or task), whereas the second sentence means 'I forgot that I had already mailed you' (i.e. forget something that happened in the past) (Azar & Hagen, 2009; Mallikamas, 2010). Another example of verb that can convey different meanings is 'stop'. The sentence 'He stopped smoking' indicates that the man already quit smoking but the sentence 'He stopped to smoke' indicates that the man stopped what he was doing in order to smoke a cigarette (Schwartz & Causarano, 2007).

2.2.2 Verbal Complement Structure in Thai

Verb serialization is considered as a natural and unique characteristic of the Thai language (Mallikamas, 2010). Generally, Thepkanjana (2008) defines verb serialization as "a linguistic device by means of which two or more verbs or verb phrases are juxtaposed without any overt linker" (p. 103). The output of verb serialization, hence, is called 'serial verb construction' (SVC). Furthermore, all verbs in a sentence in Thai are considered as finite verbs and there is no verb form changing to signify non-finite characteristic as in English (Mallikamas, 2010). This is where the two languages, Thai and English, differ (Mallikamas, 2010). Basically, in a simple English sentence structure, only one finite verb, the main verb of the sentence containing tense, is permitted. Therefore, the following verb (i.e. the verb that come immediately after the main verb) must be changed into a certain form, such as to-infinitive or gerund, to signify its non-finite characteristic (Mallikamas, 2010). For better understanding of the difference between the two languages regarding the complementation, some examples are also given. The following are the comparisons between English and Thai verbal complement structures.

1. 'kháw rə̂əm thamŋaan'

   'He begin do homework'

   'He began to do (or doing) homework.'

2. 'kháw thamŋaan set'

   'He work finish'

   'He finished working.'

3. 'kháw thamŋaan tɔ̀ɔ'

   'He work continue'

   'He continued to work (or working).'

4. ˈkháw chɔ̂ɔp wâynámˌ

   ˈHe like swimˌ

   ˈHe liked to swim (or swimming).ˌ

5. ˈkháw yùt thɑmŋɑɑnˌ

   ˈHe stop workˌ

   ˈHe stopped working.ˌ

(Adapted from Lekawatana et al. (1969) p. 75)

It can probably be said that there is no correlation at all between the respective structure of English and Thai verbal complements (Lekawatana et al., 1969). Several distinct English forms are represented by the same forms in Thai (Lekawatana et al., 1969). As a result, Thai learners of English are suggested to memorize the specific collocations of the English main verbs and their verbal complements (Lekawatana et al., 1969). Swan (2005) also shares a similar idea that it is best to check with a dictionary whether which form(s) is (are) possible after a particular verb because there is no easy way to decide it.

2.3 Previous Studies in Second Language Acquisition of Infinitive and Gerund Complements

Mazurkewich (1988) investigated the acquisition of English infinitive and gerund complements among L1 Inuit learners with the prediction that the infinitive complements (i.e. the unmarked feature) would be mastered before the gerund complements (i.e. the marked one).The participants were 52 Inuit students from grade 5 to grade 10. They were later classified into two groups in accordance with their scores from the measurement test designed by the researcher, resulting in 33 students in the beginner level and 19 students in the intermediate level. The data analyzed were obtained from both a written test and Intuitive Judgment Test. Main verbs included in the tests were verbs taking both infinitive and gerund complements, verbs taking only

infinitive complements and verbs taking only gerund complements. The findings revealed that the infinitive verbal complement structure was mastered before the gerund verbal complement structure. Also, the students in the intermediate level did better than those in the beginner level in both the infinitive and the gerund complements. It was assumed that markedness played a role in the acquisition order of the infinitive complement structure and the gerund complement structure among Inuit students. By following Chomsky (1981), Mazurkewich assumed that the infinitive complements were unmarked because they could occur with a null complementizer, i.e. an invisible word standing before the infinitive complements and occupying a subject position. It was oftentimes represented as PRO. For example, in 'Philips likes [PRO to buy Inuit prints]', the PRO here was a co-referential of the antecedent Philips. On the other hand, the gerund complements lacked this complementizer position; therefore, they were considered marked.

Shirahata (1990) investigated the acquisition of English infinitive and gerund complements among L1 Japanese learners. The hypothesis was that the infinitive complements, which were considered as unmarked structure, would be acquired before the gerund complements, which were considered as marked one. The participants were 110 Japanese freshmen from 2 English classes at the same college in Shizuoka. These participants shared the same educational background. They had had 6 years of English instruction in junior and senior high school in Japan. In order to see the developmental sequence in the acquisition of the infinitive and the gerund complements, the participants were classified into three groups: the advanced level, the intermediate level and the beginner level, according to their scores from two measurement tests designed by the researcher. Verbs requiring either the infinitive or the gerund complements, verbs requiring only the infinitive complements and verbs requiring only the gerund complements were used to create the test. Altogether, there were 17 verbs studied in the test. The findings revealed that every group of participants was more accurate in the usage of the infinitive complements than the

gerund complements. The average percentages of accuracy for the infinitive complements of leaners in the advanced group, the intermediate group and the beginner group were 88.5%, 87.3% and 78.3%, respectively. On the other hand, the average percentages of accuracy for the gerund complements of learners from each group were 71.1%, 56.3% and 34.9%, respectively. In conclusion, the results confirmed the research hypothesis that the learners acquired the infinitive verbal complement structure before the gerund verbal complement structure. The results of this study were also in line with those in Mazurkewich (1988).

Cook (1996) investigated the acquisition of infinitive and gerund complements as well as the acquisition of two subcategorizations of gerund complements, including verbal gerunds and nominal gerunds (e.g. barking fiercely and the fierce barking, respectively). The first research hypothesis was that the infinitive complements would be acquired before the gerund complements and the second was that the verbal gerunds would be acquired before the nominal gerunds. The participants were 85 international students from 13 different language backgrounds in the Intensive English Program at Indiana University. Also, they were classified into 4 groups according to their TOEFL scores. The participants were required to complete 3 main tasks, including written placement composition, multiple choice and cloze tests. In addition to these production tests, the researcher also conducted oral interviews with 13 students to obtain their learning strategies. The findings revealed that the students acquired the infinitive complements first and the gerund complements later regardless of their language proficiency levels. Also, the students with the high language proficiency level did better in both types of verbal complements than those with the low proficiency level. A great number of gerund structures was used by students in the high language proficiency level compared to those in the low language proficiency level. Besides, the low language proficiency level students rarely used gerunds and typically generated the infinitive even when the gerund was possible. The results of this study were in line with those in Mazurkewich (1988) and Shirahata (1990).

Therefore, the first hypothesis was confirmed. However, for the second hypothesis, the findings from the 3 tests appeared to be inconsistent with one another. The findings from the composition data showed that students understood the use of verbal gerunds before nominal gerunds. However, the findings from the multiple choice test indicated inconsistencies between the 2 structures. Therefore, it could not be concluded which structure was acquired first. Lastly, the findings from the cloze test revealed that students with the lower language proficiency level had more difficulty with the verbal than the nominal gerunds, whereas students with the higher proficiency level had a high level of accuracy in the usage of verbal than nominal gerunds. Cook claimed that the difficulty in acquiring the gerunds could possibly be explained by markedness, salience, ESL textbook presentations and the instruction students received in their previous education.

Schwartz and Causarano (2007) investigated the relationship between the leaners' target language input and output in terms of frequency effects with the focus on English infinitive and gerund complements. The participants were 13 ESL Spanish learners attending an Intensive English Program at a university in the United States. They were later classified into three groups: the advanced learners, the high-intermediate learners and the intermediate learners, based on their scores from the Michigan Proficiency Test. The data were obtained from learners' writings, including both in-class and out of class writing assignments. The findings showed that the frequencies of the infinitive verbal complements and the gerund verbal complements made by the advanced learners, the high-intermediate learners and the intermediate learners were 181 and 9 out of 3,816, 89 and 9 out of 3,270, and 35 and 4 out of 1,525, respectively. It appeared that the frequency of the infinitive complement construction was much higher than that of the gerund complement construction. Moreover, in terms of an error analysis, there was a tendency for more errors to occur with the gerund construction rather than the infinitive construction. Schwartz and Causarano claimed that the results could possibly be explained by the fact that since

the infinitive construction was high frequency (frequently found and used) in English, based on the BNC (http://view.byu.edu), the use of infinitives would also be highly frequent. In contrast, since the gerund construction was of low frequency in English, the frequency of this type of construction was expected to be very low. According to the BNC, the infinitive frequency was found as 0.001227, while the gerund frequency was found as 0.000141. This also corresponded with the findings of Celec-Murcia and Larsen-Freeman (1983), who found that the infinitive usage outnumbered the gerund production by a ratio of 15 to 1. In other words, it probably could be said that the higher-frequency construction provided more exemplars for L2 learners to make generalizations than the lower-frequency construction and this was related to the number and kinds of the constructions made by L2 learners in their production.

Almulla (2015) investigated the role of frequency in L2 structure accuracy with the focus on English infinitive and gerund constructions. It aimed to see whether the frequency affected learners' acquisition of L2 English structures. The participants were 41 Arabic native speakers studying at California State University. They were undergraduate and graduate students. Based on their scores from the proficiency measurement designed by the researcher, the participants were classified into two groups; the high proficiency learners (HPLs) and the low proficiency learners (LPLs). The data analyzed in this research were obtained through a word-by-word self-paced reading grammaticality judgement task. Totally 10 verbs, including 4 verbs taking only the infinitives, 4 verbs taking only the gerunds and the last 2 verbs taking both the infinitives and the gerunds, were used to create 20 stimulus sentences in the test. Later, accuracy results were measured and analyzed. The findings revealed that for both groups of Arabic learners, they were more accurate in reading the sentences with the infinitive construction (HPLs: 69% and LPLs: 65%), which was considered the high frequency construction, than those with the gerund construction (HPLs: 59% and LPLs: 46%), which was considered the low frequency construction. However, the two groups'

results were only significantly different from each other under the gerund construction. According to the COCA, the inquiry for the overall number of the infinitive construction in the whole corpus yielded 2,651,059 results (5,710 per million), whereas the overall number of the gerund construction yielded 403,343 results (869 per million). Almulla suggested that the higher frequency construction (i.e. the infinitive construction) made it easier for L2 learners to acquire because learners were exposed more to this structure. In addition to the acquisition of the two constructions, the effect or the contribution of the frequency of verbs occurring in the target constructions on the entrenchment of the learners' low-level schemas and their reading performance was also investigated. However, the findings revealed that there was no significant effect.

