

English Word Pronunciation of Thai High School Students

*Patthamaporn Boodsee & Atipat Boonmoh
King Mongkut's University of Technology Thonburi*

Abstract

English language teaching in Thai schools tends to focus on assessment or examination (Goodman, 2017). Exam contents often include and focus on: reading comprehension, grammar and writing. These aspects are frequently emphasized in class. On the other hand, listening and speaking – including pronunciation – are taught less. Having less opportunity to practice speaking, listening, and pronunciation may hinder students' speaking, listening, and pronunciation skills development. *“In order to speak and listen effectively, pronunciation is the basic element that should be taught”* (Mantali, 2006). The lack of focus on pronunciation can lead to errors in pronouncing English words, because students are not proficient or face unfamiliar grapheme-phoneme correspondences (GPC). This study aims to investigate the pronunciation of English words among Thai high school students. It strives examines whether pronunciation in isolation is the same or different from that found in reading a passage. Reasoning for their pronunciation was also investigated. Ten high school students of low proficiency levels participated in the study. They were asked to read a passage which contained 15 target words, then read the target words again, but in isolation. Pronunciation was recorded both by audio and then also transcribed. Semi-structured interviews were implemented to analyze how students pronounce English words, and indeed their reasoning for doing so. The findings revealed that students' pronunciation from the passage and in isolation differed. Findings from the pronunciation form showed problems in GPC, especially in final positions. Moreover, the data from the semi-structured interviews revealed four underlying reasonings for pronunciations. On the basis of these findings, the pedagogical implications are included in this paper.

Keywords: English Word, pronunciation, Thai

1. Introduction

English has been adopted as a lingua franca among non-native speakers in many social contexts. In Thailand, English language is nationally recognized as a compulsory subject (The Basic Education Core Curriculum B.E. 2551 (A.D. 2008) at all educational levels. English as a means of communication influences the use of English (Khamkhien, 2010). Thai students must study English throughout their academic lives. However, their ability to speak English is rather poor due to affective, linguistic and socio-cultural factors (Tananuraksakul, 2017) as they tend to have high anxiety and negative attitudes toward speaking English (Toomnam & Intaraprasert, 2015).

When examining curriculum or teaching objectives, focus tends to be placed on examinations, grammatical knowledge, reading comprehension and writing. Little focus is placed on the teaching of speaking and listening. And as a consequence, pronunciation is either not emphasized or even neglected. The minor role of pronunciation is also reflected in language assessment, as pronunciation is not one of the constructs for the national tests or university entrance examinations in Thailand (Kanoksilapatham, 2014). Students, on the other hand, have to spend much of their time in tutoring sessions for grammar, reading comprehension, or writing, in order to increase their Ordinary National Educational Test (O-NET) scores (Goodman, 2017).

For this reason, Thai students may have less opportunity to speak, read aloud, or pronounce words correctly. Less opportunity for such practice may result in neglect of developing students' speaking, listening, and pronunciation skills, indeed according to (Akyol, 2012) pronunciation can lead to unsuccessful communication. These pronunciations errors may be related to unfamiliarity between letter and sound in students' L1 and L2. When target words are presented to students, the target words are sometimes not pronounced as they should be pronounced. This can happen when ELT in Thailand focus is placed on proper pronunciation, or when students directly substitute English and Thai grapheme-phoneme correspondences (GPC). For mistakes in pronunciation, there are three underlying causes of the occurrences found, which are 1) learners' wrong pronunciation; the differences between the L1 and L2 consonant sound systems; and the differences between GPC in L1 and L2 (Naruemon, 2012).

In this section, some important points are described such as the importance of pronunciation, the effects of pronunciation on communication, English GPC, and Selected Studies on English GPC and other languages.

1.1 Importance of pronunciation

Pronunciation has been referred to as a "Cinderella area" in foreign language learning. It has been neglected in language classes (Kelly, 1969). However, one of the requirements for learner proficiency is to possess understandable or proper pronunciation for successful language learning. Still, pronunciation has been less taught in class at present. As a result, many language learners are unable to coherently pronounce words. As stated by (Mantali, 2006) almost all of the beginner English learners, proper pronouncing words, phrases, or sentences should be taught as it is one of the key features of language proficiency. For language learners, to be able to pronounce words acceptably can be related to successful communication (Akyol, 2012).

