

AN INVESTIGATION OF 11<sup>th</sup>-GRADE THAI STUDENTS'  
DECODING STRATEGIES AT THE WORD LEVEL IN ENGLISH READING



SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR  
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AN INVESTIGATION OF 11<sup>th</sup>-GRADE THAI STUDENTS'  
DECODING STRATEGIES AT THE WORD LEVEL IN ENGLISH READING



A MASTER'S PROJECT  
BY  
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Submitted in Partial Fulfillment of the Requirements for  
the Master of Arts Degree in English at Srinakharinwirot University

June 2012

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This study aimed to investigate the strategies that 11<sup>th</sup>-grade Thai students used to decode English words. The problems that these students experienced decoding English words were also examined. The participants in this study were 30 students studying in Grade 11 at Bangnampriawiththaya School, the Secondary Educational Service Area Office 6. The data were collected during the second semester of the 2009 academic year. The participants were asked to complete a questionnaire about the use of their decoding strategies at the word level. After completing the questionnaire, they took a decoding test about the problems they experienced attempting to decode English words. The findings of this study revealed that the participants had a variety of decoding strategies for decoding English words, and all of the decoding strategies were used with a high degree of frequency. It was also found that nearly half of the participants had problems with decoding at the word level, and they had problems with both single-syllable and polysyllabic words. In terms of single-syllable words, the participants had problems with the single consonants <u> and <y>, consonant clusters, consonant digraphs, vowel digraphs, R-controlled vowels, the vowel <y>, and vowels ending with <e>. With regard to polysyllable words, they had problems with words that end with inflectional endings; words that consisted of prefixes, roots, and suffixes; and compound words. These problems may result from a lack of various types of knowledge: (a) phonics, (b) English word structure, (c) common patterns of English syllables, and (d) English word segmentation. In conclusion, the findings of the study indicate that while 11<sup>th</sup>-grade

students ought not to have difficulty decoding English words, they still struggle with these problems.



กลวิธีการถอดคำในการอ่านออกเสียงภาษาอังกฤษของนักเรียนไทย ชั้นมัธยมศึกษาปีที่ 5



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สารนิพนธ์ฉบับนี้มีวัตถุประสงค์เพื่อศึกษาวิธีการถอดคำในการอ่านออกเสียงภาษาอังกฤษ  
และปัญหาการถอดคำในการอ่านออกเสียงภาษาอังกฤษของนักเรียนไทย ชั้นมัธยมศึกษาปีที่ 5 กลุ่ม  
ตัวอย่างที่เข้าร่วมในงานวิจัยนี้ประกอบด้วยนักเรียนไทย ชั้นมัธยมศึกษาปีที่ 5 โรงเรียนบางน้ำเปรี้ยว  
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การศึกษา 2552 กลุ่มตัวอย่างทำแบบสอบถามเกี่ยวกับการใช้กลวิธีการถอดคำในการอ่านออกเสียง  
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ผลการวิจัยพบว่ากลุ่มตัวอย่างใช้กลวิธีถอดคำในการอ่านออกเสียงภาษาอังกฤษหลากหลาย  
และทุกๆ กลวิธีมีความถี่ในการใช้ในระดับสูง ผลการวิจัยยังพบอีกว่าเกือบครึ่งหนึ่งของกลุ่มตัวอย่างมี  
ปัญหาการถอดคำในการอ่านออกเสียงภาษาอังกฤษทั้งคำพยางค์เดียวและคำหลายพยางค์ ในการถอดคำ  
พยางค์เดียว กลุ่มตัวอย่างมีปัญหาในเรื่องพยัญชนะเดียว 2 ตัวคือ <u> และ <y> พยัญชนะควบกล้ำ  
พยัญชนะทวิอักษร สระทวิอักษร สระที่มีพยัญชนะ <r> รวมอยู่ด้วย <y> ซึ่งเป็นสระ และสระที่ลงท้าย  
ด้วย <e> สำหรับการถอดคำหลายพยางค์ กลุ่มตัวอย่างมีปัญหาเกี่ยวกับคำที่มีการเติมส่วนท้ายเพื่อเปลี่ยน  
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ความรู้เรื่องความสัมพันธ์ระหว่างเสียงและตัวอักษร โครงสร้างของคำ รูปแบบพยางค์ภาษาอังกฤษ และ  
การแบ่งพยางค์ในคำหลายพยางค์ ผลการวิจัยแสดงให้เห็นว่าแม้นักเรียนชั้นมัธยมศึกษาปีที่ 5 น่าจะไม่มี  
ปัญหาในการถอดคำในการอ่านออกเสียงภาษาอังกฤษ แต่จริงๆ แล้ว นักเรียนกลุ่มนี้ยังมีปัญหาในเรื่อง  
ดังกล่าวอยู่

The Master's Project Advisor, Chair of the Master's Program in English, and Oral Defense Committee have approved this Master's Project, "An Investigation of 11<sup>th</sup>-Grade Thai Students' Decoding Strategies at the Word Level in English Reading," by Charuni Noicharoen as partial fulfillment of the requirements for the Master of Arts Degree in English at Srinakharinwirot University.

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(Dr. Wanee Aujatid)

June...., 2012

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## **CHAPTER I**

### **Background of the Study**

#### **Introduction**

In Thailand, English is taught as the first foreign language. Thai students have to study this language from the elementary to the upper secondary levels. Moreover, the national curriculum emphasizes the integration of listening, speaking, reading, and writing in the language classroom (Ministry of Education, 2006). Therefore, Thai students are required to study all four skills to attain English language proficiency.

Among the four skills in English, reading plays an important role in daily life and is useful to students because they can acquire and gather knowledge by themselves through reading. According to Bos and Vaughn (2002), reading is a crucial skill for learning in content-based classes, which use English as a medium of instruction. Presently, English is primarily used in forms of media such as magazines, television, and the Internet. Students who are in the habit of reading can gain enormous knowledge from various multimedia because reading can be described as the best teacher (Gillet & Temple, 2000). To sum up, reading is essential to students' learning from one level to another.

However, even though reading skills are important, students still have a variety of problems with reading (Aebersold & Field, 1997; Bos & Vaughn, 2002; Gillet & Temple, 2000; Wei, 2005). These problems include an inadequate knowledge of vocabulary, a lack of understanding of grammatical structures, and limited background knowledge (Aebersold & Field, 1997; Dagostina & Carrifio, 1994; Intarasombat, 2002; Jesdapornpun (2001); Nuttall, 2000). Nonetheless, according to Dagostina and Carrifio (1994), Nuttall (2000), and Thanamaimas (2004), the big problem experienced by students is that of unknown words because when they are unable to decode unknown words they cannot also

identify what these unknown words are. As a result, they do not know the meaning of these unknown words, and they, finally, cannot understand the text that they are reading. In summary, an inability to decode unknown words leads to word problems and has a negative impact on the comprehension of the reader.

As several educators (Rubin, 1990; Searfoss & Readence, 1994; Walker, 2004) have pointed out, in order to comprehend an unknown word, decoding is very useful to children, especially in the early stages of learning to read words because as long as children are struggling with decoding, they cannot grasp the meaning of the message immediately. However, children will pay attention to give a text's meaning if decoding becomes automatic. Furthermore, Eldredge (2005) stated that decoding is a crucial strategy for reading. According to Eldredge, the more decoding skills that readers have, the easier it is for them to comprehend a text, and readers who have poor decoding abilities are less likely to comprehend the meaning of text than readers who have strong decoding abilities. As stated earlier, decoding is an important strategy for readers at all age levels, especially poor readers, because it helps them construct meaning when a reader faced with unknown or polysyllabic words. Therefore, the ability to decode has a direct effect on reading comprehension.

From her previous teaching experience, the researcher has found that many of her upper secondary students cannot recognize many words they encounter in their reading passages. Some upper secondary students cannot decode even common words such as *his*, *write*, *of*, *where*, *us*, *our*, and *baby*. They also cannot decode some of the words they should have known since in lower grades or words that upper secondary students should be able to decode, such as *students*, *hospital*, and *computer*. When people such as their teachers or friends speak or read to them using these words, some students know what words are spoken or read to them and, as a result, understand the meaning of these words.

However, if they see these words in a text, they cannot decode them without assistance. This inability to decode words, therefore, may affect the reading comprehension of upper secondary students reading without assistance, especially during tests which are required to move up a level, or with the various texts used in multimedia. If they cannot decode unknown words in these texts, they will not be able to identify or understand the meaning of these words; as a result, they cannot understand what the contents they are reading.

### **Purpose of the Study**

No published research could be found that specifically studied the decoding strategies of Thai students or the problems they experienced with decoding words. Therefore, the purpose of this study was to investigate the decoding strategies used by 11<sup>th</sup>-grade Thai students at a Thai public school to decode English words. In addition, this study aimed to examine the problems that these students encountered when decoding English words.

### **Research Questions**

This study aimed to answer the following questions:

1. What strategies do 11<sup>th</sup>-grade Thai students use to decode English words?
2. What problems do 11<sup>th</sup>-grade Thai students have with decoding English words?

### **Significance of the Study**

The findings obtained from this study provide information about the decoding strategies used by 11<sup>th</sup>-grade Thai students and the problems they experienced with decoding English words. This information could be useful to teachers because it allows them to be aware of common problems that students have with decoding English words. Furthermore, the findings could be used as a guideline for teachers to find suitable ways to help their students develop their decoding skills in order to improve their reading comprehension.

## **Methodology**

The participants in this study were 30 students in Grade 11 in Bangnampriaowithaya School, a high school in Bangnampriao District, Chachoengsao. The researcher developed two instruments to collect data: a questionnaire and a decoding test. The questionnaire was employed to investigate the decoding strategies that the participants used when reading English, while the decoding test was used to investigate the problems they had with decoding English words. The study was conducted in January 2010. The data obtained from the questionnaire and the decoding test was analyzed to answer Research Questions 1 and 2.

## **Scope of the Study**

This study was limited to 30 students in Grade 11 in Bangnampriaowithaya School, the Secondary Educational Service Area Office 6, who were selected as participants. The study focused only on the ability of the students to decode at the word level in English reading.

## **Organization of the Study**

Chapter I introduces the background and problems of the study. Chapter II presents review of the related literature and research studies pertaining to the subject of this Master's Project, and Chapter III details the methodology of this research. Chapter IV presents the results of the study, and Chapter V discusses these results and suggests recommendations for further studies.

## **CHAPTER II**

### **Review of the Related Literature**

The purpose of the study was to investigate what strategies Thai students used to decode English words and what problems the students had with decoding English words. The review of literature is divided into seven parts. First, reading process is described, followed by models of the reading process, the stages of learning to read words, definitions of decoding, decoding strategies, and common problems that students had with decoding English words. Finally, previous studies related to decoding strategies and decoding problems are addressed.

#### **The Reading Process**

Many educators (Aebersold & Field, 2000; Alderson, 2000; Anderson, 1999; Nuttall, 2000; Rubin, 1992) who specialize in reading have stated that the reading process refers to the interaction between the reader and the text. These educators also argued that when readers read a text, the reading process automatically occurs. A reader looks at the text, decodes what it means, thinks about how the words are related to each other, before considering what they are reading in terms of what it means to them, and how it relates to other things that they have read or already know. Moreover, readers also assess how useful or entertaining, or how useless and boring the text is in terms of their own opinion. Ryder and Graves (1994) also stated that several kinds of knowledge—letter-level knowledge, word-level knowledge, syntactic knowledge, sentence-level knowledge, and prior knowledge—are used to comprehend the text. Thus, reading is a complex process in which the reader interacts with the text in order to construct meaning and comprehend the text, and decoding is fundamental to this process.

## **Models of the Reading Process**

In order to clarify the role that decoding plays in the reading process, a model of the reading process is required. According to Alderson (2000), Carrell (1993), Harmer (2001), and Urquhart and Weir (1998), the interaction of the reader and the text can be described through three models: (a) the bottom-up model, (b) the top-up model or the whole-language model, and (c) the interactive model. Firstly, the bottom-up model begins with decoding the smallest linguistic units—phonemes, graphemes, and words—to the largest linguistic units, which include phrases and sentences. When the reader first engages the text, the first step is to discriminate each letter by sounding it out, matching the written symbols with their background knowledge of linguistics, then blending them together to form words and deriving meaning from them. Moreover, according to Aebersold and Field (1997) and Carrell (1993), the bottom-up model is the most similar to the way in which readers automatically decode linguistic units, from the smallest to the largest.

On the other hand, the top-down model requires readers to apply all their background knowledge, experience and schema to connect with a text and use it to comprehend any new information found in the text. Moreover, readers also try to see the overall purpose of the text and to understand the intentions of the author. In addition, according to Nuttal (2000), readers with different levels of background knowledge have different levels of reading skills. The intelligence and the experience of the readers also allow them to make predictions, recognize patterns in the text, as well as any assumptions or arguments put forward by the writer in order to anticipate the next step. In short, in the top-down model, readers bring prior knowledge, common sense, and experience to the text. However, Alderson (2000), Carrell (1993), Harmer (2001), and Urquhart & Weir (1998) pointed out that if readers do not have enough prior knowledge or are unfamiliar

with the texts, they have to use decoding skills to compensate for their lack of prior knowledge.