Wakabayashi et al. (2016) proposed the principle account for the asymmetry in the acquisition of L2 English infinitives and gerunds by L1 Japanese learners. The principle was called 'Derivational Economy'. It was found that Japanese learners of English used the infinitives correctly whenever required regardless of their proficiency levels. However, the low proficiency learners used the infinitives when the gerunds should be used. Besides, the correct use of gerunds increased in accordance with proficiency level. Also, the infinitive was preferred when both were allowed. Wakabayashi et al. claimed that the number of operations in LEXICON, SYNTAX and MORPHOLOGY, which was based on the Minimalist Program from the generative approach, played a vital role in L2 learners' acquisition. To put it simply, it was suggested that if the numbers of operations occurred in the LEXICON level (or the basic level), less numbers of operations would be left to be further processed in the SYNTAX and MORPHOLOGY levels (or the advanced levels) and vice versa. Thus, for the low proficiency learners, the numbers of operations concerning the infinitives were possibly done in the LEXICON level and the numbers of operations concerning the gerunds were possibly done in the SYNTAX and MORPHOLOGY levels since it was assumed that the operations of the infinitives were easier than the operations of

the gerunds. In contrast, for the high proficiency learners, the numbers of operations concerning both the infinitives and the gerunds were probably done in the LEXICON level since the learners were already in the high proficiency level and equipped with the grammatical knowledge concerning both the infinitives and the gerunds. As a result, it appeared that the low proficiency learners preferred using the infinitives over the gerunds, whereas the high proficiency learners performed well in both the infinitives and the gerunds.

In addition to the previous studies conducted among the participants from different native language backgrounds such as Inuit, Japanese and Spanish, some of the previous studies were also conducted in L1 Thai context.

Samana (2005) investigated the interlanguage of complement usage among Thai university students, specifically, the developmental sequences of the Thai university students' complement interlanguage and the strategies influencing the Thai university students' complement interlanguage. The participants were 30 Thai university students at Dhurakij Pundit University, taking General English II course. The participants were separated equally into 2 groups: the high proficiency level group and the low proficiency level group, based on their grades from their previous General English I course. The participants in the high proficiency groups consisted of 15 students with their score ranging between 81% - 85%, whereas the participants in the low proficiency group consisted of 15 students with their score ranging between 58% - 60%. The data was collected through the students' writing essays in the General English II course. Each student was assigned to write 6 free composition essays with given topics. Also, the length of each essay was 70 words or more. The complements made by the students were later categorized according to their grammatical constructions: non-finite complements, composing of 'to' infinitive complements, 'ing' complements, 'bare' infinitive complements and 'wh' infinitive complements, and finite complements, consisting of 'that' complements and 'wh' complements. The findings revealed that the finite complements seemed to be more complicated than the finite

complements since all students from both the high proficiency group and the low proficiency group preferred using the non-finite complements. Among the non-finite complements, it seemed that 'to' infinitive complements were acquired before 'ing' complements as well as 'wh' infinitive complements since 'to' infinitive complements were used with high numbers in both groups of participants. Furthermore, for the finite complements, it seemed that 'that' complements were acquired before 'wh' complements. The data showed that the students with the low proficiency level could only produce 'that' complements, while the students with the high proficiency level could produce both 'that' complements and 'wh' complements. Samana claimed that the strategies involved with the students' usage of complement in this study were use of formulaic expressions, language transfer, overgeneralization, transfer of training and hypercorrection.

Kitikanan (2011) investigated the ability of Thai learners in using the infinitives and the gerunds after complement-taking verbs. The participants were 108 students from the Faculty of Humanities at Naresuan University with mixed academic years of study and majors. The data were obtained from an open-ended questionnaire. Each questionnaire consisted of altogether 28 questions, 14 questions containing verbs taking only the infinitive complements and the other 14 questions containing verbs taking only the gerund complements. Also, the participants needed to write down the reasons for their answers. The findings revealed that Thai students had low proficiency in both types of verbal complements. However, they seemed to be a little bit more capable of using the gerund complements than the infinitive complements with the mean score of the gerund complements 7.38 (26.36%) and the mean score of the infinitive complements 5.09 (18.19%) out of 14. Kitikanan claimed that the results could possibly be explained by both positive and negative transfer. The correct use of infinitive and gerund complements was significantly influenced by transfer of training. That is, many students remembered that some verbs needed to be followed by the infinitive complements and some by the gerund complements. On the other hand,

most errors found in students' production seemed to be influenced by negative transfer, that is, students transfer the Thai language structure into their English production. It appeared that they tended to use base forms of verbs instead of the infinitive or the gerund complements after the main verb.

To the best of the researcher's knowledge, there has been a lot of research investigating the acquisition of infinitive and gerund complements among L2 English learners from different L1 backgrounds, for example, Inuit learners (Mazurkewich, 1988), Japanese learners (Shirahata, 1990), Japanese and Malay learners (Cook, 1996), Spanish learners (Schwartz & Causarano, 2007), Arabic learners (Almulla, 2015) and Japanese learners (Wakabayashi et al., 2016). Also, there has been research conducted with L1 Thai learners on the acquisition of theses 2 English features (Kitikanan, 2011; Samana, 2005). However, the results from Kitikanan (2011)'s study contrasted with those from other studies, including Samana (2005)'s study. While most of the studies (Almulla, 2015; Cook, 1996; Mazurkewich, 1988; Samana, 2005; Schwartz & Causarano, 2007; Shirahata, 1990; Wakabayashi et al., 2016) claimed that L2 learners of English acquired infinitive complements before gerund complement, the study of Kitikanan (2011) revealed that L1 Thai learners did better in gerund complements rather than infinitive complements. In addition, there has never been any research on the acquisition of L2 English infinitive and gerund complements, particularly, in the SLA context of L1 Thai learners, conducted under the usage-based point of view. Therefore, this research filled in the gaps by exploring the acquisition order of L2 English infinitive and gerund complements among L1 Thai learners under the usage-based perspective.In addition to the investigation of acquisition order of English infinitive and gerund complements, the current research also explored the effect of frequency of verbs occurring in the target complement constructions on the entrenchment of the learners' constructional schemas, specifically, low-level constructional schemas and their language use. As a matter of fact, this issue was already studied by Almulla (2015) but the findings appeared to be insignificant.

CHAPTER 3
RESEARCH METHODOLOGY

This chapter describes the research objectives, population and sample, research instruments, data collection and data analysis of the present research.

3.1 Research Objectives

This current research aimed to investigate the acquisition order of L2 English infinitive and gerund complements by L1 Thai learners as well as the effect of frequency of verbs occurring in the target complement constructions on the entrenchment of the learners' low-level constructional schemas.

3.2 Population and Sample

The population of this study was the first-year undergraduate Thai students at Chulalongkorn University. The sample of the study was selected by purposive sampling. The participants in this study were chosen and categorized into two groups based on their scores from CU-TEP. This test was developed by Chulalongkorn University in order to measure students' ability to use English for academic purposes. Also, it was Chulalongkorn University's policy for the first-year undergraduate Thai students from every faculty to take the CU-TEP. Thus, the two groups of the participants were the first-year undergraduate students with a low English language proficiency level and the first year undergraduate students with a high English language proficiency level. For this study, the low proficiency group consisted of 30 students with the CU-TEP score 45 – 56 (Middle-Intermediate Level), whereas the high proficiency group consisted of 30 students with the CU-TEP score 80 – 91 (Middle-Advanced Level). These two proficiency groups were intentionally selected to compare and contrast the acquisition order of the two English language features under the investigation. Totally, there were 60 participants. In addition, all of the participants

were informed that their personal information and their test results would be kept confidential and would be used for the research purpose only.

In order to participate in this study, the participants must have the following qualifications. First, they must be first-year undergraduate students from any faculty with the Thai language as their native language. Second, their CU-TEP score must be either in the range of 45 – 56 (Middle-Intermediate Level) or in the range of 80 – 91 (Middle-Advanced Level) only. Third, they must have learned English for at least 12 years according to the government compulsory education policy in normal Thai schools, where Thai language is used as a medium of instruction. Furthermore, they must not have come from Thai schools with English Program (EP) or Intensive English Program (IEP) or international schools where English is mainly used as a medium of instruction. In addition, none of them must have lived or studied in any English-speaking country for more than three consecutive months.

Furthermore, the recruitment of the participants was done publicly. In other words, the researcher officially asked for permission from the authorities to display a recruiting poster, which was written in the Thai language, in many places around the university campus. The researcher also asked for help from the teachers who teach English fundamental course for the first-year students to announce the recruitment in their classrooms. However, the contact between the researcher and the participants was done out of class. The researcher made an appointment with the participants personally about the date and time that the participants were available to do the tasks. After completing all the tasks, the participants were immediately paid 100 Thai Baht.

3.3 Research Instruments

This section presented the two tasks used for data elicitation, verb selection process for task production, expert's validation and results of the pilot study respectively.

3.3.1 Tasks for Data Elicitation

This part explained the details of the two tasks used to elicit data from the participants, namely, Word Selection Task (WST) and Grammaticality Judgement Test (GJT).