1.2 Effects of pronunciation on communication

Gilakjani (2012) stated that learners with incorrect pronunciation may be judged as incompetent, therefore, pronunciation in class is necessary in terms of improving clear pronunciation for the target of effective communication. A study by Khamkhien (2010) revealed that Thai undergraduate students had limited competence in English pronunciation and the study suggested that they needed to pay more attention to the importance of pronunciation features. This suggestion correlates with findings by Wei and Zhou (2002) that teaching pronunciation is often neglected in a Thai classroom as teachers were not confident enough with their own pronunciation. Kelly (2000) showed the role of proper pronunciation; when a learner says “soap” where they should have said “soup”, the mispronunciation of a word can lead to misunderstanding. Subsequently, a learner who mispronounces a range of phonemes can lead to difficulties for a listener from another language community.

1.3 English GPC

English pronunciation may pose a problem for Thai EFL learners because of differences of Grapheme-Phoneme correspondence (GPC) between English and Thai. GPC refers to a correlation from spelling of letters to sounds. A letter in written form is related to phonemic units of the language (Gibson, Osser, & Pick, 1963). English does not always have a one-to-one GPC, but English graphemes can sometimes represent more than one phoneme. This often leads to difficulties when Thai learners speak, read, or write in English. A study by Brooks (2015) provides an extensive list to illustrate the English GPC beginning with consonant and vowel letters. There are major and minor correspondences for consonant graphemes, as can be seen in Table 1.

Table 1 The GPC of British English spelling: Major and minor correspondences for consonant and vowel graphemes (Brooks, 2015)

	Consonant Grapheme(s)	Phonemes(s)	
		Basic	Other
Major	b, bb	/b/ bed, rabbit	
	c	/k/ come	/s/ city
	ce	/s/ once	
	ed	/d/ called	/t/ looked
	f, ff	/f/ from, off	
	g	/g/ get	/dʒ/ giant
	n	/n/ now	/ŋ/ sink
	s, se	/s/ sit, is	/z/ please
	t, tt	/t/ but, little	
	th	/θ/ thing	/ð/ that
	u	/w/ queen	
	v, ve	/v/ very, have	
Minor	cu	/k/ biscuit	
	t	/tʃ/ nature, picture	
	the	/ð/ breathe	

	Vowel Grapheme (s)	Phonemes(s)	
		Basic	Other
Major	a	/æ/ and	/eɪ/ bacon, /ɑː/ ask, /ɒ/ was, /ɔː/ all, /ə/ about
	a-e ai ay	/eɪ/ came, paint, day	
	e	/e/ went	/iː/ he, /ɪ/ England, /ə/ the
	er	/ɜː/ her	/ɪə/ hero, /ə/ butter
	i	/ɪ/ is	/aɪ/ I
	ir	/ɜː/ girl	
	o	/ɒ/ not	/ʌ/ some, /əʊ/ so, /ə/ button
	o.e	/əʊ/ bone	
	oo	/uː/ too	/ʊ/ book
	ou	/aʊ/ out	
	u	/ʌ/ but	/ʊ/ put, /uː/ super
	ur	/ɜː/ fur	
y	/aɪ/ my	/ɪ/ gym, /iː/ city	
Minor	ai ay	/e/ again(st), said, says	
	i	/ə/ possible	
	ir ire	/aɪə/ biro, fire, wire	
	ough	/əʊ/ although, /uː/ through, /ɔː/ thought	
	u	/ɪ/ business, minute	
ure	/ə/ nature, picture		

***Major correspondence** refers to graphemes that represent only one phoneme each (basic), and other frequent phonemes (other).

***Minor correspondence** describes less or infrequent phonemes.

Since English language does not have one-to-one writing (grapheme) and pronunciation (phoneme) correspondence, Zhang et al. (2015) attempted to find the current relationship between the writing and pronunciation systems from a computer-readable pronouncing dictionary (NTC2). The English graphemes and their pronunciation were presented by a serial correspondence as in ‘thesis’, with graphemes <th,e,s,i,s>, and its pronunciation is /θ,iː,s,I,s/. The first ‘th’ corresponds to the phoneme /θ/, while the grapheme ‘e’ represents /iː/, and so on. Apart from a serial correspondence, an absent grapheme (an existence of an absent grapheme represented by “--”) as in McCoy, which can be transcribed as, M,--,cc,o,y>, and the silent morphophoneme that occurs when the grapheme is not pronounced, as with <w> in the word ‘two’. From the NTC2 pronunciation dictionary, the number of graphemes (132 graphemes) represents 366 sound units in total.