According to Alderson (2000), Carrell (1993), Harmer (2001), and Urquhart & Weir (1998), the interactive model is a combination of both the bottom-up and top-down processes. In order to construct meaning from a text, readers need to simultaneously use various sources of knowledge—semantic, syntactic, and graphophonemic information, such as letters, syllables, and words—in the reading processes. According to Nuttall (2000), the reading process begins in the mind of the readers with their assumption about the meaning of the text and readers also identify letters and words to confirm their assumption about the meaning of the text. Additionally, readers also employ background knowledge, their language proficiency, diverse cultural beliefs, motivation, and individual reading strategies to support their decoding strategies. In summary, a reader uses both the bottom-up and the top-down processes to comprehend the text in the interactive model.

To sum up, according to these models of the reading process, when readers read the text, they need to have several kinds of knowledge—letter-level knowledge, word-level knowledge, syntactic knowledge, sentence or whole text semantic knowledge, and prior knowledge. In all of these models, decoding is crucial, especially if the reader lacks background knowledge.

### **Stages of Learning to Read Words**

Readers face different challenges at different stages of the process of learning to read words. For this reason, it is important to understand the process of learning to read words and what typically happens as learners move from one stage of the process to the next.

According to Ehri (1995), readers go through three stages of development in the reading process, which are (a) the prealphabetic stage, (b) the alphabetic stage, and (c) the

word pattern stage, and as learners move from one stage to another and as their reading processes develop, they develop new skills. In the prealphabetic (logographic) stage, readers first read words in terms of an arbitrary visual aspect, before attempting to understand the meaning of the words. At this stage, readers connect words with the pictures of letters or elements of their environment, such as their parents, the parts of their body, and their toys. At this stage, readers still cannot understand the relationships between letters and sounds. In the alphabetic (letter-name) stage, readers understand the relationship between letters and their sounds. They can decode unfamiliar words and analyze words sound by sound. In the last stage, the word pattern stage, readers will use their knowledge of word patterns rather than single letters; that is, readers use more sophisticated print units to make associations between the print and sound.

In addition, Gillet and Temple (2000) discussed the stages of learning words, which to some extent are similar to Ehri's (1995). According to Gillet and Temple, the process of learning words can be divided into five stages: (a) emergent literacy, (b) beginning reading, (c) building fluency, (d) reading to learn and for pleasure, and (e) mature reading. In the stage of emergent literacy, children only know that reading is pleasure. In the second stage, children start to recognize individual words and develop a sight vocabulary. In the building fluency stage, children can automatically read many words and fluently read several long sentences. Next, in the reading to learn and for pleasure stage, children can read more fluently than in the building fluency stage and they also read outside of school. Finally, in the mature reading stage, children can use their own reading experience to compare many sources of information on a topic and identify the style of an author and the techniques that he or she has used.

In a similar vein, Browne (2007) divided the process of learning to read words into four stages: (a) introducing children to reading, (b) emergent readers, (c) beginning

readers, and (d) developing readers. At the introducing children to reading stage, books and reading are introduced to children. As emergent readers, children must know many things, such as the purposes and pleasure of print and reading; the organization of the book; how to use books by turning the pages, moving from the front to the back of the book, reading the pictures, looking at text, and recognizing logos, etc. At the beginning reader stage, children can associate a word in the text with how it is spoken. At this stage, children are also aware of contextual, grammatical, graphic, and phonic strategies to read unknown words. Finally, in the developing reader stage, children can read independently and are less dependent on adult support. Moreover, they do not need to hear the book read to them before they can read the text by themselves.

Thus, it can be concluded that there is a variety of stages of learning to read words. Some educators claimed that in learning to read words, readers use their knowledge of letter-sound correspondences when they face an unknown word. In contrast, some educators contended that finally readers can be independent readers who can read written texts by themselves, use their own background knowledge, or identify an author's style and techniques in order to evaluate the text.

### **Definitions of Decoding**

Decoding is a term that means different things to different people. Some definitions are extremely narrow, while others are quite broad. For example, decoding is simply defined by Wikipedia as reverse encoding, which is the process of transforming information from one format into another ("Decoding," 2009). Dale and Pearson (1978), on the other hand, stated that decoding is merely a breakdown of the letters and sounds used in phonics and is not concerned with meaning. Additionally, according to Burns, Roe, and Ross (1999), decoding is the process of recognizing words by sounding out each letter in order to put them together into words, and this type of decoding ability occurs

quickly and simultaneously. Some educators (Deboer & Dallmann, 1960; Kennedy, 1981; Rubin, 1992) use the term word recognition instead of decoding to describe the ability to pronounce and understand the meaning of unknown words. Other similar definition of decoding accepted by various educational researchers (Bos & Vaughn, 2002; Eldredge, 2005) is that decoding is the ability to pronounce a printed word verbally or mentally. In summary, these educators define decoding in two ways: (a) sounding out printed words and understanding their meaning and (b) just sounding out the words, not concerning with the meaning. However, since the purpose of the present study was to investigate the strategies that the students use and the problems they experience when they decode English words, not the students' vocabulary knowledge, decoding is thus defined in this study, following Dale and Pearson (1978), as a process in which readers sound out the letters and blend them together in order to pronounce words, and it is not involved with word meaning.

### **Decoding Strategies**

Many educators (Bos & Vaughn, 2002; Burns, Roe, & Ross, 1999; Deboer & Dallmann, 1960; Eldredge, 2005; Rubin, 1992) have discussed decoding strategies, and seven decoding strategies have been established.

1. **Phonic Analysis:** This is a strategy in which readers decode a word by segmenting it into individual phonemes and then blending these phonemes together. For example, in decoding the word *bat*, readers segment it into /b/, /æ/, /t/ and then blend these phonemes into /bæt/. In performing a phonic analysis, readers need to have both phonological awareness and knowledge of letter–sound correspondences (Bos & Vaughn, 2002; Burns, Roe, & Ross, 1999; Deboer & Dallmann, 1960; Rubin, 1992).
2. **Onset-Rime:** This refers to using common spelling patterns such as *–ack* and *–ame* to decode an unknown word by blending. For example, readers will decode an unknown

word *back* by segmenting the word into the onset *b* and the rime *-ack* and then blend the onset and the rime to make the word *back* (Bos & Vaughn, 2002).

3. Structural Analysis: This is the segmenting of a longer, polysyllabic word into word parts—roots, prefixes, and suffixes—and inflectional endings. Compound words are also analyzed by segmenting word structure. Many educators (Bos & Vaughn, 2002; Burns, Roe, & Ross, 1999; Deboer & Dallmann, 1960; Rubin, 1992) contended that structural analysis can help readers break up longer words into pronounceable units. For example, the word *unhappy* can be segmented into two parts: *un* and *happy*. Therefore, the more knowledge that the readers have of word structure, the more easily they can decode words.

4. Syllabication: In syllabication, the reader uses common syllable types to decode polysyllabic words. According to Bos and Vaughn (2002), there are six common syllable types: (a) closed (CVC), (b) open (CV), (c) vowel-consonant-e (CVCe), (d) vowel team (CVVC), (e) R-controlled (CV+r), and (f) consonant-l (-C+le).

a. A closed syllable (CVC) is a word that ends with at least one consonant, and the vowel is short, such as *bed* and *lost*.

b. An open syllable (CV) is a word that ends with one long vowel such as *me* and *mo* in *moment*.

c. A vowel-consonant-e syllable (CVCe) is a word that ends with one vowel, one consonant, and a final <e>. The vowel is long and the final <e> is silent, such as *name* and *five*.

d. A vowel team syllable (CVVC) is a word with two adjacent vowels. The sound of vowel teams vary, for example, *rain* and *teen*.

e. An r-controlled syllable (CV+r) is a word in which the vowel is followed by <r>, and the vowel pronunciation is affected by the /r/ such as in *car* and *fern*.

f. A consonant-le syllable (-C+le) is a word in which the final syllable ends with a consonant plus <l> and the silent <e> such as *-dle* in *candle* and *-tle* in *little*.

Bos and Vaughn (2002) argued that syllabication is essential to struggling readers who have difficulty with polysyllabic words. That is, they can use the common single word types that they are familiar with and apply them to polysyllabic words, decoding each common syllable of a particular polysyllabic word, combining them, and sounding them out together.

5. Automatic word recognition or sight vocabulary: This is a strategy in which the reader automatically recognizes words without having to analyze the individual phonemes. This strategy is applied in decoding two types of words: high frequency words and less predictable words. According to Bos and Vaughn (2002), readers need to automatically recognize high frequency words such as *the*, *they*, *you*, *his*, and *from* so that they do not try to decode them. Less predictable words are words that cannot be decoded by applying the common rules of English pronunciation. In this case, readers must remember how the words are pronounced. For example, generally, <wh> is decoded to [w], but the readers cannot use the common rule to decode the word *who* because <wh> in the word *who* is decoded to [h]. Hence, readers have to remember that *who* is pronounced /hu:/ . The automatic word recognition strategy can reduce the time it takes readers to finish a text because they can immediately recognize an entire word when they see it.

6. Syntax and context clues: This strategy requires readers to use their knowledge of grammar and context clues to help them to guess what the target word means and how it is pronounced. For example, in the sentence, “He is a *talkative* person, who likes to talk all the time,” readers will use their knowledge of grammar to realize that the word

*talkative* is an adjective. They also use the meaning of the phrase *who likes to talk all the time* in the sentence to guess the meaning of the word *talkative* and know how it is pronounced because they know their meaning from the context and used to hear it in conversations. Another example is the sentence, “The flowers are *languishing* now because of the heat and lack of rain.” The readers can use the meaning of the word *heat* and the phrase *lack of rain* to guess the meaning of the word *languishing*. This strategy focuses on sentences and the text rather than single words in order for the readers to use the context and their grammar knowledge to pronounce the target word and grasp its meaning (Bos & Vaughn, 2002; Burns, Roe, & Ross, 1999; Deboer & Dallmann, 1960; Eldredge, 2005; Rubin, 1992).

7. Using other resources: In this strategy, readers ask someone else, such as their teachers, their siblings, and their friends, or consult a dictionary to determine the pronunciation, meaning, derivation, and the part of speech of the words they experience difficulty with (Bos & Vaughn, 2002; Burns, Roe, & Ross, 1999; Deboer & Dallmann, 1960; Rubin, 1992).

These educators (Bos & Vaughn, 2002; Burns, Roe, & Ross, 1999; Deboer & Dallmann, 1960; Rubin, 1992) also established that readers can use not only one, but two or more decoding strategies together to figure out the pronunciation of unknown words. For example, structural analysis is most often used in conjunction with phonic analysis. Readers can use their knowledge of word parts—prefixes, suffixes, and roots—to help them to isolate the root of an unknown word. After the root of the word has been isolated, they can then apply phonic analysis and decode the word.

### Problems with Decoding Words

Many people may think that students can comprehend a text without any problems with decoding words. However, several educators have stated that there are various problems that language learners encounter when decoding words.

According to Bos and Vaughn (2002) and Richek, Caldwell, Jennings, and Lerner (1996), some students face problems because in decoding they have difficulty remembering common letter-sound correspondences. They cannot automatically identify the sound of each letter when they see the letters of an unknown word. Moreover, Bos and Vaugh also stated that the differences in letter-sound relationships in the students' first language (L1) affect their ability to read unknown English words. For example, Thai words always end with one final sound, but an English word can end with more than one sound, for example *salt*, *fact*, *asks*, and *first*. Some Thai students, therefore, have problems with English words that end with more than one final sound. In addition, according to Richek et al. (2007), students who lack morphological awareness struggle with unknown words, and as a result they cannot decode these words. For example, if students do not know that *dis* is a prefix, they ought not to understand that the word *dislike* is the combination of the prefix *dis* and the word *like*. As a result, they cannot decode this word and grasp its meaning. Furthermore, Kennedy (1981) contended that in order to be able to sound out unknown words, students in lower grades have to have knowledge of the initial consonants, the combination of many other phonic units, and the segmentation of word structure. Kennedy stated that if students lack such knowledge, they are at risk of becoming incompetent readers in the upper grades.

Thus, according to the aforementioned educators, it can be concluded that problems in decoding words come from two main factors: (a) a lack of phonological awareness, i.e., an awareness of common letter-sound correspondences and (b) a lack of morphological

awareness, i.e., an awareness of prefixes, suffixes, and roots. As a result, at all ages and all levels of learning, there are still students who struggle with decoding.

### **Previous Studies Related to Decoding Strategies and Decoding Problems**

Research on word decoding can be divided into two separate phases, during and after the 1960s. According to Urquhart and Weir (1998), a large number of decoding studies about phonological awareness and morphological awareness were conducted during the 1960s. Two main findings can be concluded from these studies: (a) the reader's first language (L1) has an effect on his/her decoding in the second language (L2) and (b) the decoding and learning of unknown words is crucial to L2 reading. Urquhart and Weir also remarked that most decoding research during this period was conducted with young readers. In the period following the 1960s, research on word decoding was scarce, and only four studies could be found. A description of these studies is as follows.