3.3.1.1 Word Selection Task (WST)

The task was designed to test the participants' ability in producing the L2 features under the investigation, namely, infinitive complements and gerund complements. The total number of the test items was 30, consisting of 8 target test items and 22 distractors (see Appendix B). Furthermore, these 8 target test items could be divided equally into two groups in accordance with the two types of verb complement: 4 items followed immediately by infinitive complements and another 4 items followed immediately by gerund complements. Besides, the other 22 distractors concerned several grammatical aspects, such as singular and plural forms, pronouns, determiners, adjectives and adverbs. In terms of scoring, each target test item scored 1 point. Therefore, the full score of this task was 8. For this task, as the name implies, the participants were required to read each sentence carefully and circle the correct answer given in the parentheses as in examples 1 and 2.

1. I really enjoyed (**to play**/ **playing**) tennis with my father.

2. Three prisoners attempted (**to escape**/ **escaping**) from the jail yesterday.

The participants were asked to examine whether each target test item could be either followed immediately by infinitive complements or gerund complements.

3.3.1.2 Grammaticality Judgement Test (GJT)

The GJT was used to examine the participants' underlying knowledge of the L2 features under the consideration, which were infinitive complements and gerund complements, respectively. The total number of the test items was

30, consisting of 8 target test items and 22 distractors as same as in the previous task (see Appendix C). However, this task involved 8 more verbs or another different set of verbs used in the previous task. Totally, there were two different sets of verbs. It was expected that having two different sets of verbs helped prevent the participants from memorizing the answers and using their metalinguistic knowledge in completing the tasks.

The 8 target test items could also be divided equally into two groups in accordance with the two types of verb complement: 4 items followed immediately by infinitive complements and another 4 items followed immediately by gerund complements. Among the 4 target test items that could be followed immediately by infinitive complements, 2 target test items were written grammatically, whereas another 2 target test items were written ungrammatically. Similarly, among the 4 target test items that could be followed immediately by gerund complements, 2 target test items were written grammatically, while another 2 target test items were written ungrammatically. In addition, various grammatical aspects, such as singular and plural forms, pronouns, determiners, adjectives and adverbs were also used as distractors in this task. For this task, the participants were asked to examine whether each target test item was grammatical as in examples 3, 4, 5 and 6.

3. I finished **to write** the report just minutes before it was due. ( ) _____

4. Despite her baby face, she appeared **to be** in her late forties. ( ) _____

5. I really disliked **being** away from my family. ( ) _____

6. We decided **going** to Canada for our holidays. ( ) _____

The participants were required to read each sentence carefully and identify the underlined part of each sentence. If it was grammatically correct, the participants were required to put a tick mark (✓) in the parentheses. If it was grammatically wrong or ungrammatical, the participants were required to put a

cross mark (X) in the parentheses and were required to correct the underlined part in the space provided as in the examples mentioned above. In terms of scoring, each item carried 1 point. The score was given based on the criteria shown in the Table 3.1.

Table 3.1: Criteria for scoring in Grammaticality Judgement Test

Scoring	Criteria
1 point	a correct judgement on a grammatically correct item.
1 point	a correct judgement on a grammatically incorrect item with a grammatically accurate correction
0 point	an incorrect judgement on a grammatically correct item
0 point	an incorrect judgement on a grammatically incorrect item
0 point	a correct judgement on a grammatically incorrect item without any correction or with a grammatically inaccurate correction

Concerning the scoring criteria in GJT, for each item, the participants would receive either 1 or 0 point. They would be scored either in the case of having a correct judgement on a grammatically correct item or having a correct judgement on a grammatically incorrect item with a grammatically accurate correction. The participants would be scored for these two criteria because the correct judgement indicated that they had some knowledge of the investigated linguistic features. If the participants could make a correct judgement on a grammatically incorrect item, but could not provide a grammatically accurate correction, they would not receive any score since it suggested that they were not truly equipped with the linguistic knowledge of the language features.

3.3.2 Verb Selection Process for Task Production

In point of fact, the CU-TEP score could not be directly compared with the CEFR Level. However, in order to identify the level of vocabulary of all the verbs used for the task production, a reasonable benchmark or scope was needed to be

created. Fortunately, there was an approximate comparison between the CU-TEP score with the TOEFL Paper Based Version score and their corresponding levels. Thus, the two ranges of the CU-TEP score, which were 45 – 56 (Middle Intermediate Level) and 80 – 91 (Middle Advanced Level), were compared with the TOEFL Paper Based Version score, respectively. As a result, it appeared that the two target ranges of the CU-TEP score, which were 45 – 56 and 80 – 91, were approximately equivalent to the two ranges of the TOEFL Paper Based Version score, which were 437 – 473 and 550 – 587, respectively. Later, these two ranges of the TOEFL Paper Based Version score were compared with the CEFR Level. Apparently, it seemed that the two target ranges of the TOEFL Paper Based Version score, which were 437 – 473 and 550 – 587, were nearly equivalent to B1 level and C1 level, respectively (http://secure.vec.bc.ca/toefl-equivalency-table.cfm). Based on this piece of information, it could possibly be assumed that the participants should have some knowledge concerning verbs that were in the range of A1 – B1 level according to the CEFR. In addition, to make the variable constant, all of the verbs used in the complementation position were also in the same range of A1 – B1 level. Besides, all of the target test sentences were also written in the past tense. For the better understanding, the comparisons among the CU-TEP Score, TOEFL Paper Based Version Score and CEFR Level were illustrated in Table 3.2.

Table 3.2: The comparisons among the CU-TEP Score, TOEFL Paper Based Version Score and CEFER Level

CU – TEP SCORE	TOEFL PAPER BASED VERSION SCORE	CEFR LEVEL
45 – 56	437 – 473	B1
80 – 91	550 – 587	C1

After getting the scope of the available verbs for the task production, the list of verbs within the particular scope was taken from English Vocabulary Profile established by Cambridge University Press (http://vocabulary.englishprofile.org). It was

a website providing free vocabulary service in accordance with the CEFR Level to support English language learning and teaching. All of the verbs in the list were manually checked with dictionaries: Cambridge Online Dictionary (http://dictionary.cambridge.org), Oxford Advanced Learners' Dictionary (2010) and Longman Dictionary of Contemporary English (2014), whether they were followed immediately by infinitive complements or gerund complements.

Verbs with more than 1 meaning that could be followed immediately by infinitive complements or gerund complements (e.g. 'fail' or 'admit') as well as verbs followed immediately by infinitive complements or gerund complements that occurred as a part of phrases or idioms (e.g. 'learn to live with something' or 'keep going') were excluded from the list because different meanings of verbs and specific structure of phrases or idioms might affect the frequency results counted from the corpus. After the checking process, each verb remaining in the list was put into the corpus data search to see its frequency of occurrence in the target complement construction. However, since the number of occurrences of each target verb from the whole corpus appeared to be very large, it was decided that the frequency of each verb occurring in the target complement construction would be counted only from the first 200 random concordance lines. Moreover, under the number of 200 concordance lines, it appeared that the variation of the frequency of verbs occurring in the target complement constructions could be obviously seen. Hence, the first 200 concordance lines of each target verb, displayed randomly with lemma verb search from the BNC Corpus (http://bncweb.lancs.ac.uk/) were used as the scope for this study. As a result, the first four verbs with the highest construction frequency and the last four verbs with the lowest construction frequency from each complement construction, which were counted from the 200 random concordance lines, were used to produce the tasks. In other words, there were totally eight verbs from each complement construction. For better understanding, all of the selected verbs were illustrated in Table 3.3.

Table 3.3: The list of verbs used in the task production

	Verb + To. Infinitive	Corpus Frequency	Verb + Gerund	Corpus Frequency
High Construction Frequency Verb	1.Attempt	163/200	1. Enjoy	22/200
	2. Refuse	123/200	2. Involve	19/200
	3. Appear	66/200	3. Finish	16/200
	4. Decide	64/200	4. Dislike	15/200
Low Construction Frequency Verb	5. Demand	14/200	5.Recommend	7/200
	6. Offer	14/200	6. Postpone	6/200
	7. Apply	5/200	7. Suggest	4/200
	8. Hurry	4/200	8. Report	2/200

All of the verbs were later randomly separated into two groups for the two tasks, namely, WST and GJT, respectively as shown in Table 3.4 and Table 3.5.

Table 3.4: The list of verbs used in Word Selection Task (Task 1)

Word Selection Task (Task 1)			
Verb + To. Infinitive	**Frequency**	**Verb + Gerund**	**Frequency**
Attempt (High)	163/200	Enjoy (High)	22/200
Refuse (High)	123/200	Involve (High)	19/200
Demand (Low)	14/200	Recommend (Low)	7/200
Offer (Low)	14/200	Postpone (Low)	6/200

Table 3.5: The list of verbs used in Grammaticality Judgement Test (Task 2)

Grammaticality Judgement Test (Task 2)			
Verb + To. Infinitive	**Frequency**	**Verb + Gerund**	**Frequency**
Appear (High)	66/200	Finish (High)	16/200
Decide (High)	64/200	Dislike (High)	15/200
Apply (Low)	5/200	Suggest (Low)	4/200
Hurry (Low)	4/200	Report (Low)	2/200

3.3.3 Experts' Validation (The Index of Item-Objective Congruence)

After the task production process, the two tasks, namely, WST and GJT were inspected by three highly experienced linguists for grammaticality and appropriateness. These three experts were teachers, teaching English linguistics, from the Faculty of Arts, Chulalongkorn University. The inspection was based on the Index of Item-Object Congruence (IOC), scoring (+1) = certain that the test item was congruent with the objectives, scoring (0) = uncertain that the test item was congruent with the objectives and scoring (-1) = certain that the test item was NOT congruent with the objectives. The IOC result of each test item was calculated. The target test item which rated between 0.50 – 1.00 was considered acceptable (see Appendix D and E).

3.4 Data Collection

The two tasks, namely, WST and GJT were pilot tested with two groups of the participants, consisting of 15 participants with low English language proficiency level and 10 participants with high English language proficiency level. There were totally 25 participants in this pilot study. These two groups of the participants had the required qualifications as mentioned in the part of population and sample (see 3.2). Moreover, each of the participants was recruited and paid 100 Thai Baht after finishing the tasks. This pilot study was conducted at Chulalongkorn University, in the second semester of the academic year 2016, during the 7th – 10th of March, 2017. After conducting the pilot study, it appeared that no major adjustment was needed. Thus, in order to make use of the collected data, the findings from the pilot study were also included in the main study.