1.4 *Selected studies on English GPC and other languages*

Marinelli et al. (2015) examined the spelling acquisition of upper primary school students, comparing the Italian language (a consistent orthography) and the English language (an inconsistent orthography). The participants comprised of 207 Italian and 79 English children. The materials used to assess students' performance were two lists of prompts for each language containing regular GPC and irregular words related to infrequent GPC, or graphemes that were spelt differently. The result of the study showed that after two years of schooling, Italian children could spell Italian accurately, while English children still had English spelling problems after five years. This showed that cross-linguistic differences in spelling accuracy proved to be more persistent than the language with many corresponding ones. Moreover, the orthographic consistency of the Italian language helped Italian children to produce difference of pronunciation stemming from consistent Italian pronunciation structure with frequency and regularity effects.

In a similar vein, the findings in Lee et al. (2013) correspond with a study by Marinelli et al. (2015) which shows that inconsistent GPC could create more pronunciation problems than that of consistent GPC. In their study, Lee et al. analyzed word structures in Malay and English storybooks to develop a reading intervention program for struggling early Malay readers and in order to have a better understanding of Malay word structures together with a cross-linguistic comparison with English. The results from the two source texts indicated significant cross-language differences for Malay and English words in terms of GPC, syllabic structure and types of inflectional morphemes. Focusing on GPCs, it showed that there are more words in English with inconsistent grapheme-phoneme correspondences as compared to Malay, and the variation between the number of graphemes and phonemes of a word varies more in English.

When examining learners of different nationalities, a study by Nogita (2010) investigated to what extent Japanese English as additional language (EAL) learners have mastered default grapheme-phoneme correspondence (GPC) patterns of North American English vowels. Of 83 participants, 45 were Japanese EAL learners, while the rest were either Chinese EAL learners or native Canadian English speakers. The investigation showed that English vowel grapheme-phoneme mapping patterns (sound unit correspondence) of Japanese participants were quite different from those of the native English-speaking participants. Moreover, some correspondences were made very well in both grapheme-to-phoneme and phoneme-to-grapheme directions because of the similarities between the English GPC and the standardized Japanese romanization GPC. These findings could support the idea that the more similar the GPC between two languages; the less likely it will be for problems to arise when learners attempt to pronounce words correctly.

When focusing on Thai context, Richards (1967) conducted a study to describe pronunciation features of 15 Thai speakers of English in New Zealand taking a pre-university English course. The observation was on regular pronunciation features and consistent patterns of sound replacement. From the observation, the major source of pronunciation difficulty was the interference of different phonetic representations of corresponding phonemes in English and Thai. Thai students also used allophonic replacements as a strategy for English phoneme production, for example: vowel substitution in 'hot'. The word 'hot' as /hɒt/ became /hɔ:t/ because the allophone of Thai,

/o/, was substituted. For consonants, /v/, when this occurred, became /w/ through the substitution of the allophone of Thai, /w/. Another study by Wei and Zhou (2002) investigated some important English pronunciation problems of Thai students. During their six years of Oral English teaching in Thailand, they found pronunciation problems with words ending with consonants and vowels, e.g. book, large, or knife. For letter-sound correlations, the Thai students mispronounced or misread words; for instance, in 'tail', /ei/ was pronounced as /e/; in 'Jerry', /r/ as /l/; in 'feather', 'th' was spoken as /s/; and in 'stove', /v/ was pronounced as /f/. Indeed, both studies revealed that Thai learners of English had pronunciation problems resulting from differences between English and Thai GPC.