Ku and Anderson (2003) studied the development of morphological awareness in English and Chinese students. The participants included 412 Taiwanese and 256 American students in second, fourth, and sixth grades. The instruments used in this study were six tests: (a) the morpheme recognition test, (b) the morpheme discrimination test, (c) the pseudowords test, (d) the select interpretations test, (e) the select vocabulary test, and (f) the reading comprehension test. The morphology of Chinese and English was also studied. The results showed that an awareness of word structure had an influence on vocabulary and reading comprehension. In addition, the results also indicated that even though the languages, writing systems, and the cultural traditions associated with education in Taiwan and middle America were significantly different, the development of morphological awareness among English and Chinese-speaking students was not significantly different. Furthermore, the nature of Chinese word formation affected students' acquisition of morphological derivation, especially compound words.

Eduene (2005) investigated the phonological awareness of syllables, onset-rimes, and phonemes which had an effect on preliterate and literate Spanish-speaking children. Preschoolers, kindergarteners, and first-graders participated in three experiments on phonological awareness tasks and on masked priming local decision tasks. The results indicated that for children, syllables were easier than onset-rime units, and onset-rime units were easier than phoneme units. In addition, the level of phonological awareness development was sensitive to the orthographic units used by children from the time they started to read. Moreover, both preliterate and literate children found that initial continuant consonants were easier than stop consonants.

Hamada and Koda (2008) investigated the influence of L1 orthographic experiences on decoding and semantic information retention of new words in L2. The participants in this research consisted of 35 college-level English L2 students with a typologically similar (Korean) and a dissimilar (Chinese) L1 background. The instrument was a pseudoword naming task with phonologically regular and irregular types of pseudowords. The regular pseudowords were constructed by replacing one phoneme from the original word such as *pend* from the original *rend*. The irregular pseudowords had few or no neighbor words with the same or a similar pattern. Similar to the regular pseudoword type, the irregular pseudowords were constructed by changing a phoneme from the original word, such as *gsar* from the original *tsar*. The findings showed that the Korean group had better overall retention, but did not perform as well with irregular pseudowords. Furthermore, it was also found that an L1 orthographic background had a direct effect on L2 word learning processes.

McDowell and Lorch (2008) examined the phonemic awareness and non-word processing of Chinese students. The participants were comprised of three groups: a Hong Kong Chinese student group and two groups of Mainland Chinese students. One

Mainland Chinese group had been exposed to the International Phonetic Alphabet (IPA). The instruments consisted of two tasks: an initial phoneme deletion task and a phoneme-grapheme non-word matching task. The findings showed that the Mainland Chinese IPA-trained group performed better on the initial phoneme deletion task than the Mainland Chinese non-IPA-trained group and the Hong Kong Chinese group. However, both Mainland Chinese groups performed better than the Hong Kong Chinese group on the phoneme-grapheme non-word matching task. Moreover, it was found that phonemic awareness among Chinese L1 readers of English influenced orthography.

In summary, the results of these international studies on this subject revealed that the L1 of the readers had an effect on their ability to decode words in their L2. Furthermore, the following factors have an effect on the ability of the reader in terms of decoding words and reading comprehension: morphological awareness, phonological awareness, the L1 orthographic background, and phonemic awareness.

With regard to research on Thai students, no studies on the decoding strategies that Thai students used and the decoding problems they experienced have been found. However, numerous studies have been conducted on the reading problems encountered by Thai students. The results indicated that Thai students of all academic levels experienced difficulties with reading. These problems included an inadequate vocabulary, an inability to guess the meaning of unknown words, a poor knowledge of grammatical rules, poor background knowledge, reading skills that are inappropriate for the students' levels, and inappropriate teaching methods in the classroom (Adunyarittigun, 2002; Changpueng, 2005; Chuenta, 2002; Intarasombat, 2002; Mingsakoon, 2003; Piyanukool, 2001; Tanghirunwat, 2003; Songsiri, 1999; Wongsuwan, 1992). Therefore, the present study was conducted to fill the gap. It was expected that the results of the study would be

beneficial to Thai teachers of English because it would raise their awareness of the decoding strategies used and decoding problems experienced by their students.



## **CHAPTER III**

### **Methodology**

This study aimed to investigate the decoding strategies that 11<sup>th</sup>-grade students at Bangnampriaowithaya School, the Secondary Educational Service Area Office 6, used and the problems these students experienced when they decoded English words. This chapter then discusses participants, research instruments, data collection, and data analysis.

#### **Participants**

##### **Selection of the school.**

Convenience sampling was applied in this research study. Bangnampriaowithaya School, the Secondary Educational Service Area Office 6, was selected as an ideal school for this study because the researcher was teaching there while conducting this research study, which facilitated her data collection. Additionally, Bangnampriaowithaya School was the largest school and had the highest number of students in Bangnampriao District. As a result, students from nearby areas came to study at this school. These students came from a variety of family backgrounds, and their social status, the educational level of their parents, and their home environment reflected this. Therefore, these students could be regarded as representative of the students in Bangnampriao District.

##### **Selection of the participants.**

Purposive sampling was used to select the grade level of the participants, and the researcher selected 11<sup>th</sup>-grade students. Originally, 12<sup>th</sup>-grade students, who were at the highest level of upper secondary education, should be asked to participate in this study. The reason for this decision was that Grade 12 was the highest level of upper secondary education prior to studying at the university, and after at least ten years of English study

in school, 12<sup>th</sup>-grade students ought not to have problems with decoding. However, 12<sup>th</sup>-grade students had to study hard to prepare themselves for the Ordinary National Educational Test, the Advanced National Education Test, the General Aptitude Test, and the Professional Aptitude Test. Thus, 11<sup>th</sup>-grade students, whose level of English proficiency was closest to that of 12<sup>th</sup>-grade students, were selected as participants in this study. Also, the researcher had been teaching students at this level, so it was convenient for her to collect data from them.

In addition, convenience sampling was applied in selecting the participants. When the researcher collected the data in the second semester of the 2009 academic year, there were two classes of 11<sup>th</sup>-grade students, with 30 students in each class. The researcher selected the class with the students she felt were the most cooperative and had the best attitude toward learning. Therefore, the total number of participants was 30 11<sup>th</sup>-grade students.

### **Research Instruments**

For this study, the instruments employed to collect the data comprised of a questionnaire on decoding strategies and a decoding test. The following methodology was applied to the use of these research tools.

#### **The questionnaire.**

The questionnaire used in this study was close-ended in order to obtain information on the decoding strategies of the participants (see Appendix A). It consisted of 27 statements regarding the use of decoding strategies: phonic analysis, onset-rime, structural analysis, syllabication, automatic word recognition, syntaxes and context clues, and consulting other sources such as a dictionary, a teacher, or a friend. The participants were asked to check “Yes” or “No” in response to each statement. The “Yes” response meant that they used the strategy described by that statement, and the “No” item meant

that they did not. The 27 statements were written in Thai so that the participants would not have any difficulty understanding them. The English version of questionnaire about decoding strategies was also provided (see Appendix B).

The researcher constructed the questionnaire based on a review of the literature on decoding strategies, and seven decoding strategies were included in this questionnaire. The researcher's Master's project advisor and an upper secondary school teacher, a Senior Professional Level (K3) for the Thai subject, examined the questionnaire for ambiguous wording and to ascertain the appropriateness and validity of the content. The relevance of the questionnaire to the purpose of this study was also checked and confirmed by the Master's project advisor.

***The pilot study of the questionnaire.***

A pilot study was conducted to determine an appropriate time for completing the questionnaire and whether or not the phrasing of each statement could precisely describe the target strategy. The pilot participants were seven students at Phaidamphitthayakhom Ratchamongkhalaphisek School in Bangnampriao District, Chachoengsao, who were at an equivalent educational level and qualification to the participants of this study. The pilot study started in early December in the second semester of the 2009 academic year. The participants were asked to complete the questionnaire during an English class. After they completed the questionnaire, the pilot participants commented that some statements in the questionnaire were too long and confusing and there were too many pages in the questionnaire. Therefore, the contents and the wording of long statements (items 1, 2, 4, 13, 18, 23, and 24) were rephrased and the English translations of all the statements were eliminated. As a result, the questionnaire was reduced from eight to five pages.

### **The decoding test**

The decoding test was the instrument used to investigate the decoding problems experienced by the participants (see Appendix B). Based on the review of the literature on decoding strategies, there were seven decoding strategies: (a) phonic analysis, (b) onset-rime, (c) structural analysis, (d) syllabication, (e) automatic word recognition, (f) syntaxes and context clues, and (g) consulting other sources. One strategy, namely syntax and context clues, was involved with guessing the meaning of words in sentences based on their context and the grammatical knowledge of the reader, whereas the decoding test focused on single words. Therefore, this strategy was excluded from the test. Another strategy, which was consulting other sources such as teachers, friends, or dictionaries, was also not included in the decoding test because the participants had to decode English words in the decoding test by themselves, and they could not consult a dictionary or ask anyone. As a result, the decoding test was based only on five decoding strategies: (a) phonic analysis, (b) onset-rime, (c) structural analysis, (d) syllabication, and (e) automatic word recognition.

The words in the decoding test were selected from the textbook, which was based on the Basic Education Curriculum B.A. 2551 (A.D. 2008) of the Ministry of Education. Based on the review of literature on decoding strategies, the decoding test consisted of 122 words. Each word investigated one point. For example, the word *crow* was used to investigate only the initial consonant cluster /cr/, and the word *tiger* was used to investigate only the open syllable (CV). However, for the automatic word recognition strategy, which consisted of two types, namely high frequency words and less predictable words, five words (*you, as, of, like, and her*) were included to check high frequency words and four words (*what, when, where, and who*) were used for checking less predictable words because from the researcher's teaching experience, students frequently

encountered these words in their reading; thus, these words were chosen to investigate whether the students had problems with them or not. The words which were included in the decoding test are as follows.

Table 1

*Words in the Decoding Test*

| Decoding Strategies                | Number of Words | Words                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Phonic analysis                    |                 |                                                                                                                                                                                                                                                                                                                                                          |
| Consonants                         |                 |                                                                                                                                                                                                                                                                                                                                                          |
| Initial consonant clusters         | 24              | <u>b</u> lue, <u>b</u> rown, clock, <u>c</u> row, <u>d</u> rink, <u>f</u> ly, <u>f</u> rog, <u>g</u> loves, <u>g</u> row, <u>p</u> lace, <u>p</u> rince, <u>s</u> core, <u>s</u> ky, <u>s</u> lide, <u>s</u> moke, <u>s</u> nake, <u>s</u> pot, <u>s</u> tar, <u>s</u> velte, <u>s</u> wim, <u>s</u> chool, <u>s</u> cream, <u>s</u> treet, <u>t</u> rip |
| Final consonant clusters           | 17              | <u>p</u> ink, <u>ch</u> ance, <u>l</u> unch, <u>ve</u> nt, <u>to</u> ld, <u>s</u> elf, <u>m</u> ilk, <u>f</u> ilm, <u>h</u> elp, <u>s</u> alt, <u>s</u> olve, <u>f</u> act, <u>j</u> ump,                                                                                                                                                                |
| Initial consonant digraphs         | 12              | <u>gr</u> asp, <u>tr</u> ust, <u>fr</u> iend, <u>s</u> ift, <u>kn</u> ow, <u>ph</u> one, <u>th</u> umb, <u>wh</u> ich, <u>wh</u> om, <u>w</u> rite, <u>gn</u> at, <u>ch</u> aos, <u>ch</u> ild, <u>sh</u> ould, <u>sc</u> ene, <u>qu</u> ick                                                                                                             |
| Final consonant digraphs/trigraphs | 11              | <u>b</u> uzz, <u>d</u> umb, <u>l</u> ock, <u>m</u> outh, <u>r</u> ough, <u>th</u> rough, <u>w</u> ash, <u>w</u> rong, <u>b</u> ought, <u>l</u> edge, <u>w</u> atch                                                                                                                                                                                       |
| Vowels                             |                 |                                                                                                                                                                                                                                                                                                                                                          |
| Short vowels                       | 4               | <u>y</u> et, <u>g</u> ym, <u>fo</u> x, <u>bu</u> s                                                                                                                                                                                                                                                                                                       |
| Long vowels                        | 2               | <u>ra</u> g, <u>u</u> se                                                                                                                                                                                                                                                                                                                                 |
| Digraphs                           | 6               | <u>ga</u> y, <u>la</u> w, <u>no</u> ise, <u>ol</u> d, <u>zo</u> o, <u>so</u> uth                                                                                                                                                                                                                                                                         |
| R vowels                           | 4               | <u>fa</u> r, <u>de</u> ar, <u>ho</u> rse, <u>pe</u> r                                                                                                                                                                                                                                                                                                    |
| Onset-rime                         |                 |                                                                                                                                                                                                                                                                                                                                                          |
| VC                                 | 3               | <u>cab</u> , <u>shed</u> , <u>kid</u>                                                                                                                                                                                                                                                                                                                    |
| VCC                                | 4               | <u>back</u> , <u>cell</u> , <u>pick</u> , <u>sock</u>                                                                                                                                                                                                                                                                                                    |
| VCV                                | 1               | <u>page</u>                                                                                                                                                                                                                                                                                                                                              |
| VV                                 | 1               | <u>pea</u>                                                                                                                                                                                                                                                                                                                                               |
| VVC                                | 3               | <u>pain</u> , <u>peel</u> , <u>load</u>                                                                                                                                                                                                                                                                                                                  |
| Automatic word recognition         |                 |                                                                                                                                                                                                                                                                                                                                                          |
| High frequency words               | 5               | you, as, of, like, her                                                                                                                                                                                                                                                                                                                                   |
| Less predicable words              | 4               | what, when, where, who                                                                                                                                                                                                                                                                                                                                   |