Regarding this reason, the data collection process in this research was divided into two phases. To put it simply, the data from the pilot study, which were collected in the second semester of the academic year 2016, during March 7th – 10th 2017 at Chulalongkorn University, were counted as the first phrase. Moreover, the new data, which were counted as the second phase, were newly collected in the summer session

of the academic year 2016, during June 5th – 20th 2017, at Chulalongkorn University. In both phases, the recruitment of the participants was announced publicly around the university campus. All of the participants from these 2 phases had the required qualifications as mentioned in the part of population and sample. Finally, each proficiency group consisted of 30 participants. Totally, there were 60 participants for the two proficiency groups.

3.5 Data Analysis

Once the data were obtained from the two tasks, only the sixteen target items, which were of interest to this study, were checked with the answer key by the researcher. After the checking process, the data were analyzed quantitatively with the descriptive statistics from Microsoft Excel.

3.6 Stages of Research according to Objectives and Methods

The stages of the current research are as follows:

1. Reviewing the literature on related topics: the usage-based theory, verbal complement structures in English and Thai, and previous studies in second language acquisition of infinitive and gerund complements.
2. Specifying the scope of verbs followed immediately by infinitive complements and verbs followed immediately by gerund complements to be collected for the data analysis.
3. Designing the research instruments used in the study.
4. Having three English linguistic experts validate the instruments.
5. Conducting a pilot study to evaluate the feasibility of instruments and obtain an overview of the acquisition order of L2 English infinitive and gerund complements by L1 Thai learners as well as the effect of the frequency of verbs on the entrenchment of the abstract representations of the target constructions in the learners' mind.

6. Analyzing the data and summarizing the findings from the pilot study.
7. Conducting the main study.
8. Analyzing the data, discussing, summarizing, and concluding the findings of the main study.

CHAPTER 4
RESULTS AND DISCUSSIONS

This chapter reports the results and provides the discussions regarding the data elicited from the two tasks, namely, the Word Selection Task (WST) and the Grammaticality Judgement Test (GJT) as mentioned in Section 3.3.3. Also, since there are two research hypotheses in this study, the results and the discussions are arranged in accordance with the research hypotheses. Hence, this chapter mainly consists of 4.1 results and discussions of hypothesis 1 and 4.2 results and discussions of hypothesis 2, respectively.

4.1 Results and Discussions of Hypothesis 1

Hypothesis 1 is that, based on the usage-based theory, Thai learners will acquire the infinitive complements before the gerund complements. To answer this hypothesis, the total scores, the percentages, the mean scores and the standard deviations of correct answers, which were divided and calculated separately between the infinitive complements and the gerund complements, from WST and GJT completed by the two groups of the participants were compared.

Table 4.1: Results on the correct answers of WST obtained from the low and the high proficiency groups

WST (Task 1)									
Proficiency Level	No.	Verb + Infinitive Complements				Verb + Gerund Complements			
		Total	%	Mean	SD	Total	%	Mean	SD
Low Proficiency	30	106/120	88.33%	3.53	0.73	44/120	36.67%	1.46	1.13
High Proficiency	30	108/120	90%	3.6	0.56	98/120	81.67%	3.26	0.69

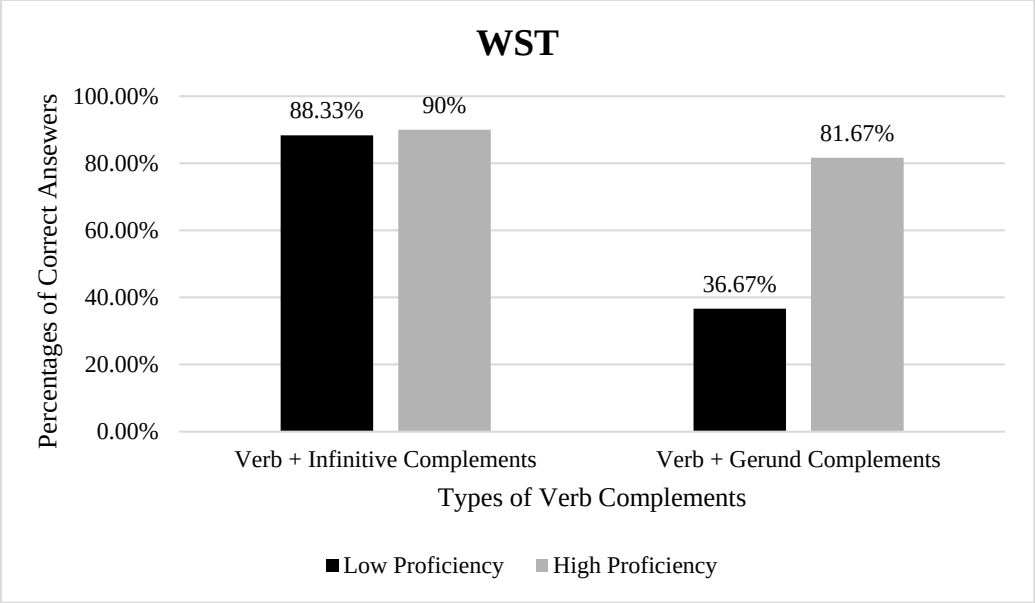

Figure 4.1: Results on the correct answers of WST obtained from the low and the high proficiency groups

For WST, the data in Table 4.1 and Figure 4.1 showed that both groups did in the part of the infinitive complements (Low proficiency group: 106 out of 120 or 88.33% and High proficiency group: 108 out of 120 or 90%) better than that of the gerund complements (Low proficiency group: 44 out of 120 or 36.67% and High proficiency group: 98 out of 120 or 81.67%). In addition, it could be obviously seen that, for the gerund complements, the high proficiency group (81.67%) outperformed the low proficiency group (36.67%).

Table 4.2: Results on the correct answers of GJT obtained from the low and the high proficiency groups

GJT (Task 2)									
Proficiency Level	No.	Verb + Infinitive Complements				Verb + Gerund Complements			
		Total	%	Mean	SD	Total	%	Mean	SD
Low Proficiency	30	105/120	87.50%	3.5	0.68	57/120	47.50%	1.9	1.12
High Proficiency	30	105/120	87.50%	3.5	0.57	98/120	81.67%	3.26	0.69

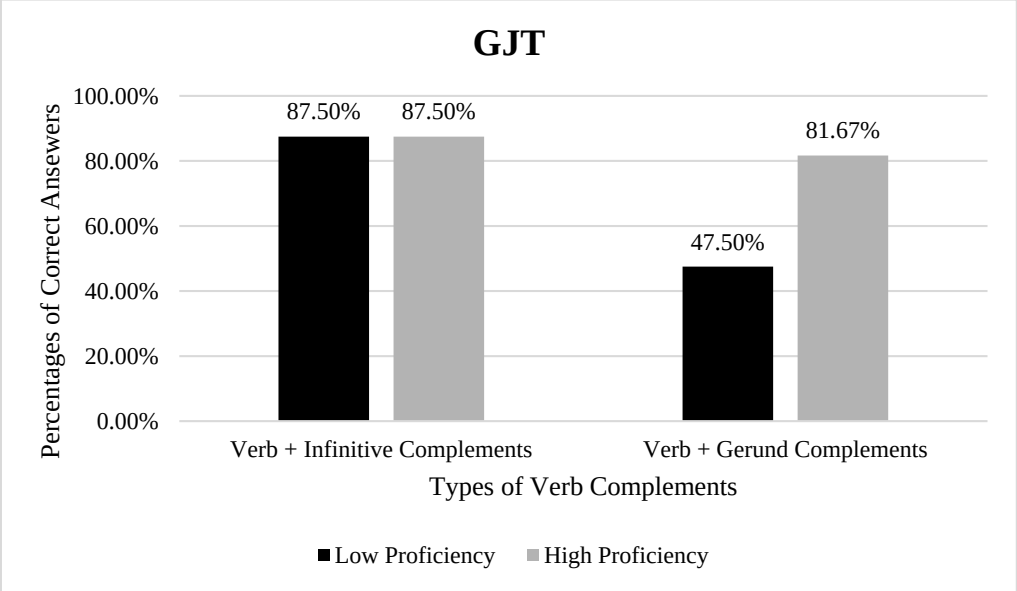

Figure 4.2: Results on the correct answers of GJT obtained from the low and the high proficiency groups

Similarly, for GJT, the data in Table 4.2 and Figure 4.2 revealed that both groups were better at using the infinitive complements (Low proficiency group: 105 out of 120 or 87.50% and High proficiency group: 105 out of 120 or 87.50%) than the gerund complements (Low proficiency group: 57 out of 120 or 47.50% and High proficiency group: 98 out of 120 or 81.67%). Besides, it could be noticed that the high

proficiency group (81.67%) also outperformed the low proficiency group (47.50%) in the part of the gerund complements.

The two proficiency groups appeared to be more accurate in using the infinitive complements rather than the gerund complements. Moreover, the low proficiency group tended to use the infinitive complements when the gerund complements were required. Apart from the use of the two target linguistic features interchangeably, a few wrong answers were the use of the base forms of verbs. In addition, the accurate use of the gerund complements seemed to increase in accordance with the proficiency level. Shirahata (1990) claimed that among the three components, particularly, verbs followed by the base forms of verbs, verbs followed immediately by infinitive complements and verbs followed by gerund complements, the first one to be acquired of all kinds was verbs followed by the based forms, the second one to be acquired was verbs followed by infinitive complements and the last one to be acquired was verbs followed by gerund complements, respectively. The results showed that L1 Thai learners acquired the infinitive complements before the gerund complements.