Moreover, further studies that attempted different strategies to improve English pronunciation can be found by Ladkert (2009) and Wixey and Eamoraphan (2017). The former conducted a study to develop English pronunciation by phonics in order to teach GPC for reading or spelling words. 20 Thai university students majoring in English took a pretest by reading a 30-word list aloud. Then, they were taught pronunciation with a phonics approach through 10 exercises. After that, they were asked to read aloud the same word list as a posttest. The phonics instructional effectiveness was 90.57/86.47, higher than the criteria set at 80/80. In this case, the approach facilitated both the learners' letter-sound correspondences and their overall reading and spelling skills. The latter, investigated spelling attainment along with ability to recognize sounds in words and ability to manipulate information in memory among 114 grade 1 students at a Thai Christian school. The instruments which related to GPC were Phoneme Segmentation Fluency (PSF) for phonemic awareness assessment and the Primary Spelling Inventory (PSI). The study found that there were significant positive relationships between phonemic awareness, verbal short-term memory, and working memory with spelling achievement. Importantly, researchers recommended that phonemic awareness should be taught as preparation for students' further practice in early spelling features, especially for final consonants and short vowels. Moreover, letter-sound knowledge should be measured in order to improve spelling achievement.

The selected studies highlight a key argument regarding English GPC with that of other languages. English graphemes are relatively inconsistent where one grapheme can correspond to many phonemes. Non-native speakers thus face the problem of matching English graphemes with their corresponding sounds, a problem most notable in their attempts at pronunciation. That is, a given word is pronounced differently by many students. This can also be seen in research studies that analyze Thai students' pronunciation problems. Some studies have attempted to improve pronunciation through phonemic methods and suggestions for teachers. However, the focus of the previous studies has been more on producing the sounds of words rather than grapheme-phoneme correspondence. Therefore, this research is needed in order to find out high school students' pronunciation ability, their knowledge of GPC, and underlying reasonings that students use to determine pronunciation, in order to prepare appropriate lessons or methods for teaching pronunciation as a basis for speaking.

2 Aim

This study, aims to investigate the pronunciation of English words among high - school students so that appropriate designs of teaching lessons or methods can be developed for teaching pronunciation as a basis for speaking. Thus, the purposes of this study are 1) to examine high school students' pronunciation both in isolation and in a reading passage; and 2) to investigate students' reasonings in their pronunciation of English words.

3 Research questions

There were two research questions in this study which investigated the pronunciation of English words among high school students so that appropriate designs of teaching lessons or methods can be developed for teaching pronunciation .Thus, the research questions of this study are: whether

- pronunciation of words in isolation is the same or different from pronunciation in reading texts?; and
- What are students' reasonings in pronouncing English words.

4 Methodology

4.1 Participants

The participants of this study were 10 high school students (Grade 12) from a public school in Pathumthani, Thailand. These students were selected from a cohort of 246 high school students from seven sections. Two criteria for choosing the participants were: 1) they must have cumulative GPA of English subject below 2.5 in order to study ability and reasons they pronounce English word; and 2) they were willing to participate in the study. Forty-nine students met the first criteria, and of those, 10 agreed to participate in the study. Of these, four were male and six were female. Their ages ranged from 18 to 19 years old.

4.2 Instruments

Two research instruments were implemented in this study: an audio recording and pronunciation record along with a semi structured interview. The audio recording and pronunciation record form were used for two main purposes. First, students' pronunciation of words both in a text and in isolation was recorded on a smartphone and then written in the pronunciation record form, to see whether pronunciation in isolation was the same or different from pronunciation in reading a text. Second, the audio recording was used as a prompt to elicit participants' reasonings for their pronunciation. The semi-structured interview was used to study the participants' reasonings for pronouncing the 15 target words in isolation.

The list of 15 target words came from the key vocabulary specification part that appeared together with the 294-word reading passage called 'Color Me Pink', Unit 1, in the book '*New Weaving it Together 3*' by Broukal (2017). It is the book used in the target course "*English (Reading and Writing)*". One of the course requirements was that students read one passage in order to assess their pronunciation ability.

4.3 Procedures

Firstly, a reading passage with the 15 target words was chosen from the book. Semi-structured interview questions were designed and checked. Secondly, 10 high school students were selected to participate in the study based on the two criteria above. Consent forms were given to the 10 participants. Thirdly, each participant was asked to read the passage. The researcher recorded and noted the pronunciations when the participants read the target words. Once the participants finished the reading passage, they were asked to pronounce the 15 target words in isolation. During semi-structured interviews, the voice recordings of the words pronounced in isolation were played to the participants to help them recall the reasonings for their pronunciation. Finally, the data was analyzed.