(continued)

Table 1 (continued)

*Words in the Decoding Test*

| Decoding Strategies        | Number of Words | Words                                                                                                                                  |
|----------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syllabifications</b>    |                 |                                                                                                                                        |
| CVC                        | 1               | <u>h</u> ostel                                                                                                                         |
| CV                         | 1               | <u>t</u> iger                                                                                                                          |
| CVCV                       | 1               | comp <u>e</u> te                                                                                                                       |
| CVVC                       | 1               | tr <u>a</u> iner                                                                                                                       |
| CV-r                       | 1               | ch <u>a</u> rter                                                                                                                       |
| C+le                       | 1               | c <u>a</u> nd <u>l</u> e                                                                                                               |
| <b>Structural analysis</b> |                 |                                                                                                                                        |
| Compound                   | 1               | starfish                                                                                                                               |
| Prefix                     | 1               | <u>u</u> nhappy                                                                                                                        |
| Root                       | 1               | tele <u>v</u> ision                                                                                                                    |
| Suffix                     | 1               | color <u>ful</u>                                                                                                                       |
| Variants                   | 3               | friend <u>s</u> , friend <u>l</u> ess, friend <u>ly</u>                                                                                |
| Inflectional endings       | 8               | bigg <u>er</u> , fast <u>est</u> , fish <u>ing</u> , drink <u>s</u> , bus <u>es</u> , walk <u>ed</u> , play <u>ed</u> , want <u>ed</u> |

***The pilot study of the decoding test.***

A pilot study was also conducted to ensure the appropriateness of the decoding test, and the pilot participants, who were asked to respond to the questionnaire, were also asked to take the decoding test in this pilot study. The pilot participants commented that there were a large number of words in the decoding test. Thus, the words in the decoding test were adjusted, so that some could be used to investigate more than one point, and 13 words—*child*, *trip*, *dumb*, *grow*, *write*, *pick*, *which*, *whom*, *mouth*, *lock*, *kid*, *cab*, and *cell*—were eliminated from the test. As a result, the number of words used in the decoding test was reduced from 122 to 109 words. The details are as follows.

Table 2

*Words in the Decoding Test Adjusted after the Pilot Study*

| Decoding Strategies                 | Number of Words | Words                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Phonic analysis                     |                 |                                                                                                                                                                                                                                                                                                                                                                             |
| Consonants                          |                 |                                                                                                                                                                                                                                                                                                                                                                             |
| Initial consonant clusters          | 24              | <u>b</u> lue, <u>b</u> rown, <u>c</u> lock, <u>c</u> row, <u>d</u> rink, <u>f</u> ly, <u>f</u> rog, <u>g</u> loves, <u>g</u> rasp, <u>p</u> lace, <u>p</u> rince, <u>s</u> core, <u>s</u> ky, <u>s</u> lide, <u>s</u> moke, <u>s</u> nake, <u>s</u> pot, <u>s</u> tar, <u>s</u> velte, <u>s</u> wim, <u>s</u> chool, <u>s</u> cream, <u>s</u> tr <u>e</u> et, <u>t</u> rust |
| Final consonant clusters            | 17              | <u>p</u> ink, <u>ch</u> ance, <u>lun</u> ch, <u>vent</u> , <u>told</u> , <u>self</u> , <u>milk</u> , <u>film</u> , <u>help</u> , <u>salt</u> , <u>solve</u> , <u>fact</u> , <u>jump</u> , <u>grasp</u> , <u>trust</u> , <u>friend</u> , <u>sift</u>                                                                                                                         |
| Initial consonant diagraphs         | 12              | <u>kn</u> ow, <u>ph</u> one, <u>th</u> umb, <u>wh</u> at, <u>wh</u> o, <u>wr</u> ong, <u>gn</u> at, <u>ch</u> aos, <u>ch</u> ance, <u>sh</u> ould, <u>sc</u> ene, <u>qu</u> ick                                                                                                                                                                                             |
| Final consonant diagraphs/trigraphs | 11              | <u>buzz</u> , <u>thum</u> b, <u>clock</u> , <u>south</u> , <u>rough</u> , <u>throug</u> h, <u>wash</u> , <u>wrong</u> , <u>bought</u> , <u>ledge</u> , <u>watch</u>                                                                                                                                                                                                         |
| Vowels                              |                 |                                                                                                                                                                                                                                                                                                                                                                             |
| short vowels                        | 4               | <u>y</u> et, <u>g</u> ym, <u>fo</u> x, <u>bu</u> s                                                                                                                                                                                                                                                                                                                          |
| Long vowels                         | 2               | <u>rag</u> , <u>u</u> se                                                                                                                                                                                                                                                                                                                                                    |
| Digraphs                            | 6               | <u>gay</u> , <u>law</u> , <u>noise</u> , <u>old</u> , <u>zoo</u> , <u>south</u>                                                                                                                                                                                                                                                                                             |
| R vowels                            | 4               | <u>far</u> , <u>dear</u> , <u>horse</u> , <u>per</u>                                                                                                                                                                                                                                                                                                                        |
| Onset-rime                          |                 |                                                                                                                                                                                                                                                                                                                                                                             |
| VC                                  | 3               | <u>rag</u> , <u>shed</u> , <u>bus</u>                                                                                                                                                                                                                                                                                                                                       |
| VCC                                 | 4               | <u>back</u> , <u>buzz</u> , <u>quick</u> , <u>sock</u>                                                                                                                                                                                                                                                                                                                      |
| VCV                                 | 1               | <u>page</u>                                                                                                                                                                                                                                                                                                                                                                 |
| VV                                  | 1               | <u>pea</u>                                                                                                                                                                                                                                                                                                                                                                  |
| VVC                                 | 3               | <u>pain</u> , <u>peel</u> , <u>load</u>                                                                                                                                                                                                                                                                                                                                     |
| Automatic word recognition          |                 |                                                                                                                                                                                                                                                                                                                                                                             |
| High frequency words                | 5               | you, as, of, like, her                                                                                                                                                                                                                                                                                                                                                      |
| Less predicable words               | 4               | what, when, where, who                                                                                                                                                                                                                                                                                                                                                      |
| Syllabifications                    |                 |                                                                                                                                                                                                                                                                                                                                                                             |
| CVC                                 | 1               | <u>hostel</u>                                                                                                                                                                                                                                                                                                                                                               |
| CV                                  | 1               | <u>tiger</u>                                                                                                                                                                                                                                                                                                                                                                |
| CVCV                                | 1               | <u>compete</u>                                                                                                                                                                                                                                                                                                                                                              |
| CVVC                                | 1               | <u>trainer</u>                                                                                                                                                                                                                                                                                                                                                              |
| CV-r                                | 1               | <u>charter</u>                                                                                                                                                                                                                                                                                                                                                              |
| C+le                                | 1               | <u>candle</u>                                                                                                                                                                                                                                                                                                                                                               |

(continued)

Table 2 (continued)

*Words in the Decoding Test Adjusted after the Pilot Study*

| Decoding Strategies  | Number of Words | Words                                                                                                                                    |
|----------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Structural analysis  |                 |                                                                                                                                          |
| Compound             | 1               | starfish                                                                                                                                 |
| Prefix               | 1               | <u>un</u> happy                                                                                                                          |
| Root                 | 1               | tele <u>vision</u>                                                                                                                       |
| Suffix               | 1               | color <u>ful</u>                                                                                                                         |
| Variants             | 3               | friend <u>s</u> , friend <u>less</u> , friend <u>ly</u>                                                                                  |
| Inflectional endings | 8               | bigger <u>e</u> , fastest <u>e</u> , fish <u>ing</u> , drink <u>s</u> , bus <u>es</u> , walk <u>ed</u> , play <u>ed</u> , want <u>ed</u> |

After the pilot participants had taken the decoding test, the results were statistically calculated to determine the reliability of the test. The results of the reliability analysis yielded the reliability value of the decoding test at 0.97.

***Grading criteria of the decoding test.***

In order to assess the ability of the participants to decode English words, the researcher established grading criteria for the decoding test, which were as follows:

1. Any words that a participant could not decode or decoded incorrectly were considered incorrect.
2. Any word stress mistakes were ignored. For example, if a participant could decode the word *supermarket* but used the wrong stress, their decoding was considered correct because the researcher did not focus on word stress.
3. Every word in the test was selected to target certain decoding problems, and only the designated point or points of each word was marked as correct or incorrect. For example, the word *driver* was aimed at checking the suffix *er*. Thus, if a participant read

it as /darvə/, it was counted as correct, even though the participant did not accurately decode the sound /r/ in the word.

### **Data Collection Procedures**

The data were collected in January 2010 during the second semester of the 2009 academic year. The following procedures were used to collect the data.

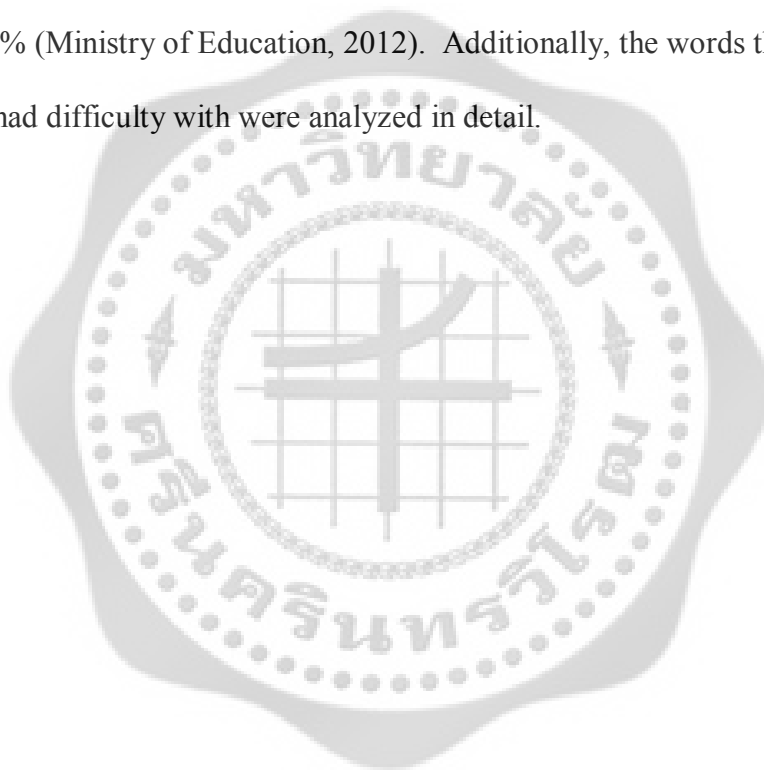
1. The researcher contacted the school director and asked for permission to conduct the study with 11<sup>th</sup>-grade students.
2. The questionnaire, which focused on the decoding strategies used by the students when decoding English words, was distributed to the participants during their English class in the second week of January 2010. The researcher also went through the questionnaire with the participants and explained each statement to them while they were completing the questionnaire. After the participants completed the questionnaire, they were asked to return them immediately to ensure that the researcher received all of the questionnaires back.
3. The decoding test was administered to the participants after they had completed the questionnaire. Every day, five participants took this test during their lunch period. Within six days, all thirty participants had taken the decoding test. The decoding test required the student to read the words in the decoding test aloud, while the researcher recorded whether or not the participants could decode the word.

### **Data Analysis**

The data collected for this study were analyzed according to the two research questions:

1. What strategies do 11<sup>th</sup>-grade Thai students use to decode English words?
2. What problems do 11<sup>th</sup>-grade Thai students have with decoding English words?

In order to answer Research Question 1, the frequency of each decoding strategy that the participants reported using was counted and then calculated into a percentage based on the total number of the participants. To answer Research Question 2, the results of all the participants were counted and then calculated into a percentage based on the total of words in the decoding test. The performance of the participants on the decoding test was then judged based on the requirement of the Basic Education Curriculum B.A. 2551 (A.D. 2008), which states that in order to pass an exam, students must have a score of at least 50% (Ministry of Education, 2012). Additionally, the words that the participants had difficulty with were analyzed in detail.



## CHAPTER IV

### Findings

The purpose of this study was to investigate the strategies that 11<sup>th</sup>-grade Thai students used to decode English words and the problems they experienced with decoding English words. Therefore, the study was conducted in order to answer the following research questions:

1. What strategies do 11<sup>th</sup>-grade Thai students use to decode English words?
2. What problems do 11<sup>th</sup>-grade Thai students have with decoding English words?