This phenomenon can probably be explained by the usage-based theory, particularly, the concept of type frequency. Regarding this theory, linguistic knowledge is remarkably influenced by language use (Bybee & Beckner, 2009; Croft & Cruse, 2004). It can be said that linguistic knowledge emerges out of language use rather than the innate ability (Bybee & Beckner, 2009; Croft & Cruse, 2004). Hence, in order to form strong cognitive or abstract representations of linguistic knowledge in mind, having repeated experiences of particular linguistic elements through frequent usage as well as frequent encounter are very essential (Bybee, 2010; Bybee & Thompson, 1997). Besides, regarding the concept of type frequency, the infinitive complements are considered as the high type frequency construction, whereas the gerund complements are considered as the low type frequency construction (Almulla, 2015; Schwartz & Causarano, 2007). The frequency of linguistic elements in which L2

learners have been exposed to can possibly turn into the facilitator for their SLA (Ellis, 2002). Once the abstract representations of linguistic knowledge or constructional schemas are established, they will function as templates for the creation and interpretation of the new expressions (Langacker, 2008). In conclusion, the linguistic feature with the high type frequency, namely, the infinitive complements, will help ensure that the specific construction or structure will be used frequently, leading to the strengthening of its abstract representation and making it more accessible for future use as well as making it much easier to extend the usage of the construction with new items and vice versa for the linguistic feature with the low type frequency. As a result, the first research hypothesis was confirmed. In addition, the results of this study were also in line with those in Almulla (2015), Cook (1996), Mazurkewich (1988), Samana (2005), Schwartz and Causarano (2007), Shirahata (1990), and Wakabayashi et al. (2016) in the way that L2 English learners, regardless of their L1 backgrounds, would acquire the infinitive complements before the gerund complements (see Section 2.3).

4.2 Results and Discussions of Hypothesis 2

Hypothesis 2 is that, based on the usage-based theory, the frequency of verbs occurring in the target complement constructions will contribute to the Thai learners' low-level constructional schemas and their language use. To answer this hypothesis, the percentages of the correct answers from both groups of the participants on the target verbs in WST and GJT were compared in terms of their trends with the frequency of the target verbs occurring in the target complement constructions (i.e. the infinitive and the gerund complement constructions) counted from the BNC under the scope of first 200 random concordance lines as mentioned in Sections 3.3.1 and 3.3.2.

Table 4.3: Results on the verbs followed immediately by infinitive complements in WST obtained from the low and the high proficiency groups

WST (Task 1)						
Verb + Infinitive Complements	Raw Corpus Frequency (BNC)		Low Proficiency		High Proficiency	
	Total	%	Total	%	Total	%
Attempt (High)	163/200	81.50%	28	93.33%	30	100%
Refuse (High)	123/200	61.50%	25	83.33%	28	93.33%
Demand (Low)	14/200	7%	29	96.67%	27	90%
Offer (Low)	14/200	7%	24	80%	23	76.67%

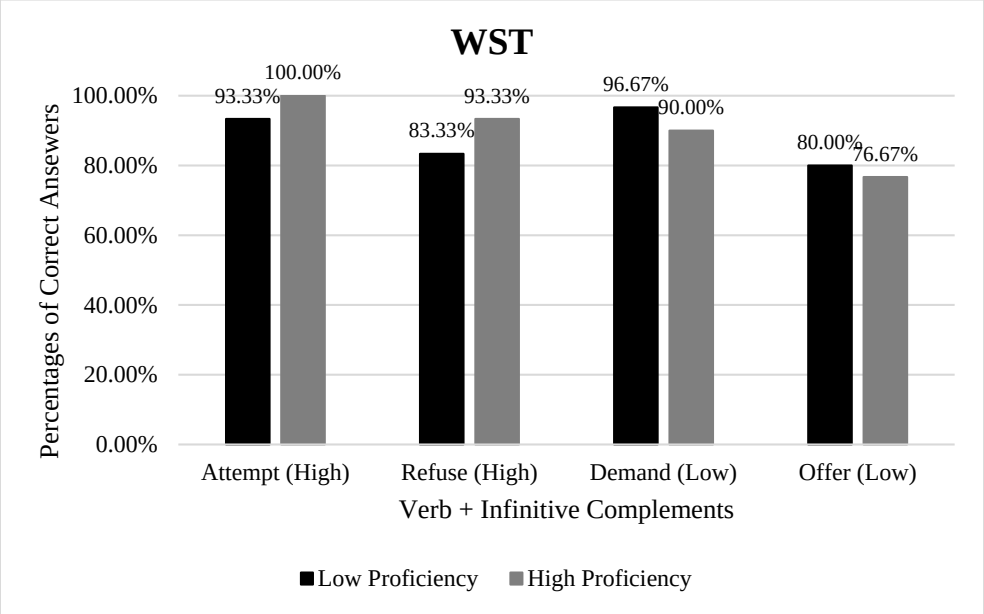

Figure 4.3: Results on the verbs followed immediately by infinitive complements in WST obtained from the low and the high proficiency groups

As illustrated in Table 4.3 and Figure 4.3, the percentages of correct answers on the target verbs followed immediately by infinitive complements in WST obtained from the low proficiency group did not align with the frequency of the target verbs occurring in the infinitive complement construction in terms of their trends. For example, only 83.33% of the low proficiency group (25 participants) could answer the

verb 'refuse', which was categorized as the verb with the high frequency correctly, but around 96.67% of the same group (29 participants) could answer the verb 'demand', which was categorized as the verb with the low frequency correctly. On the other hand, the data appeared to be opposite for the high proficiency group. The percentages of correct answers on the target verbs from the high proficiency group were relatively in the same direction as the frequency of the target verbs occurring in the target construction. It could be obviously seen that the verbs with the high frequency were answered more correctly than those with the low frequency.

Table 4.4: Results on the verbs followed immediately by gerund complements in WST obtained from the low and the high proficiency groups

WST (Task 1)						
Verb + Gerund Complements	Raw Corpus Frequency (BNC)		Low Proficiency		High Proficiency	
	Total	%	Total	%	Total	%
Enjoy (High)	22/200	11%	17	56.67%	30	100%
Involve (High)	19/200	9.50%	14	46.67%	29	96.67%
Recommend (Low)	7/200	3.50%	4	13.33%	17	56.67%
Postpone (Low)	6/200	3%	9	30%	22	73.33%

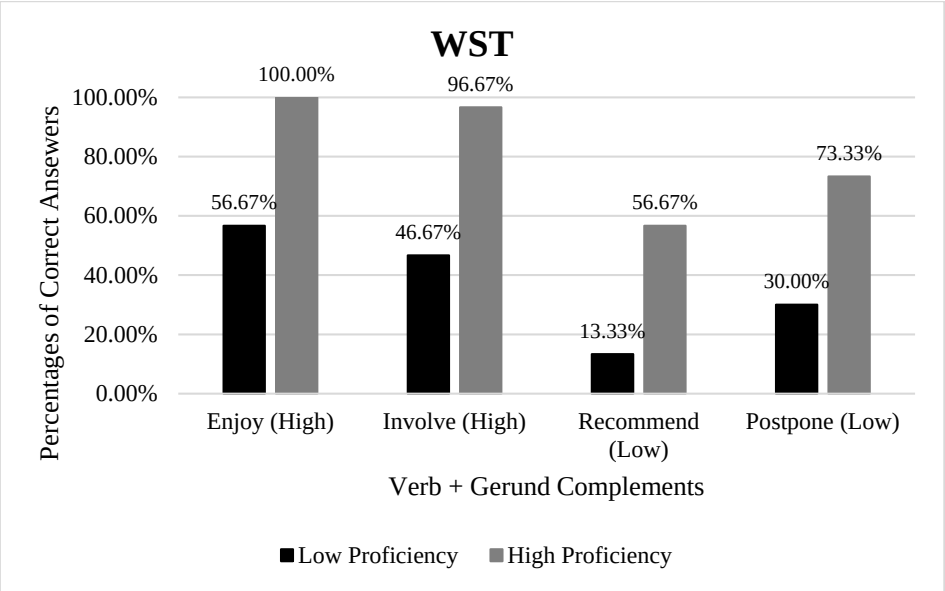

Figure 4.4: Results on the verbs followed immediately by gerund complements in WST obtained from the low and the high proficiency groups

As shown in Table 4.4 and Figure 4.4, the percentages of correct answers on the target verbs followed immediately by gerund complements in WST obtained from the low and the high proficiency groups seemed to overall coordinate with the frequency of the target verbs occurring in the infinitive complement construction in terms of their trends. Nevertheless, despite the fact that the verb 'postpone' was classified as the verb with a lower frequency than that of the verb 'recommend', it was answered more correctly than the verb 'recommend' by both groups of the participants. The percentages of correct answers on the verb 'postpone' from the low and the high proficiency groups were 30% (9 participants) and 73.33% (22 participants), respectively. Conversely, the percentages of correct answers on the verb 'recommend' from the low and the high proficiency groups were 13.33% (4 participants) and 56.67% (17 participants), respectively. Still, the inconsistency of the trends could be noticed only between the two verbs, which were both classified as the verbs with the low frequency.

Table 4.5: Results on the verbs followed immediately by infinitive complements in GJT obtained from the low and the high proficiency groups

GJT (Task 2)						
Verb + Complements	Raw Corpus Frequency (BNC)		Low Proficiency		High Proficiency	
	Total	%	Total	%	Total	%
Appear (High)	66/200	33%	26	86.67%	29	96.67%
Decide (High)	64/200	32%	27	90%	29	96.67%
Apply (Low)	5/200	2.50%	28	93.33%	29	96.67%
Hurry (Low)	4/200	2%	24	80%	18	60%

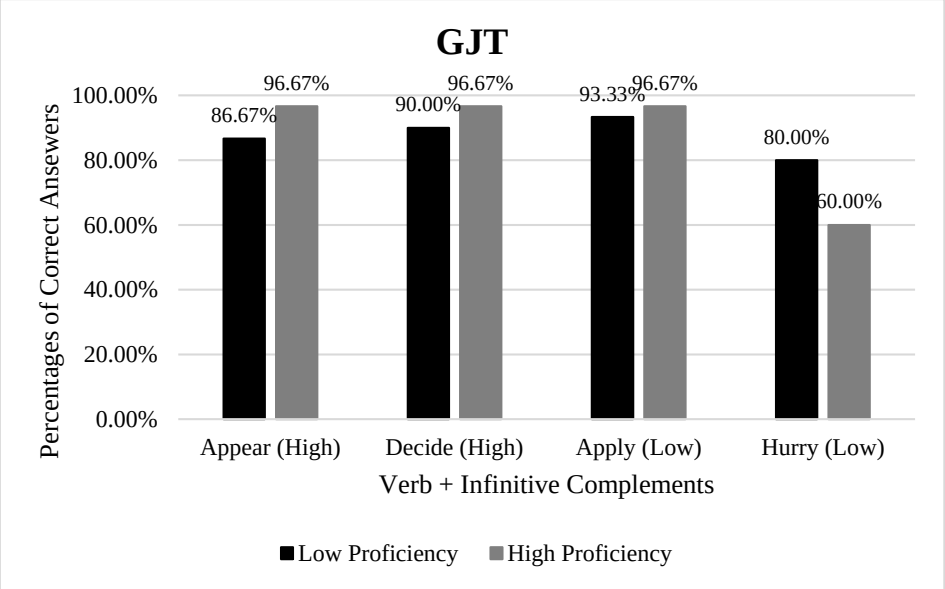

Figure 4.5: Results on the verbs followed immediately by infinitive complements in GJT obtained from the low and the high proficiency groups

As demonstrated in Table 4.5 and Figure 4.5, the percentages of correct answers on the target verbs followed immediately by infinitive complements in GJT collected from both groups of all participants were not in the same direction as the frequency of the target verbs occurring in the infinitive complement construction. For example, only 86.67% of the low proficiency group (26 participants) could answer the verb 'appear' which was considered as the verb with the high frequency correctly. In

contrast, approximately 93.33% of the low proficiency group (28 participants) could answer the verb 'apply' correctly, despite the fact it was considered as the verb with the low frequency. In addition, these two verbs were answered correctly and equally by 96.67% of the high proficiency group (29 participants).

Table 4.6: Results on the verbs followed immediately by gerund complements in GJT obtained from the low and the high proficiency groups

GJT (Task 2)						
Verb + Gerund Complements	Raw Corpus Frequency (BNC)		Low Proficiency		High Proficiency	
	Total	%	Total	%	Total	%
Finish (High)	16/200	8%	18	60%	30	100%
Dislike (High)	15/200	7.50%	17	56.67%	28	93.33%
Suggest (Low)	4/200	2%	4	13.33%	12	40%
Report (Low)	2/200	1%	18	60%	28	93.33%

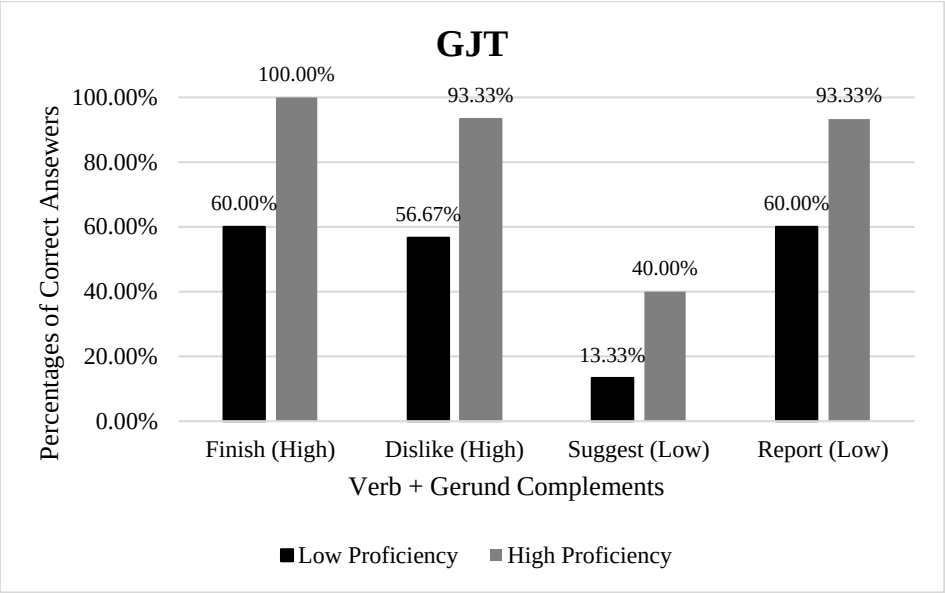

Figure 4.6: Results on the verbs followed immediately by gerund complements in GJT obtained from the low and the high proficiency groups

As represented in Table 4.6 and Figure 4.6, the percentages of correct answers on the target verbs followed immediately by gerund complements in GJT elicited from both the low and the high proficiency groups did not parallel with the frequency of the target verbs occurring in the gerund complement construction in terms of their trends. For example, despite being identified as the verb with the high frequency and the verb with the low frequency, respectively, the verb 'finish' and the verb 'report' were answered correctly and equally by 60% of the low proficiency groups (18 participants). Similarly, the verb 'dislike' which was identified as the verb with the high frequency was also answered correctly and equally as same as the verb 'report' by 93.33% of the high proficiency group (28 participants).

Constructional schemas are generally referred as abstract representations of complex constructions (Dabrowska, 2004). Moreover, the constructional schemas themselves can be represented in various levels of abstraction, namely, high-level and low-level constructional schemas (Dabrowska, 2004; Langacker, 2008). The high-level constructional schemas represent the abstract representations of general patterns of

complex constructions, which can be equivalently considered as general rules. On the other hand, the low-level constructional schemas represent a lesser degree of abstractness. They are more lexically specific or more characterized over specific lexical items rather than the abstract representations of general patterns (Dabrowska, 2004; Langacker, 2008). Furthermore, these internal patterns are also represented in the same format as their instantiations or actual expressions of the language use (Dabrowska, 2004). Therefore, the general patterns or the high-level constructional schemas of the infinitive complement construction and the gerund complement construction can probably be represented as [VERB + TO. INFINITIVE] and [VERB + GERUND], respectively (Dabrowska, 2004). Conversely, the low-level constructional schema of the infinitive complement construction and the gerund complement construction can possibly be represented as [ATTEMPT + TO. INFINITIVE] or [APPEAR + TO. INFINITIVE] and [ENJOY + GERUND] or [FINISH + GERUND], respectively, depending on the entrenchment from the actual language use (Dabrowska, 2004; Langacker, 2008). In addition, there seems to be a relationship among instantiations or actual expressions of the language use, high-level constructional schemas and low-level constructional schemas (Dabrowska, 2004; Langacker, 2008).

Based on the usage-based theory, linguistic knowledge is believed to be driven out of language use (Bybee & Beckner, 2009; Croft & Cruse, 2004). Frequent usage of particular linguistic elements can also lead to the formation of strong abstract representations in mind (Bybee, 2010; Bybee & Thompson, 1997). After being established, the abstract representations would function as template for new expressions (Langacker, 2008). Hence, the second research hypothesis aims to explore the relationship between the actual expressions of language use and the low-level constructional schemas, specifically in the aspect of frequency. To put it simply, it can be said that the second hypothesis intentionally investigated the effect of the frequency of verbs occurring in the target constructions (i.e. the actual frequency of

occurrence of the target verbs with the infinitive and the gerund complement constructions counted from the corpus BNC) on the entrenchment of the learners' low-level constructional schemas (i.e. the abstract representations which are lexically specific) by looking at the learners' production. It can possibly be assumed that the verbs with the high frequency of occurrence in the target constructions may be answered more correctly than those with the low frequency of occurrence because the more frequent the learners experience the language, the stronger their abstract representations will be formed and it will finally reflect on their production. It is also anticipated to be vice versa for the verbs with the low frequency of occurrence.

The discussions of the second hypothesis were separated into two parts, those for the low proficiency group and those for the high proficiency group, respectively.

As far as the low proficiency group is concerned, the percentages of correct answers on the target verbs followed by infinitive complements in both WST and GJT (see Figures 4.3 and 4.5) did not parallel with the frequency of the target verbs occurring in the infinitive complement construction in terms of their trends. That is, some of the target verbs with the low frequency were scored equally as those with the high frequency and some of those with the low frequency were scored more correctly than some of those with the high frequency. Also, the percentages of correct answers on the target verbs followed by gerund complements in GJT (see Figure 4.6) did not coordinate with the frequency of the target verbs occurring in the gerund complement construction in terms of their trends. On the other hand, the percentages of correct answers on the target verbs followed by gerund complements in WST (see Figure 4.4) appeared to align with the frequency of the target verbs occurring in the gerund complement construction in terms of their trends. That is, the verbs considered having the high frequency were answered more correctly than those considered having the low frequency. In conclusion, the parallel of the trends between the correct answers of the target verbs and the frequency of the target verbs occurring in the target complement construction of the low proficiency group could only be seen from the results on the verbs followed by gerund complements in WST (see Figure 4.4).

Nevertheless, what is worth observing is that, overall, each target verb followed by infinitive complements was answered correctly by over 80%, whereas each target verb followed by gerund complements was answered less correctly than those followed by infinitive complements. From the two tasks, it was found that the low proficiency group tended to use or select the infinitive complements even in the grammatical contexts where the gerund complements were required, leading to the very high percentages of correct answers on the infinitive complements and the very low percentages of correct answers on the gerund complements. To put it simply, the low proficiency group mostly answered the target verbs requiring the infinitive complements accurately with the infinitive complements but they tended to answer the target verbs requiring the gerund complements with mostly the infinitive complements. This linguistic phenomenon could probably be explained by a strong influence of the high-level constructional schema of the infinitive complement construction in the learners' mind. Under the concept of type frequency, the infinitive complements are considered as the high type frequency construction, whereas the gerund complements are considered as the low type frequency construction (Almulla, 2015; Schwartz & Causarano, 2007) (see Section 2.1.4). The high type frequency helps ensure that the particular construction will be used frequently, eventually leading to the strengthening of its corresponding high-level constructional schema as well as the extending of the construction in future language use with new lexical items (Bybee & Thompson, 1997) (see Section 2.1.3). The results from the low proficiency group confirmed the first research hypothesis that Thai learners would acquire the infinitive complements before the gerund complements. In addition, the results revealed that the low proficiency group was still probably influenced by the high-level constructional schema, but not by the low-level constructional schemas yet.