This chapter presents the findings of the study that were derived from the analysis of the data in the questionnaire about decoding strategies and the decoding test about decoding problems experienced by the participants, following the order of the two research questions listed above.

#### Research Question 1

##### What Strategies do 11<sup>th</sup>-Grade Thai Students Use to Decode English Words?

In order to answer Research Question 1, the participants were asked to complete a close-ended questionnaire that was comprised of 27 statements about the decoding strategies they used to deal with English words. These statements were based on the seven decoding strategies from the review of literature: phonic analysis, onset-rime, structural analysis, syllabication, automatic word recognition, syntax and context clues, as well as using other sources such as a dictionary, a teacher, a friend or a sibling. Thus, the frequency of each statement in the questionnaire was calculated and classified into seven decoding strategies. The results are presented in Table 3.

Table 3

*Decoding Strategies Used by the Participants (N=30)*

| Decoding strategies        | %     |
|----------------------------|-------|
| Phonic analysis            | 80.00 |
| Using other sources        | 75.56 |
| Automatic word recognition | 74.44 |
| Structural analysis        | 70.74 |
| Syllabication              | 70.00 |
| Syntax and context clues   | 67.78 |
| Onset-rime                 | 57.78 |

It is apparent from Table 3 that, among the seven decoding strategies, the most frequently used decoding strategy was phonic analysis (80.00%); using other sources, automatic word recognition, structural analysis, syllabication, and syntax and context clues were next in line, accounting for 75.56%, 74.44%, 70.74%, 70.00%, and 67.78% respectively. Onset-rime was the least frequently used strategy, at 57.78%.

### **Research Question 2**

#### **What Problems do 11<sup>th</sup>-Grade Thai Students Have with Decoding English Words?**

In order to answer Research Question 2, the participants were asked to take a decoding test that was comprised of 109 words. These words were based on five decoding strategies: phonic analysis, onset-rime, structural analysis, syllabication, and automatic word recognition— in order to investigate the decoding problems experienced by the participants. Each participant read the words in the decoding test aloud, while the researcher recorded whether or not the participants could decode the words. The results are presented in Table 4.

Table 4

*Performance of the Participants on the Decoding Test (N=30)*

| No. | The number of words (109) | %     |
|-----|---------------------------|-------|
| 1   | 106                       | 97.25 |
| 2   | 106                       | 97.25 |
| 3   | 103                       | 94.50 |
| 4   | 99                        | 90.83 |
| 5   | 99                        | 90.83 |
| 6   | 99                        | 90.83 |
| 7   | 94                        | 86.24 |
| 8   | 93                        | 85.32 |
| 9   | 87                        | 79.82 |
| 10  | 82                        | 75.23 |
| 11  | 80                        | 73.39 |
| 12  | 78                        | 71.56 |
| 13  | 74                        | 67.89 |
| 14  | 66                        | 60.55 |
| 15  | 64                        | 58.72 |
| 16  | 59                        | 54.13 |
| 17  | 55                        | 50.46 |
| 18  | 50                        | 45.87 |
| 19  | 42                        | 38.53 |
| 20  | 39                        | 35.78 |
| 21  | 38                        | 34.86 |
| 22  | 33                        | 30.28 |
| 23  | 32                        | 29.36 |
| 24  | 26                        | 23.85 |
| 25  | 24                        | 22.02 |
| 26  | 24                        | 22.02 |
| 27  | 21                        | 19.27 |
| 28  | 20                        | 18.35 |
| 29  | 20                        | 18.35 |
| 30  | 20                        | 18.35 |

As stated before, the requirement of the Basic Education Curriculum B.A. 2551 (A.D. 2008), which specifies that in order to pass an exam, students must have a score of at least 50%, was used to judge the participants' performance on the decoding test (Ministry of Education, 2012). Thus, based on the stated criterion, 13 participants who scored less than 50% were classified as having problems with decoding English words.

In order to investigate the problems that the 13 participants who did not pass the decoding test experienced when decoding English words, the words that they had difficulty with were analyzed in detail. The results are presented in Table 5.

Table 5

*Decoding Problems of the Participants*

| Decoding Problems      | Words                                                                                                      |
|------------------------|------------------------------------------------------------------------------------------------------------|
| Single consonants      | use, yet                                                                                                   |
| Consonant clusters     |                                                                                                            |
| Initial clusters       |                                                                                                            |
| R-clusters             | brown, crow, drink, friend, frog, grasp, prince, trust<br>street, through                                  |
| L-clusters             | blue, clock, gloves, place, slide                                                                          |
| Other-clusters         | score, slide, spot, snake, star, svelte, swim, school,<br>scream                                           |
| Final clusters         |                                                                                                            |
| Two final clusters     | drink, fact, film, friend, grasp, help jump, milk, salt,<br>self, sift, trust                              |
| Three final clusters   | chance, drinks, friends, gloves, lunch, solve,                                                             |
| Consonant digraphs     |                                                                                                            |
| Initial digraphs       | chance, gnat, know, phone, quick, scene, shed, should,<br>thumb, what, when, wrong                         |
| Final digraphs         | back, clock, buzz, quick, rough, should, sock, south,<br>through, thumb, wash, wrong, bought, ledge, watch |
| Vowel digraphs         | brown, bought, law, noise, pain, pea, should, south                                                        |
| R-controlled vowels    | dear, far, where                                                                                           |
| The vowel <y>          | fly, gym, sky                                                                                              |
| Vowels ending with <e> | like, page                                                                                                 |
| Inflectional endings   | bigger, fastest, buses, drinks friends, played, walked,<br>wanted, fishing                                 |
| Prefix                 | unhappy                                                                                                    |
| Root                   | television                                                                                                 |

(continued)

Table 5 (continued)

*Decoding Problems of the Participants*

| Decoding Problems | Words                                                   |
|-------------------|---------------------------------------------------------|
| Suffixes          | charter, colorful, friendless , friendly, trainer       |
| Compound word     | starfish                                                |
| Syllabifications  | candle, chaos, compete, hostel, tiger, trainer, charter |

According to the table 5, the problems that the 13 participants had difficulty with when they decoded English words in the decoding test were two single consonants, consonant clusters, consonant digraphs, vowel digraphs, R-controlled vowels, the vowel <y>, vowels ending with <e>. The participants had problems with words that end with inflectional endings; prefix; root; suffixes; and compound word. They also had problems with syllabifications. The two single consonants that the participants had problems with were <u> and <y>. In terms of the consonant clusters, the participants had problems with the initial consonant clusters that could be classified into three groups: (a) the R-clusters group—<br>, <cr>, <dr>, <fr>, <gr>, <pr>, <tr><str>, and <thr>—, (b) the L-clusters group —<bl>, <cl>, <gl>, <pl>, and <sl>—, and (c) the other-clusters group—<sc>, <sl>, <sn>, <sp>, <st>, <sv>, <sw>, <sch>, and <scr>. The participants also experienced difficulty with the final consonant clusters that can be classified into (a) the two-letters group—<nk>, <ct>, <lm>, <nd>, <sp>, <lp>, <mp>, <lk>, <lt>, <lf>, <ft>, and <st>— and (b) the three-letters group—<nce>, <nks>, <nds>, <ves>, <nch>, and <lve>. Additionally, the participants had problems with the initial consonant digraphs <ch>, <gn>, <kn>, <ph>, <qu>, <sc>, <sh>, <th>, <wh>, and <wr>, and the final consonant digraphs <ck>, <zz>, <gh>, <ld>, <th>, <mb>, <sh>, <ng>, <ght>, <dge>, and <tch>.

With regard to vowels, the vowel digraphs <ow>, <ou>, <aw>, <oi>, <ai>, and <ea> were the most problematic, followed by the R-controlled vowels <ear>, <ar>, and <ere>, the vowel <y>, and the vowels ending with <e>.

All types of inflectional endings: the comparative and superlative form, the plural form, the past form, and the gerund; prefix; root; suffixes; compound word had a negative impact on the decoding ability of the participants. Also, all common syllable types, namely closed (CVC), open (CV), vowel-consonant-e (CVCe), vowel team (CVVC), R-controlled (CV+r), and consonant-le (-C+le), were problematic for the participants in terms of decoding polysyllabic words.

### **Summary**

The participants used all decoding strategies with a high degree of frequency. Among the seven decoding strategies, the phonic analysis was the most frequently used strategy by the participants. The onset-rime strategy was used the least, but the frequency of this strategy was quite high (57.78%). Furthermore, about half of all participants experienced difficulty decoding English words. The decoding problems were two single consonants, consonant clusters, consonant digraphs, vowel digraphs, R-controlled vowels, the vowel <y>, and vowels ending with <e>. The participants had problems with words that end with inflectional endings; prefix; root; suffixes; and compound word. They also had problems with syllabifications.

## CHAPTER V

### Discussion, Recommendations, and Conclusion

The purpose of this study was to examine the decoding strategies and the problems the participants experienced with decoding English words. The participants of this study were 30 students in Grade 11 from Bangnampriaowitthaya School, the Secondary Educational Service Area Office 6. The data for the study was obtained through a questionnaire and a decoding test. The questionnaire was employed to investigate the decoding strategies used by the participants, and the decoding test was used to investigate the problems they had with decoding English words. The data obtained from the questionnaire and the decoding test were analyzed with reference to the research questions:

1. What strategies do 11<sup>th</sup>-grade Thai students use to decode English words?
2. What problems do 11<sup>th</sup>-grade Thai students have with decoding English words?

This chapter presents a discussion of the findings. Recommendations for further studies and a conclusion are also provided in this chapter.

#### Discussion

##### Research question 1.

##### *Results.*

Among the seven decoding strategies, phonic analysis was the most frequently used strategy, at 80.00%, followed by using other sources, automatic word recognition, structural analysis, syllabication, and syntax and context clues (at 75.56%, 74.44%, 70.74%, 70.00%, 67.78%, and 57.78% respectively). The least frequently used strategy was onset-rime (57.78%).

### ***Discussion.***

The findings of this study reveal that the participants used a variety of decoding strategies in order to help them decode English words when they read a text. These decoding strategies were used with a high degree of frequency by the participants; even the frequency of the onset-rime, which was the least frequently used strategy, was more than 50%. Thus, the findings of this study confirm the remarks of a number of educators (Bos & Vaughn, 2002; Burns, Roe, & Ross, 1999; Deboer & Dallmann, 1960; Rubin, 1992), who stated that generally no one strategy is appropriate for all words; therefore, the readers use a variety of decoding strategies and they will try a new strategy if the first one fails.

These findings show that all of the decoding strategies are significant for students in terms of decoding English words. The three most frequently-used decoding strategies—phonic analysis, using other resources, and automatic word recognition—are common strategies that are not complicated to use; therefore, it is not surprising that the participants used them frequently.

With regard to the results that structural analysis, syllabication, and syntax and context clues were less frequently used than the previous three decoding strategies, this may be due to the fact that in order to employ these strategies, the participants needed to have several types of knowledge—word parts, common syllable types, and an adequate vocabulary—to decode English words. However, the participants may lack such knowledge; as a result, they used these strategies less frequently than phonic analysis, using other resources, and automatic word recognition.

Lastly, the results that onset-rime was the least frequently used strategy may be explained by the fact that most teachers rarely teach this strategy, so students are

unfamiliar with it. However, the onset-rime strategy is normally combined with the phonic analysis strategy, which was used with a high degree of frequency. This might explain why onset-rime was employed at a relatively high frequency, despite the fact that it was the least popular strategy.

In conclusion, all of the decoding strategies— phonic analysis, using other sources, automatic word recognition, structural analysis, syllabication, syntax and context clues, and onset-rime— play a vital role for the participants in decoding English words. It can be concluded from the findings of the present study that each participant used a variety of decoding strategies to help him or her to decode words.

## **Research question 2.**

### ***Results.***

Almost half of the participants had problems with decoding English words both single-syllable and polysyllabic words. In terms of single-syllable words, the most serious problems included the two single consonants, consonant clusters, consonant digraphs, vowel digraphs, R-controlled vowels, the vowel <y>, and vowels ending with <e>. With regard to polysyllable words, they had problems with words that end with inflectional endings; words that consisted of prefixes, roots, and suffixes; and compound words. The participants also had problems with word segmentation.

The two single consonants that the participants had problems with were <u> and <y>. In terms of the consonant clusters, the participants had problems with the initial consonant clusters that could be classified into three groups: (a) the R-clusters group— <br>, <cr>, <dr>, <fr>, <gr>, <pr>, <tr><str>, and <thr>—, (b) the L-clusters group — <bl>, <cl>, <gl>, <pl>, and <sl>—, and (c) the other-clusters group—<sc>, <sn>, <sp>, <st>, <sv>, <sw>, <sch>, and <scr>. The participants also experienced difficulty with the final consonant clusters that can be classified into (a) the two-letters group—<nk>, <ct>,

<lm>, <nd>, <sp>, <lp>, <mp>, <lk>, <lt>, <lf>, <ft>, and <st>— and (b) the three-letters group—<nce>, <nks>, <nds>, <ves>, <nch>, and <lve>. Additionally, the participants had problems with the initial consonant digraphs <ch>, <gn>, <kn>, <ph>, <qu>, <sc>, <sh>, <th>, <wh>, and <wr>, and the final consonant digraphs <ck>, <zz>, <gh>, <ld>, <th>, <mb>, <sh>, <ng>, <ght>, <dge>, and <tch>.

With regard to vowels, the vowel digraphs <ow>, <ou>, <aw>, <oi>, <ai>, and <ea> were the most problematic, followed by the R-controlled vowels <ear>, <ar>, and <ere>, the vowel <y>, and the vowels ending with <e>.

All types of inflectional endings: the comparative and superlative form, the plural form, the past form, and the gerund; prefix; root; suffixes; compound word had a negative impact on the decoding ability of the participants. Also, all common syllable types, namely closed (CVC), open (CV), vowel-consonant-e (CVCe), vowel team (CVVC), R-controlled (CV+r), and consonant-le (-C+le), were problematic for the participants in terms of decoding polysyllabic words.

### ***Discussion.***

The results of the study have proved that some 11<sup>th</sup>-grade students have difficulty decoding English words. This poses a big problem for them when reading English texts because if they cannot decode some words in a text, they will not know what these words are, cannot grasp their meaning, and finally cannot understand the text that they are reading. This reading comprehension problem is even more serious when students study at the university level, where they are required a lot of reading of English texts. Therefore, teachers should realize the significant role of decoding in the students' reading process.

The participants' decoding problems found from the data analysis indicate that students had problems with both single-syllable and polysyllabic words. In terms of

single-syllable words, the findings that students had problems decoding words with the single consonants <u> and <y>, consonant clusters, consonant digraphs, vowel digraphs, R-controlled vowels, the vowel <y>, and vowels ending with <e>, show that the participants lacked knowledge about letter-sound correspondences. The findings are consistent with the remarks made by Bos & Vaughn (2002) and Richeck et al. (1996) that decoding problems are a result of a lack of phonic knowledge. Such lack of knowledge of grapheme-phoneme correspondences of the students may be due to a number of factors: characteristics of English, little focus of teachers on teaching phonics, and differences between Thai and English.

With regard to characteristics of English, the grapheme-phoneme correspondences of English are complicated. Some graphemes represent more than one sound. For example, the vowel digraph <ou> can be decoded into /ɔɪ/ as in *bought*, /aʊ/ as in *south*, and /ʊ/ as in *should*. Another example was the consonant digraph <gh>, which can be decoded into /f/ as in *rough*, /g/ as in *ghost*, or silent as in *through*. In addition, some phonemes represent more than one grapheme. For instance, the phoneme /s/ can be spelled with <ce> as in *prince*, <s> as in *bus*, or <ss> as in *glass*. Third, some letters, namely <y> and <u>, can be both consonant and vowel. For example, the letter <y> is a consonant in the word *yet*, but a vowel in the words *gym*, *sky*, and *fly*. Additionally, the letter <u> acts as a consonant in the word *use* and as a vowel in the word *bus*. Thus, because of these complications of the English letter-sound correspondences, students have problems with decoding English words

In addition, in teaching English to Thai children, teachers do not focus on teaching phonics, which is an important part of a wide range of strategies that support them in their early years of English learning in order to read and write English confidently

because it helps them identify the relationship between sounds and letters and to use this information to support their English spelling and reading skills. Therefore, students do not have phonic knowledge.

Additionally, phonological differences between Thai and English can pose problems for students when they try to use their phonic knowledge of English. For example, some initial consonant clusters in English —<sc>, <sl>, <sn>, <sp>, <st>, <sv>, <sw>, <sch>, and <scr> — do not exist in the Thai language; as a result, the students may be unfamiliar and confused about how to decode them. Another difference is that English words, such as *fact*, *grasp*, and *gloves*, can end with more than one final sound, but Thai words end with only one final sound. Hence, when the students encounter English words, which end with more than one final sound, they do not know how to decode them.

Besides single-syllable words, the data found in the study also show that the participants had problems with polysyllabic words, which end with inflectional endings, consist of prefixes, suffixes, and roots, or are compound words. These findings are in accordance with the remarks of Richek, Caldwell, Jennings, and Lerner (1996), who claimed that students who lack morphological awareness are incapable of decoding English words. This may be due to the fact that the students lack the knowledge of word structure, or they are unaware of it when they are decoding English words. Therefore, when they encounter polysyllabic words, they can decode only the stem or the root of the words, with which they are familiar. Besides, as the participants stated in an informal interview conducted by the researcher later in the study that they did not know where to segment polysyllabic words, the inability of the participants to decode polysyllabic words may also result from their lack of the requisite knowledge of the English common syllable patterns because these patterns are generally not taught in the English classes in Thailand. Therefore, in addition to the morphological awareness, students may have problems

decoding polysyllabic words because they lack awareness of the English common syllable patterns.

In conclusion, the data analysis has indicated that several participants in this study still struggled with decoding English words although they were studying at the upper-secondary level. The inability to decode words affects students' reading comprehension; therefore, students' decoding skills need to be developed as a requisite to the improvement of their reading comprehension. In English classes, emphasis must be put on English word decoding strategies, and teachers should devote more time and effort to develop their students' decoding skills. Additionally, systematic phonics should be taught to both new and remedial students.

### **Recommendations for Further Studies**

The recommendations for further studies are presented as follows:

1. In this study, only 109 words were used to investigate the participants' English word decoding problems. Some of the words in the decoding test were used to investigate several points at the same time. Also, a point was checked by only one word. In further research, therefore, a larger number of words should be used to investigate each point so that the finding of each decoding problem can be generalized.
2. In order to gain more in-depth information about the use of decoding strategies and the problems students encounter when decoding English words, think-aloud sessions and interviews should be used as research instruments to see whether the results are consistent with those of the present study.
3. In order to ascertain the reliability of the present study, a larger number of participants should be asked to participate in further studies.
4. This study was carried out with 11<sup>th</sup>-grade students. To gain additional information about Thai students' decoding strategies and problems, students at other educational

levels, such as other upper secondary grades and university students, should be investigated in further studies.

## **Conclusion**

This study aimed to investigate what strategies Thai students studying in Grade 11 used to decode English words and what problems the students had with decoding English words. The participants in the study consisted of 30 students in Grade at Bangnampriaowithaya School, the Secondary Educational Service Area Office 6. The data were collected during the second semester of the 2009 academic year, and two instruments were used: a questionnaire to investigate the decoding strategies used by the participants and a decoding test to examine the problems that the participants had with decoding English words. The findings of the study revealed that the participants had a variety of strategies for decoding English words, and all of the decoding strategies were used with a high degree of frequency. The findings of the study also showed that the participants who had problems with decoding were unable to decode even common English words in the decoding test. The inability of the participants to decode common English words may stem from their lack of knowledge of phonics, word structure, and the common patterns of English syllables. The findings indicate that such knowledge is of utmost importance when decoding English words, and teachers should realize the importance of teaching decoding strategies to their students, especially when they start to study English. Teachers should also be aware of students' decoding problems in order to help their students, and they need to place more emphasis on teaching decoding skills to the students, such as adding extra courses concerning decoding for both new students and remedial students, who may have struggled with decoding English words in the past. This suggests that further research into identifying the best decoding teaching strategies for students who have problems with decoding is necessary.



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# APPENDICES





**APPENDIX A**  
**The Questionnaire on Decoding Strategies**  
**(Thai version)**

### The Questionnaire on Decoding Strategies

Student Code: \_\_\_\_\_

Date: \_\_\_\_\_

วัตถุประสงค์ของแบบสอบถามนี้ เพื่อศึกษาพฤติกรรมการถอดคำในการอ่านออกเสียงภาษาอังกฤษที่นักเรียนใช้ แบบสอบถามประกอบด้วยข้อความ 27 ข้อความ ซึ่งเกี่ยวข้องกับพฤติกรรมการอ่านออกเสียงคำภาษาอังกฤษต่างๆ

คำชี้แจง ให้นักเรียนอ่านข้อความในแต่ละข้อซึ่งบรรยายถึงพฤติกรรมการถอดคำในการอ่านออกเสียงภาษาอังกฤษ และใส่เครื่องหมาย ✓ ในช่อง ‘ใช่’ หรือ ‘ไม่ใช่’ ให้ตรงกับพฤติกรรมการอ่านออกเสียงที่เป็นจริงของนักเรียน ถ้านักเรียนมีปัญหาหรือข้อสงสัย ให้ถามครู ได้ทันที

| ที่ | พฤติกรรมการถอดคำในการอ่านออกเสียงภาษาอังกฤษ                                                                                                                                                                                                                                                                                                                               | ใช่ | ไม่ใช่ |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------|
| 1   | ถ้าคำที่นักเรียนอ่านเป็นคำใหม่ นักเรียนจะอ่านโดยการแยกเสียงสระออกมาก่อน แล้วรวมเสียงพยัญชนะต้นเข้ากับเสียงสระ จากนั้นแยกเสียงพยัญชนะท้ายคำ แล้วจึงรวมทั้งสองส่วนเข้าด้วยกัน แล้วอ่านออกเสียงคำนั้นออกมา เช่น คำว่า dog นักเรียนแยกเสียงสระ /o/ ออกมาก่อน แล้วรวมกับเสียงพยัญชนะ /d/ เป็น /do/ ถัดจากนั้นแยกเสียงพยัญชนะ /g/ ออกมา และรวมทั้งสองส่วนเข้าด้วยกัน เป็น /dog/ |     |        |
| 2   | ถ้าคำที่อ่านเป็นคำใหม่ นักเรียนจะอ่านโดยใช้วิธีแยกคำออกเป็นสองส่วนคือส่วนหน้าสระและส่วนหลัง ซึ่งประกอบด้วยสระและตัวสะกด แล้วรวมทั้งสองส่วนเข้าด้วยกัน เช่น คำว่า hill นักเรียนแยกเป็น h- และ -ill แล้วรวมทั้งสองส่วนเข้าด้วยกัน หรือคำว่า black นักเรียนแยกเป็น bl- และ -ack แล้วรวมทั้งสองส่วนเข้าด้วยกัน                                                                |     |        |
| 3   | ในการอ่านคำบางคำ นักเรียนจะใช้ความรู้เรื่องการสร้างคำใหม่โดยการรวมคำเข้าด้วยกันมาช่วยในการอ่านคำนั้น เช่น คำว่า ladybug นักเรียนสังเกตได้ว่าคำนี้มาจากคำ lady และ bug นักเรียนจึงสามารถอ่านคำนี้ได้ โดยแยกคำออกเป็น lady และ bug                                                                                                                                          |     |        |

| ที่ | กลวิธีการถอดคำในการอ่านออกเสียงภาษาอังกฤษ                                                                                                                                                                                                                                                                                                                   | ใช่ | ไม่ใช่ |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------|
| 4   | ถ้าคำที่อ่านเป็นคำใหม่ นักเรียนจะใช้ความรู้เรื่องโครงสร้างคำ ได้แก่ ความรู้ในเรื่อง รากศัพท์ คำอุปสรรค และคำปัจจัย มาใช้แยกคำ แล้วรวมทุกส่วนเข้าด้วยกัน เพื่อจะได้อ่านคำนั้นได้ เช่น เมื่อนักเรียนพบคำว่า unfriendly นักเรียนแยกคำออกเป็น un-, friend และ -ly แล้วรวมทั้งสามส่วนเข้าด้วยกัน                                                                 |     |        |
| 5   | ถ้าคำที่นักเรียนอ่านเป็นคำใหม่ และนักเรียนสังเกตเห็นว่าคำๆ นั้นลงท้ายด้วยคำแสดงไวยากรณ์ต่างๆ เช่น -er, -est, -ing, -ed, -es นักเรียนจะใช้ความรู้นี้มาช่วยในการอ่านคำ เช่น นักเรียนจะอ่านคำว่า shorter โดยแยกคำเป็นคำคุณศัพท์ short และ คำแสดงขั้นกว่า -er                                                                                                   |     |        |
| 6   | ถ้าคำที่นักเรียนอ่านเป็นคำใหม่ที่มีหลายพยางค์ นักเรียนจะอ่านคำๆ นั้น โดยแบ่งคำออกเป็นพยางค์ๆ เช่น คำว่า carpenter นักเรียนจะแบ่งคำนี้ออกเป็นสามพยางค์ คือ car, pen, และ -ter                                                                                                                                                                                |     |        |
| 7   | คำบางคำเป็นคำที่นักเรียนพบบ่อย นักเรียนสามารถอ่านคำเหล่านี้ได้ทันทีโดยไม่ต้องเสียเวลาถอดคำ เช่น the, you, of, for, และ she                                                                                                                                                                                                                                  |     |        |
| 8   | ถ้านักเรียนพบคำใหม่ นักเรียนจะเปิดพจนานุกรมเพื่อดูว่าคำนั้นอ่านว่าอย่างไร                                                                                                                                                                                                                                                                                   |     |        |
| 9   | นักเรียนสามารถเดาคำอ่านของคำศัพท์ โดยอาศัยความรู้ไวยากรณ์ และข้อความอื่นๆ ในประโยค เช่น ประโยค The flowers are wilting now because of the heat. นักเรียนสามารถเดาคำอ่านของคำว่า wilting โดยสังเกตจากคำเชื่อม because of และคำศัพท์ heat ถ้านักเรียนเคยได้ยินหรือรู้จักคำนี้มาก่อน นักเรียนจะสามารถรู้ว่าคำนี้อ่านว่าอย่างไร เพราะนักเรียนรู้ความหมายนี้แล้ว |     |        |
| 10  | ถ้านักเรียนพบคำใหม่ นักเรียนจะแยกและผสมเสียงของแต่ละตัวอักษรให้เป็นคำ เช่น คำว่า ten นักเรียนแยกคำเป็น /t/ /e/ และ /n/ แล้วรวมเสียงเป็น /ten/                                                                                                                                                                                                               |     |        |
| 11  | เมื่อนักเรียนพบคำใหม่ นักเรียนจะแยกคำนั้นออกเป็นสองส่วน เพื่อให้นักเรียนจะได้อ่านคำนั้นได้ เช่น คำว่า jump นักเรียนแบ่งคำเป็น สองส่วน คือ j- และ -ump และรวมทั้งสองส่วนเข้าด้วยกัน                                                                                                                                                                          |     |        |