Regarding the high proficiency group, the trends of correct answers of the target verbs in WST, covering both the infinitive and the gerund complements, aligned with the trends of frequency of the target verbs occurring in the target complement constructions (see Figures 4.3 and 4.4). In other words, the verbs

considered having the high frequency were answered more correctly than those considered having the low frequency. The results showed that the high proficiency group probably obtained both levels of the constructional schemas, the high-level and the low-level constructional schemas. Conversely, the trends of correct answers of the target verbs in GJT, covering both the infinitive and the gerund complements, deviated from the trends of frequency of the target verbs occurring in the target complement constructions (see Figures 4.5 and 4.6). To put it simply, some of the target verbs with the low frequency were scored equally as those with the high frequency and some of those with the low frequency were scored more correctly than some of those with the high frequency. In summary, for the high proficiency group, the results from WST represented the parallel of the trends, whereas the results from GJT illustrated the deviation of the trends. The deviation of the trends could possibly be explained by the following reasons. As the frequency of the target verbs occurring in the target complement constructions for this study was counted from the first 200 random concordance lines from BNC (Lancaster), the frequency of the verbs, used to categorize the verbs into verbs with the high frequency and verbs with the low frequency, may not be distinctive from one another. For example, for the gerund complements in GJT, while the verbs 'finish' and 'dislike' with the frequency of occurrence 16 out of 200 and 15 out of 200, respectively, were considered as the verbs with the high frequency for this study, the verbs 'suggest' and 'report' with the frequency of occurrence 4 out of 200 and 2 out of 200, respectively, were considered as the verbs with the low frequency (see Section 3.3.2).

By looking at the overall picture of the results from the two groups, it could possibly be concluded that the frequency of the verbs occurring in the target complement constructions probably contributed to the entrenchment of the learners' low-level constructional schemas and their language use. As a consequence, the second hypothesis was partially confirmed. Last but not least, it can be noticed that the low-level constructional schema seemed to be established in the learners' mind after

the high-level constructional schema and the low-level constructional schema would be established when the learners' cognitive representation was in a higher level.

CHAPTER 5
CONCLUSIONS

This chapter is organized as follows: 5.1 implications of the study, 5.2 pedagogical implications, 5.3 limitations of the study and recommendations for future studies.

5.1 Summary of the Study

The current study aimed at examining the frequency effects on the acquisition of L2 English infinitive and gerund complements among L1 Thai learners, particularly, the acquisition order of the two linguistic features under the investigation as well as the relationship between the actual expressions of language use and their corresponding low-level constructional schemas. The two research hypotheses were formulated.

Hypothesis 1 stated that, based on the usage-based theory, Thai learners will acquire the infinitive complements before the gerund complements.

Hypothesis 2, stated that based on the usage-based theory, the frequency of verbs occurring in the target complement constructions will contribute to the entrenchment of the Thai learners' low level constructional schemas and their language use.

To fulfill the study, all of the participants were required to complete WST and GJT, respectively. The first findings showed that most of the low and the high proficiency groups were more accurate in using the infinitive complements rather than the gerund complements. Thus, it could be assumed that L1 Thai learners acquired the infinitive complements before the gerund complements. It was claimed that the learners acquired the infinitive complements first because they were of the high type frequency construction. On the other hand, the learners acquired the gerund complements later because they were of the low type frequency construction. Also, it

was mentioned that the high type frequency construction was easier for L2 English learners to acquire because learners were exposed more to this construction type. Consequently, the first hypothesis was confirmed. Next, the second findings revealed that the trends of correct answers of the target verbs in WST and GJT elicited from the high proficiency group and the trends of frequency of the target verbs occurring in the target complement constructions counted from the BNC appeared to parallel in some parts. The trends of correct answers of the target verbs in WST, covering both the infinitive and the gerund complements, aligned with the trends of frequency of the target verbs occurring in the target complement constructions. Hence, it could possibly be concluded that the frequency of the verbs occurring in the target complement constructions probably contributed to the entrenchment of the learner's low-level constructional schemas. As a result, the second hypothesis was partially confirmed.

5.2 Implications of the Study

5.2.1 Pedagogical Implications

As this study provides mainly the findings on the acquisition of English infinitive and gerund complements, it may allow English language teachers to design and develop teaching materials and methodology for these two language features. Perceptive and productive (including oral and written) exercises concerning the actual usage of the infinitive and the gerund complements should be designed and assigned to the learners. To put it simply, the perceptive tasks such as reading texts, news passages, and audio conversations, which are full of the targeted linguistic features should be given to the learners first and after they have been familiarized with the target linguistic features, the production tasks such as writing assignments, group presentations and role plays, which require the usage of the linguistic features, should later be introduced to them. With respect to the usage-based theory, it is possible that the more frequently or repeatedly the learners experience the target language structures, the stronger the corresponding abstract representations in their mind become and the easier the activation of those language structures for their future use will be.

5.2.2 Implications on SLA

Based on the current study, it is noted that the concept of frequency plays a vital role in the SLA context, particularly, the acquisition of English infinitive and gerund complements among L1 Thai learners. It also involves with the instantiations or the actual expressions of language use, the high-level constructional schemas and the low-level constructional schemas, respectively. To put it simply, the concept of frequency together with the instantiations of language use are very necessary for the formation of the high-level constructional schemas and the low-level constructional schemas. However, there seems to be a formation order of the two constructional schema levels. That is, the high-level constructional schemas will possibly be formed or established in the learners' mind before the low-level constructional schemas. Furthermore, the low-level constructional schemas could be formed when the learners are in a higher proficiency level.

5.3 Limitations of the Study and Recommendations for Future Studies

The following limitations and recommendations can probably be developed and implemented in future studies.

1. The two tasks used for the data collection in this study were WST and GJT. Since they were controlled elicitation tasks, it is suggested that future studies employ a wider range of task types, including spontaneous and natural production tasks, so that the results show a clearer picture of the learners' behavior.

2. In order to see the acquisition order more clearly, it is recommended that future studies include all kinds of verbs with verbal complements, namely, verbs followed immediately by infinitive complements (e.g. 'attempt' and 'refuse'), verbs followed immediately by gerund complements (e.g. 'enjoy' and 'finish') and verbs followed immediately by both infinitive and gerund complements (e.g. 'cease' and 'intend').

3. As discussed in Section 3.3.2, since the frequency of the verbs occurring in the target complement construction for this study was manually counted from the first 200 random concordance lines from BNC, the frequency of the verbs, used to classify the verbs into the verbs with the high frequency category and the verbs with the low frequency category, may not be clearly distinctive from one another, leading to the inconclusive results. Consequently, it is recommended that future studies apply a wider scope of corpus frequency, for example 500 – 1,000 random concordance line, so that the results will possibly be more generalized. In addition to the use of BNC, American corpora, such as COCA or some corpora of other Englishes should be incorporated in future studies.

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APPENDIX

APPENDIX A

CU-TEP Score Ranges and their Corresponding Levels

CU-TEP Score Range	Corresponding Level
1 – 7	Beginner
8 – 17	Middle Beginner
18 – 32	Upper Beginner
33 – 44	Low Intermediate
45 – 56	Middle Intermediate
57 – 68	Intermediate
69 -79	Low Advanced
80 – 91	Middle Advanced
92 – 106	Advanced
107 – 120	Upper Advanced

Note: The 2 ranges of CU-TEP score and their corresponding levels highlighted with the grey color are the target levels of the participants in this study.

APPENDIX B

Task 1: Word Selection Task (WST)

Name _____ID _____CU-TEP Score _____

Directions: Circle the correct answer in the parentheses.

For example: Bad news (doesn't/ don't) make people happy.

1. I really enjoyed (to play/ playing) tennis with my father.

2. It was really (embarrassing/ embarrassed) when you have to ask other people for money.

3. The trousers you bought me (doesn't/ don't) fit me at all.

4. He has spent (the whole money/ all the money) you gave him.

5. Three prisoners attempted (to escape/ escaping) from the jail yesterday.

6. She did not tell (nobody/ anybody) about her secrets.

7. Since I have been working hard (all the day/ all day), I feel exhausted.

8. That was a really (terrifying/ terrified) experience.

9. Running your own business involved (to work/ working) long hours.

10. The police (want/wants) to interview the two men about the robbery last week.

11. He looked out the window, but he could not see (no-one/ anyone).

12. When she was on holiday, (all her luggage/ her whole luggage) was stolen.

13. Her children refused (to go/ going) to school.

14. The new project sounds (exciting/ excited).

15. I will try and answer (no/ any) questions you ask.

16. Fortunately, the news (wasn't/ weren't) as bad as we expected.

17. The doctor recommended (to have/ having) body checkup every six months.

18. He works (every day/ all days) except Sunday.

19. Sixty thousand dollars (was/ were) stolen in the robbery.

20. We don't know (nothing/ anything) about politics.

21. I demanded (to see/ seeing) the hotel manager.

22. She is one of the most (boring/bored) people I have ever met.

23. Mathematics (was/were) my best subject at school.

24. Are you (interested/ interesting) in volleyball?

25. They postponed (to study/ studying) aboard because of their financial problems.

26. I have been trying to call him, but (every time/ all the time) I phone there's no answer.

27. That car accident looked really bad, but fortunately (nobody/anybody) was badly injured.

28. Gymnastics (is/are) my daughter's favorite sport.

29. My brother offered (to take/ taking) us to the airport.

30. I was very (disappointing/ disappointed) with the film.

Note: The sentences highlighted with the grey color are the target test items used to elicit data from the participants.

APPENDIX C

Task 2: Grammaticality Judgement Test (GJT)

Name _____ID _____ CU-TEP Score _____

Directions: Identify the underlined part of each sentence. If it is correct, put a tick mark (✓) in the parentheses. If it is wrong put a cross mark (x) in the parentheses and rewrite the incorrect part in the space provided.

For example:

She drinks a lot of coffee every morning. (✓)_____

She doesn't drinks coffee very often. (x) *drink*

1. I finished to write the report just minutes before it was due. ( )_____
2. Four years are a long time to be without a job. ( )_____
3. There is no need to get annoying just because I'm a few minutes late. ( )_____
4. He always puts a lot of sugar in his food. ( )_____
5. Despite her baby face, she appeared to be in her late forties. ( )_____
6. I have plenty of time, so I can take it very slow. ( )_____
7. Rose was wearing a new pair of jean. ( )_____
8. The lecture was so bored that I almost fall asleep. ( )_____
9. I really disliked being away from my family. ( )_____
10. You will need much money if you want to travel around the world. ( )_____
11. She got promoted because she works very hardly. ( )_____
12. Can I borrow your scissors? Mine aren't sharp enough. ( )_____
13. We decided going to Canada for our holidays. ( )_____
14. The kitchen hadn't been clean for ages. It was so disgusting. ( )_____
15. There wasn't much traffic this morning. ( )_____

16. You speak English very good. ( )_____

17. My teacher suggested to check the vocabulary meanings with a dictionary. ( )

18. Since I got up lately this morning, I missed the morning class. ( )_____

19. Five days isn't enough for a good holiday. ( )_____

20. I have nothing to do so I feel bored. ( )_____

21. He applied to join the army. ( )_____

22. I don't know many people in this town. ( )_____

23. Don't run so fast! I can't keep up with you. ( )_____

24. I really liked Will and Kate. They are very nice persons. ( )_____

25. A man reported seeing the suspect leave the building around noon. ( )_____

26. She works so hard that she always feels tiring. ( )_____

27. It will cost a lot to repair this car. ( )_____

28. I didn't sleep well last night. ( )_____

29. He hurried opening the door. ( )_____

30. I don't want to rush you, but we don't have much time. ( )_____

Note: The sentences highlighted with the grey color are the target test items used to elicit data from the participants.

APPENDIX D

IOC Results of Word Selection Task (Task 1)

The Index of Item-Objective Congruence (IOC)

Description: This index of congruence is to validate the quality of this instrument. Please indicate your agreement according to the following scale by placing a tick mark (✓) in the box.

Scoring + 1 = Certain that the test is congruent with the objectives.

Scoring 0 = Uncertain that the test is congruent with the objectives.

Scoring – 1 = Certain that the test is NOT congruent with the objectives.

No.	**Questions**	**Expert's opinion**			**IOC Result**	**Suggestions**
		Expert 1	**Expert 2**	**Expert 3**		
	Part 1: The participants are required to read each sentence and circle the correct answer in the parentheses (totally 8 items excluding distractors).					
	I really enjoyed (to play/ playing) tennis with my father.	+ 1	+ 1	+ 1	1	
	Three prisoners attempted (to escape/ escaping) from the jail yesterday.	+ 1	+ 1	+ 1	1	

	Running your own business involved (to work/ working) long hours.	+ 1	+ 1	+ 1	1	
	Her children refused (to go/ going) to school.	+ 1	+ 1	+ 1	1	
	The doctor recommended (to have/ having) body checkup every six months.	+ 1	0	+ 1	0.67	Recommend + someone + to. infinitive. It's rare with -ing.
	I demanded (to see/ seeing) the hotel manager.	+ 1	+ 1	+ 1	1	
	They postponed (to study/ studying) aboard because of their financial problems.	+ 1	+ 1	+ 1	1	
	My brother offered (to take/ taking) us to the airport.	+ 1	+ 1	0	0.67	Offer can take either to. infinitive or -ing verb.
Average Result					0.9175	

APPENDIX E

IOC Results of Grammaticality Judgement Test (Task 2)

The Index of Item-Objective Congruence (IOC)

Description: This index of congruence is to validate the quality of this instrument. Please indicate your agreement according to the following scale by placing a tick mark (✓) in the box.

Scoring + 1 = Certain that the test is congruent with the objectives.

Scoring 0 = Uncertain that the test is congruent with the objectives.

Scoring – 1 = Certain that the test is NOT congruent with the objectives.

No.	Questions	Expert's opinion			IOC Result	Suggestions
		Expert 1	Expert 2	Expert 3		
	Part 2: The participants are required to read each sentence and identify the underlined part of each sentence. If it is correct, put a tick mark (✓) in the parentheses. If it is wrong put a cross mark (x) in the parentheses and rewrite the incorrect part in the space provided (totally 8 items excluding distractors).					

	I finished <u>to write</u> the report just minutes before it was due.	+ 1	+ 1	+ 1	1	
	Despite her baby face, she appeared <u>to be</u> in her late forties.	+ 1	+ 1	+ 1	1	
	I really disliked <u>being</u> away from my family.	+ 1	+ 1	+ 1	1	
	We decided <u>going</u> to Canada for our holidays.	+ 1	+ 1	+ 1	1	
	My teacher suggested <u>to check</u> the vocabulary meanings with a dictionary.	+ 1	0	+ 1	0.67	Suggest + someone + to. infinitive. It's rare with -ing.
	He applied <u>to join</u> the army.	+ 1	+ 1	+ 1	1	
	A man reported <u>seeing</u> the suspect leave the building around noon.	+ 1	+ 1	+ 1	1	
	He hurried <u>opening</u> the door.	+ 1	+ 1	0	0.67	Hurry is v.i., which does not need any form of complements
Average Result					0.9175	

APPENDIX F

Information Regarding the Low Proficiency Group of Participants

Students with CU-TEP score in the middle intermediate level (45 – 56 score)

No.	Faculty	Academic Year	Gender	CU-TEP Score
1	Faculty of Allied Health Sciences	Freshman	Female	50
2	Faculty of Communication Arts	Freshman	Female	55
3	Faculty of Allied Health Sciences	Freshman	Female	49
4	Faculty of Engineering	Freshman	Male	53
5	Faculty of Engineering	Freshman	Male	55
6	Faculty of Engineering	Freshman	Female	47
7	Faculty of Veterinary Science	Freshman	Female	53
8	Faculty of Veterinary Science	Freshman	Female	47
9	Faculty of Allied Health Sciences	Freshman	Female	52
10	Faculty of Allied Health Sciences	Freshman	Female	54
11	Faculty of Psychology	Freshman	Female	48
12	Faculty of Allied Health Sciences	Freshman	Female	51
13	Faculty of Science	Freshman	Female	49
14	Faculty of Science	Freshman	Male	49

No.	Faculty	Academic Year	Gender	CU-TEP Score
15	Faculty of Engineering	Freshman	Female	52
16	Faculty of Allied Health Sciences	Freshman	Female	50
17	Faculty of Pharmaceutical Sciences	Freshman	Female	50
18	Faculty of Pharmaceutical Sciences	Freshman	Female	56
19	Faculty of Engineering	Freshman	Female	55
20	Faculty of Commerce and Accountancy	Freshman	Male	51
21	Faculty of Science	Freshman	Female	53
22	Faculty of education	Freshman	Female	51
23	Faculty of Sports Science	Freshman	Female	47
24	Faculty of Dentistry	Freshman	Female	49
25	Faculty of Veterinary Science	Freshman	Male	50
26	Faculty of Science	Freshman	Female	50
27	Faculty of Commerce and Accountancy	Freshman	Female	55
28	Faculty of Science	Freshman	Female	46
29	Faculty of Science	Freshman	Female	48
30	Faculty of Architecture	Freshman	Male	45

APPENDIX G

Information Regarding the High Proficiency Group of Participants

Students with CU-TEP score in the middle advanced level (80 – 91 score)

No.	Faculty	Academic Year	Gender	CU-TEP Score
1	Faculty of Engineering	Freshman	Male	90
2	Faculty of Engineering	Freshman	Male	81
3	Faculty of Veterinary Science	Freshman	Female	81
4	Faculty of Psychology	Freshman	Female	85
5	Faculty of Psychology	Freshman	Female	82
6	Faculty of Education	Freshman	Male	82
7	Faculty of Engineering	Freshman	Female	81
8	Faculty of Communication Arts	Freshman	Female	89
9	Faculty of Communication Arts	Freshman	Female	80
10	Faculty of Communication Arts	Freshman	Female	86
11	Faculty of Education	Freshman	Female	86
12	Faculty of Commerce and Accountancy	Freshman	Female	91
13	Faculty of Political Science	Freshman	Female	83
14	Faculty of Education	Freshman	Female	84

No.	Faculty	Academic Year	Gender	CU-TEP Score
15	Faculty of Arts	Freshman	Female	84
16	Faculty of Arts	Freshman	Female	85
17	Faculty of Arts	Freshman	Female	84
18	Faculty of Political Science	Freshman	Female	80
19	Faculty of Economics	Freshman	Female	86
20	Faculty of Commerce and Accountancy	Freshman	Male	81
21	Faculty of Arts	Freshman	Female	80
22	Faculty of Commerce and Accountancy	Freshman	Male	90
23	Faculty of Commerce and Accountancy	Freshman	Female	91
24	Faculty of Arts	Freshman	Female	80
25	Faculty of Arts	Freshman	Female	81
26	Faculty of Arts	Freshman	Female	82
27	Faculty of Arts	Freshman	Male	86
28	Faculty of Veterinary Science	Freshman	Female	80
29	Faculty of Arts	Freshman	Female	84
30	Faculty of Arts	Freshman	Female	85

VITA

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