| ที่ | กลวิธีการถอดคำในการอ่านออกเสียงภาษาอังกฤษ                                                                                                                                                                                                                                                                                      | ใช่ | ไม่ใช่ |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------|
| 12  | ในการอ่านคำ นักเรียนนำความรู้เรื่องคำประสม (compound words) มาช่วย เช่น คำว่า homework นักเรียนแยกคำเป็น home และ work แล้วรวมทั้งสองส่วนเข้าด้วยกัน                                                                                                                                                                           |     |        |
| 13  | ถ้านักเรียนพบคำใหม่ นักเรียนจะพิจารณาว่าคำๆ นั้นประกอบด้วย รากศัพท์ คำอุปสรรค และคำปัจจัยหรือไม่ ถ้าใช่ นักเรียนจะอ่านคำๆ นั้นโดยแยกคำออกเป็นส่วนต่างๆ ดังกล่าว แล้วรวมทุกส่วนเข้าด้วยกัน เช่น คำว่า <i>prediction</i> นักเรียนแยกคำออกเป็น pre-, dict, และ -tion แล้วอ่านคำโดยรวมทั้งสามส่วนเข้าด้วยกัน                       |     |        |
| 14  | ถ้านักเรียนพบคำใหม่ นักเรียนจะใช้ความรู้เรื่องการเติมส่วนท้ายคำแล้วทำให้ความหมายของคำเปลี่ยนไปมาช่วยในการอ่านคำนั้น เช่น คำว่า <i>longest</i> นักเรียนจะใช้ความรู้ในเรื่องการเปรียบเทียบขั้นสูงสุด ในการแยกคำนั้นเป็น long และ -est แล้วรวมทั้งสองส่วนด้วยกัน                                                                  |     |        |
| 15  | ถ้าคำในบทอ่านเป็นคำใหม่และเป็นคำยาวๆ นักเรียนจะใช้ความรู้เรื่องการแบ่งคำ โดยนึกถึงคำที่มีส่วนเหมือนกับส่วนหนึ่งของคำหลายพยางค์นั้น มาช่วยในการอ่าน เช่น คำว่า <i>microscope</i> นักเรียนจะนึกถึงคำว่า micro และ scope แล้วก็สามารถอ่านคำ <i>microscope</i> ได้                                                                 |     |        |
| 16  | คำบางคำเป็นคำที่ไม่สามารถอ่านตามกฎการถอดคำได้ นักเรียนจะใช้วิธีจำว่าคำเหล่านี้อ่านอย่างไร เช่น คำว่า <i>who</i> อ่านว่า ‘ฮู’ และ <i>when</i> อ่านว่า ‘เวน’ เพราะพยัญชนะ <wh> สามารถออกเสียงเป็น ‘ฮ’ หรือ ‘ว’ ก็ได้ หรือ <i>rough</i> อ่านว่า ‘ร๊ฟ’ และ <i>through</i> อ่านว่า ‘ทรู’ เพราะพยัญชนะ <gh> ไม่ออกเสียงตามกฎการถอดคำ |     |        |
| 17  | นักเรียนจะเปิดพจนานุกรมเสมอๆ เพื่อหาคำอ่านของคำที่นักเรียนไม่สามารถอ่านได้                                                                                                                                                                                                                                                     |     |        |

| ที่ | กลวิธีการถอดคำในการอ่านออกเสียงภาษาอังกฤษ                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ใช่ | ไม่ใช่ |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------|
| 18  | ข้อความในประโยคและไวยากรณ์ต่างๆ สามารถนำมาใช้ในการอ่านคำได้ เช่น ในประโยค <i>If students study hard, they will pass the final examination.</i> นักเรียนจะสามารถอ่านคำว่า <i>pass</i> ได้ โดยดูจากข้อความ <i>If students study hard</i> และ <i>the final examination</i> ก็จะทราบว่า <i>pass</i> เป็นคำกริยา และน่าจะแปลว่าผ่าน ดังนั้นนักเรียนจะสามารถอ่านคำนี้ได้ เพราะนักเรียนรู้มาก่อนว่าคำ ผ่าน ตรงกับคำภาษาอังกฤษที่อ่านว่า ‘พาส’ ดังนั้นนักเรียนจึงเดาได้ว่า <i>pass</i> น่าจะอ่านว่าอย่างไร |     |        |
| 19  | ถ้าคำที่นักเรียนอ่านเป็นคำใหม่ นักเรียนจะถอดเสียงของแต่ละตัวอักษร แล้วผสมเป็นคำโดยใช้เสียงของแต่ละตัวอักษรเข้าด้วยกัน เช่น ในการอ่าน คำว่า <i>bus</i> นักเรียนถอดเสียงของแต่ละตัวอักษรมาเป็น b = บ, u = อะ, s = ส แล้วรวมทั้งสามเสียงเข้าด้วยกันและอ่านออกเสียงเป็น ‘บัส’                                                                                                                                                                                                                          |     |        |
| 20  | ถ้าคำที่นักเรียนอ่านเป็นคำใหม่ นักเรียนใช้รูปแบบการสะกดคำแบบที่นักเรียนพบเห็นอยู่เสมอมาช่วยในการถอดคำ เช่น นักเรียนสามารถอ่านคำที่ส่วนท้ายประกอบด้วย -ite เช่น คำว่า <i>bite</i> เมื่อพบคำที่ส่วนท้ายคือ -ite เหมือนกัน นักเรียนก็จะสามารถอ่านคำเหล่านั้นได้เช่นเดียวกัน เช่น <i>kite, site</i>                                                                                                                                                                                                    |     |        |
| 21  | คำที่มีหลายพยางค์บางคำ นักเรียนสังเกตได้ว่าคำๆ นั้นประกอบด้วยคำที่นักเรียนรู้จักแล้ว นักเรียนจะอ่านคำๆ นั้นโดยแยกเป็นคำย่อยแต่ละคำ เช่น คำว่า <i>starfish</i> นักเรียนจะแยกคำนี้เป็น <i>star</i> และ <i>fish</i>                                                                                                                                                                                                                                                                                   |     |        |
| 22  | ความรู้เรื่องรากศัพท์ คำอุปสรรค และคำปัจจัย มีส่วนช่วยในการอ่านคำที่นักเรียนไม่รู้จัก และเป็นคำหลายพยางค์ เช่น คำว่า <i>supermarket</i> นักเรียนแยกคำออกเป็น <i>super-</i> และ <i>market</i> แล้วรวมทั้งสองส่วนเข้าด้วยกัน                                                                                                                                                                                                                                                                         |     |        |
| 23  | นักเรียนสามารถแยกคำออกเป็นส่วนๆ ได้ เพราะนักเรียนเข้าใจว่าคำบางคำประกอบขึ้นมาจากการเติมส่วนท้ายคำที่แสดงความหมายทางไวยากรณ์ เช่น -er, -est, -ing, -ed, -es นักเรียนสามารถใช้ความรู้นี้มาช่วยในการอ่านคำ เช่น นักเรียนอ่านคำว่า <i>working</i> โดยแยกเป็น <i>work</i> และ -ing หรือคำว่า <i>played</i> โดยแยกเป็น <i>play</i> และ -ed                                                                                                                                                               |     |        |

| ที่ | กลวิธีการถอดคำในการอ่านออกเสียงภาษาอังกฤษ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ใช่ | ไม่ใช่ |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------|
| 24  | การอ่านคำที่ยาวเพราะมีหลายพยางค์ นักเรียนจะนึกถึงรูปแบบพยางค์ที่นักเรียนพบอยู่เสมอและแบ่งคำออกเป็นพยางค์ตามรูปแบบพยางค์ เช่น คำ <i>bicycle, moment, หรือ candle</i> นักเรียนจะแบ่งคำเหล่านี้ออกเป็น <i>bi-cycle, mo-moment และ can-dle</i>                                                                                                                                                                                                                                                                                    |     |        |
| 25  | นักเรียนสามารถอ่านคำว่า <i>like, him, he, from, และ as</i> ได้ทันที โดยไม่ต้องแยกเสียงสระและเสียงพยัญชนะ เพราะนักเรียนพบคำเหล่านี้เสมอจนกระทั่งจำได้ว่าอ่านว่าอย่างไร                                                                                                                                                                                                                                                                                                                                                         |     |        |
| 26  | ประโยชน์อีกอย่างหนึ่งของพจนานุกรม นอกจากช่วยบอกความหมายของคำแล้ว ยังช่วยบอกวิธีอ่านคำ เพราะฉะนั้นนักเรียนจึงใช้พจนานุกรมเพื่อหาคำอ่านของคำที่นักเรียนอ่านไม่ถูกได้                                                                                                                                                                                                                                                                                                                                                            |     |        |
| 27  | ความรู้ทางไวยากรณ์ และการสังเกตข้อความแวดล้อมคำที่นักเรียนไม่รู้จักในประโยค ช่วยให้นักเรียนสามารถเดาคำอ่านของคำนั้นได้ เช่น ประโยค <i>I bought many kinds of flowers such as roses, tulips, lilies, and carnations.</i> นักเรียนสามารถจะอ่านคำว่า <i>flowers</i> ได้ โดยดูจากคำว่า <i>such as</i> ก็จะทราบว่า <i>roses, tulips, lilies, and carnations</i> คือตัวอย่างของ <i>flowers</i> และอาศัยความรู้ทางไวยากรณ์ทำให้ทราบว่า <i>flower</i> เป็นคำนาม ดังนั้นนักเรียนจึงทราบความหมายของ <i>flower</i> และสามารถอ่านคำนี้ได้ |     |        |



**APPENDIX B**

**The Questionnaire on Decoding Strategies**

**(English version)**

### The Questionnaire on Decoding Strategies

Student Code: \_\_\_\_\_

Date: \_\_\_\_\_

The objective of questionnaire is to investigate decoding strategies used by the students. The decoding questionnaire consists of 27 statements that concerning with decoding strategies.

Directions: Please read each statement and check (✓) in the blank that describes your decoding strategies. If you have any question, let the teacher know immediately.

The criteria for the actions are as follows:

Yes = You use the strategy that is described in the statement.

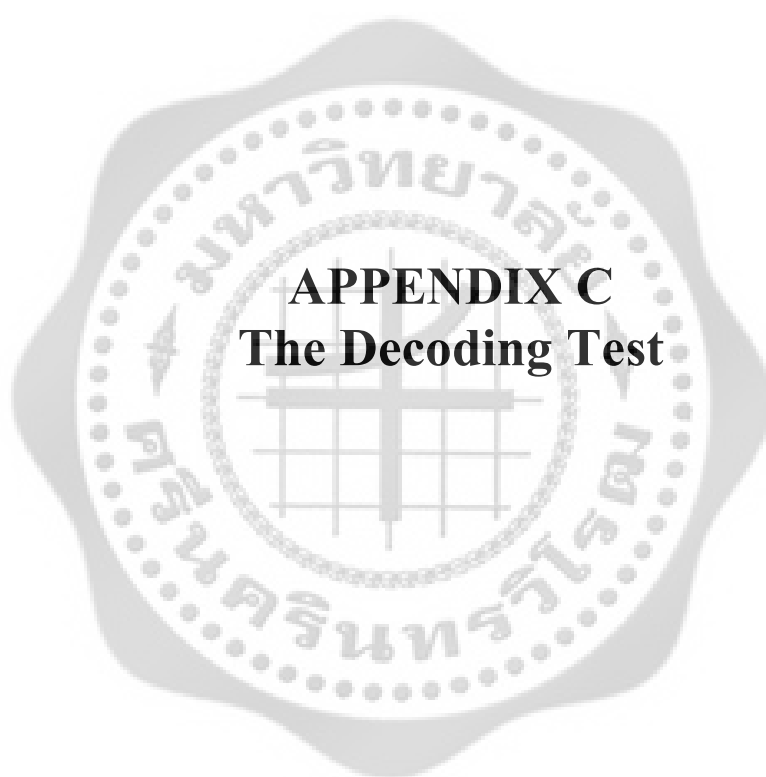
No = You do not use the strategy that is described in the statement.

| No. | Decoding Strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Yes | No |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 1   | If a word in the passage is new to you, you determine and isolate the vowel sound in the word, then blend all of the consonant sound in front of the vowel sound with the vowel sound, next isolate the consonant sound after the vowel sound, and finally blend two parts of the word together so the word can be identified. For example, If you see the word <i>dog</i> you determine and isolate /o/, then blend /d/ and /o/, next isolate /g/, finally blend /do/ and /g/.                                                                                              |     |    |
| 2   | If a word in the passage is unknown (a new) to you, you use common spelling patterns to decode it by segmenting the word between the onset and the rime and then blending them to make the word ( <i>hill</i> ). For example, you segment the word <i>hill</i> between the onset (/h/ in the word <i>hill</i> ) and the rime (-ill) and then blending them to make the word ( <i>hill</i> ). Another example, you segment the word <i>back</i> between the onset (/b/ in the word <i>back</i> ) and the rime (-ack) and then blending them to make the word ( <i>back</i> ). |     |    |
| 3   | If a word in the passage is unknown (a new) to you, you use knowledge of compound words to decode it. For example, when you see the word <i>ladybug</i> , you segment it into /lady/ and /bug/ and then blend them together.                                                                                                                                                                                                                                                                                                                                                 |     |    |
| 4   | If a word in the passage is new to you, you use the knowledge of word structures such as roots, prefixes, and suffixes to segment it into root, prefix, and suffix, and then blend them together. For example, when you see the word <i>unfriendly</i> , you segment it into /un/, /friend/, and /ly/ and then blend them together.                                                                                                                                                                                                                                          |     |    |

| No. | Decoding Strategies                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes | No |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 5   | If a word in the passage is new to you, it ends with suffixes such as –er, -est, -ing, -ed, and es. You use such knowledge to help decode a word. For example, when you see the word <i>shorter</i> , you segment it into adjective /short/ and comparative form /-er/.                                                                                                                                                                            |     |    |
| 6   | If a word in the passage is polysyllabic word, you segment it into syllables. For example, when you see the word <i>carpenter</i> , you segment it into three syllables: /car/, /pen/, and /-ter.                                                                                                                                                                                                                                                  |     |    |
| 7   | Although you see many unknown words in a passage, you can read the words <i>the</i> , <i>you</i> , <i>of</i> , <i>for</i> , and <i>she</i> immediately because you see them frequently in other passages.                                                                                                                                                                                                                                          |     |    |
| 8   | If you see an unknown word in your reading, you will consult dictionary how to it is pronounced.                                                                                                                                                                                                                                                                                                                                                   |     |    |
| 9   | If a word in the passage is new to you, you use the knowledge of grammar and context clues to guess the pronunciation of the word. For example, in the sentence <i>The flowers are wilting now because of the heat</i> . You decode the word <i>wilting</i> by seeing conjunction <i>because of</i> and the word <i>heat</i> . You will know its meaning. If you can hear this word before, you will know what it is because you know its meaning. |     |    |
| 10  | If you encounter an unknown word, you segment and blend letter-sound correspondences into words. For example, if you see the word <i>ten</i> in the reading passage, you segment it into /t/, /e/, and /n/ and then blend them into /ten/.                                                                                                                                                                                                         |     |    |
| 11  | If a word in the passage is unknown (a new) to you, you segment the word into two parts: the onset and the rime and then blending them to make the word. For example, you segment the word <i>jump</i> between the onset (/j/ in the word <i>jump</i> ) and the rime (-ump) and then blending them to make the word ( <i>jump</i> ).                                                                                                               |     |    |
| 12  | If a word in the passage is unknown (a new) to you, you use knowledge of compound words to decode it. For example, when you see the word <i>homework</i> , you segment it into /home/ and /work/ and then blend them together.                                                                                                                                                                                                                     |     |    |
| 13  | If a word in the passage is new to you, you use the knowledge of word structures such as roots, prefixes, and suffixes to segment it into root, prefix, and suffix, and then blend them together. For example, when you see the word <i>prediction</i> , you segment it into /pre-/, /dict/, and /-tion/ and then blend them together.                                                                                                             |     |    |
| 14  | If you find an unknown word in your reading, you use the knowledge of inflectional endings. For example, when you see the word <i>longest</i> , you use the knowledge of superlative form to divide it into two parts: /long/ and /est/ and then blend two parts together.                                                                                                                                                                         |     |    |

| No. | Decoding Strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yes | No |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 15  | If a word in the passage is new and long to you, you separate it by recognizing similar word. For example, when you see <i>microscope</i> in the passage, you recognize <i>micro</i> and <i>scope</i> and then your reread <i>microscope</i> again.                                                                                                                                                                                                                                         |     |    |
| 16  | If some words cannot use the common decoding rule, you recognize how to pronounce those words. For example, the word <i>who</i> is pronounced /hu:/ and the word <i>when</i> is pronounced /wen/ because digraph <w> can pronounce both /h/ and /w/. Another example, the word <i>rough</i> pronounce to /rʌf/ and the word <i>through</i> pronounce /θu:/ because digraph <gh> do not pronounce the common decoding rule.                                                                  |     |    |
| 17  | You will always consult dictionary when you cannot decode an unknown word.                                                                                                                                                                                                                                                                                                                                                                                                                  |     |    |
| 18  | Knowledge of context clues and grammar can use to help you decode a word. For example, in the sentence, “If students study hard, they will pass the final examination,” you use the meaning of the phrase <i>If students study hard</i> and <i>the final examination</i> in the sentence to know that the word <i>pass</i> is a verb and guess the meaning of the word <i>pass</i> because you know the word <i>pass</i> means ‘ผ่าน’. Therefore, you can know how this word is pronounced. |     |    |
| 19  | If a word in the passage is new to you, you decode it by segmenting and blending them individual sounds. For example, if the word <i>bus</i> is new to you, you segment it into individual sounds /b/, /u/, and /s/, and then blend them together.                                                                                                                                                                                                                                          |     |    |
| 20  | If a word in the passage is unknown (a new) to you, you use common spelling patterns to decode it. For example, you can decode the word <i>bite</i> that ends with -ite. When you see the word <i>kite</i> , you can decode it because this word also ends with -ite.                                                                                                                                                                                                                       |     |    |
| 21  | If you see a polysyllabic word, you use the knowledge of compound word to segment it into each word and then blend them together. For example, when you see the word <i>starfish</i> , you segment it into /star/ and /fish/ and then blend them together.                                                                                                                                                                                                                                  |     |    |
| 22  | If a word in the passage is a polysyllabic word and new to you, you use the knowledge of word structures such as roots, prefixes, and suffixes to segment it into root, prefix, and suffix, and then blend them together. For example, when you see the word <i>supermarket</i> , you segment it into /super/ and /market/ and then blend them together.                                                                                                                                    |     |    |

| No. | Decoding Strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Yes | No |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 23  | You can segment a polysyllabic word because you have knowledge of suffixes such as –er, -est, -ing, -ed, and es. You use such knowledge to help decode anew word. For example, when you see the word <i>working</i> , you segment it into /work/ and /-ing/.                                                                                                                                                                                                                                                 |     |    |
| 24  | If you see a polysyllabic word in the passage, you use common spelling patterns to decode it by segmenting the word into each common spelling pattern. For example, you segment the word bicycle, moment, and candle into bi-cy-cle, mo-ment, and can-dle.                                                                                                                                                                                                                                                   |     |    |
| 25  | You can read the words <i>like</i> , <i>him</i> , <i>he</i> , <i>from</i> , and <i>as</i> immediately because you see these words frequently and can remember how these words are pronounce.                                                                                                                                                                                                                                                                                                                 |     |    |
| 26  | Another usefulness of dictionary, apart from telling the meaning of words, dictionary is to tell the way to pronounce. Therefore, you consult dictionary when you cannot decode an unknown word.                                                                                                                                                                                                                                                                                                             |     |    |
| 27  | If a word in the passage is new to you, you use the knowledge of grammar and context clues to decode the word. For example, in the sentence <i>I bought many kinds of flowers such as roses, tulips, lilies, and carnations</i> . You can decode the word <i>flowers</i> because you see the word <i>such as</i> , you will know that the words <i>roses, tulips, lilies, and carnations</i> are the examples of flowers. You also use the knowledge of grammar, and then you will know this word is a verb. |     |    |



### The Decoding Test

Student Code: \_\_\_\_\_

Date: \_\_\_\_\_

วัตถุประสงค์ของแบบสอบถามนี้ เพื่อตรวจสอบปัญหาในการอ่านออกเสียงคำภาษาอังกฤษของนักเรียน  
แบบทดสอบประกอบด้วยคำ 109 คำ

คำชี้แจง ให้นักเรียนอ่านออกเสียงคำภาษาอังกฤษ

| No. | Words      | Accuracy of Decoding |           | No. | Words    | Accuracy of Decoding |           |
|-----|------------|----------------------|-----------|-----|----------|----------------------|-----------|
|     |            | Correct              | Incorrect |     |          | Correct              | Incorrect |
| 1   | as         |                      |           | 56  | peel     |                      |           |
| 2   | back       |                      |           | 57  | per      |                      |           |
| 3   | bigger     |                      |           | 58  | phone    |                      |           |
| 4   | blue       |                      |           | 59  | pink     |                      |           |
| 5   | bought     |                      |           | 60  | place    |                      |           |
| 6   | brown      |                      |           | 61  | played   |                      |           |
| 7   | bus        |                      |           | 62  | prince   |                      |           |
| 8   | buses      |                      |           | 63  | quick    |                      |           |
| 9   | buzz       |                      |           | 64  | rag      |                      |           |
| 10  | candle     |                      |           | 65  | rough    |                      |           |
| 11  | chance     |                      |           | 66  | salt     |                      |           |
| 12  | chaos      |                      |           | 67  | scene    |                      |           |
| 13  | charter    |                      |           | 68  | school   |                      |           |
| 14  | clock      |                      |           | 69  | score    |                      |           |
| 15  | colorful   |                      |           | 70  | scream   |                      |           |
| 16  | compete    |                      |           | 71  | self     |                      |           |
| 17  | crow       |                      |           | 72  | shed     |                      |           |
| 18  | dear       |                      |           | 73  | should   |                      |           |
| 19  | drink      |                      |           | 74  | sift     |                      |           |
| 20  | drinks     |                      |           | 75  | sky      |                      |           |
| 21  | fact       |                      |           | 76  | slide    |                      |           |
| 22  | far        |                      |           | 77  | smoke    |                      |           |
| 23  | fastest    |                      |           | 78  | snake    |                      |           |
| 24  | film       |                      |           | 79  | sock     |                      |           |
| 25  | fishing    |                      |           | 80  | solve    |                      |           |
| 26  | fly        |                      |           | 81  | south    |                      |           |
| 27  | fox        |                      |           | 82  | spot     |                      |           |
| 28  | friend     |                      |           | 83  | star     |                      |           |
| 29  | friendless |                      |           | 84  | starfish |                      |           |

| No. | Words    | Accuracy of Decoding |           | No. | Words      | Accuracy of Decoding |           |
|-----|----------|----------------------|-----------|-----|------------|----------------------|-----------|
|     |          | Correct              | Incorrect |     |            | Correct              | Incorrect |
| 30  | friendly |                      |           | 85  | street     |                      |           |
| 31  | friends  |                      |           | 86  | svelte     |                      |           |
| 32  | frog     |                      |           | 87  | swim       |                      |           |
| 33  | gay      |                      |           | 88  | television |                      |           |
| 34  | glove    |                      |           | 89  | through    |                      |           |
| 35  | gnat     |                      |           | 90  | thumb      |                      |           |
| 36  | grasp    |                      |           | 91  | tiger      |                      |           |
| 37  | gym      |                      |           | 92  | told       |                      |           |
| 38  | help     |                      |           | 93  | trainer    |                      |           |
| 39  | her      |                      |           | 94  | trust      |                      |           |
| 40  | horse    |                      |           | 95  | unhappy    |                      |           |
| 41  | hostel   |                      |           | 96  | use        |                      |           |
| 42  | jump     |                      |           | 97  | vent       |                      |           |
| 43  | know     |                      |           | 98  | walked     |                      |           |
| 44  | law      |                      |           | 99  | wanted     |                      |           |
| 45  | ledge    |                      |           | 100 | wash       |                      |           |
| 46  | like     |                      |           | 101 | watch      |                      |           |
| 47  | load     |                      |           | 102 | what       |                      |           |
| 48  | lunch    |                      |           | 103 | when       |                      |           |
| 49  | milk     |                      |           | 104 | where      |                      |           |
| 50  | noise    |                      |           | 105 | who        |                      |           |
| 51  | of       |                      |           | 106 | wrong      |                      |           |
| 52  | old      |                      |           | 107 | yet        |                      |           |
| 53  | page     |                      |           | 108 | you        |                      |           |
| 54  | pain     |                      |           | 109 | zoo        |                      |           |
| 55  | pea      |                      |           |     |            |                      |           |



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