4.4 Data analysis

The analysis of this study consists of three stages:

- 4.4a The participants' pronunciations of the 15 target words in isolation were transcribed and compared to the same 15 target words in the full text in order to see similarities or differences.
- 4.4b The data from words in isolation was also analyzed to see grapheme-phoneme correspondence using Brooks (2015) framework. GPC in three positions of words was analyzed by the framework of serial correspondences by Zhang et. al. (2015) e.g. the word 'soothe' has three graphemes <s,oo,the> and its corresponding sound unit /su:ð/. British English IPA from Cambridge Dictionary Online was used as the standard for correct GPC.
- 4.4c The data from the interview questions was grouped into the underlying reasonings of pronunciation.

5 Results

The aims of this study were to investigate the English words pronunciation of Thai high school students both in isolation and in full texts, and to investigate students' reasonings in pronouncing English words. The findings were therefore divided into two parts: participants' pronunciations in isolation and in full texts, and their reasonings in pronunciation. The first part is presented below.

5.1 Participants' pronunciations in isolation and in full texts

Table 2 Participants' pronunciations in isolation and in full texts

No	Target words	Is pronunciation of words in isolation the same or different from pronunciation in reading texts?											
		S = same , D = different										Same	Different
		P1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9	P 10		
1	Soothe /su:ð/	S	D	D	D	D	D	D	D	D	D	1	9
2	Affected /ə.fek.tɪd/	D	D	D	D	S	D	S	D	D	D	2	8
3	Clothes /kləʊðz/	D	D	D	S	D	D	D	D	D	S	2	8
4	Subconsciously /ˌsʌb.kən.ʃəs.li/	D	D	S	D	D	D	D	D	S	D	2	8
5	Culture /kʌl.tʃər/	S	D	D	S	D	D	D	D	D	D	2	8
6	Sacrifice /sæk.rɪ.faɪs/	D	D	D	S	D	D	D	D	D	S	2	8
7	Lives (n.) /laɪvz/	S	D	D	D	S	D	D	D	D	S	3	7
8	Through /θru:/	S	D	D	D	S	D	D	D	D	S	3	7
9	Desire /dɪ.zaɪər/	D	D	S	D	S	D	D	S	D	D	3	7
10	Pace /peɪs/	D	D	D	S	D	D	S	D	D	S	3	7
11	Thought /θɔ:t/	S	D	D	D	S	D	D	D	S	D	3	7
12	Anger /æŋ.gər/	S	D	S	D	D	D	D	D	S	D	3	7
13	Claim /kleɪm/	S	D	S	S	S	S	D	D	S	S	7	3
14	Victory /vɪk.tər.i/	S	D	D	S	S	S	S	S	S	D	7	3
15	Purity /pjʊə.rə.ti/	D	S	S	D	S	D	S	S	S	S	7	3
	Total "S" (same)	8	1	5	6	8	2	4	3	6	7		
	Total "D" (different)	7	14	10	9	7	13	11	12	9	8		

Table 2 shows similarity or difference of pronunciations of the words produced by each participant. Looking at the data vertically, it can be seen that when pronouncing the same word twice, no participants produced fully identical pronunciations.

It is seen that Participants 2, 6, and 8 produced the most different pronunciations of the words, i.e. No. 14, 13, and 12 words, respectively. On the other hand, Participants 1 and 5 were more consistent than the others, as both of them had the same pronunciations for eight of the target words.

Looking at the data horizontally, it is seen that 12 of the target words (No. 1-12) seemed to pose difficulty for the participants, since almost all participants produced different pronunciations of these words. For example, Participants 1, 2, and 3 pronounced the word ‘clothes’ differently, while Participants 6, 7, and 8 pronounced the word ‘through’ differently. From these two examples, when Participants first pronounced words in text, they paid less attention in pronunciations. For the second pronunciations of the same word in isolation, they paid more attention to the way they should pronounce words. This could make the differences of the same words that their first pronunciations were one syllable while their pronunciations in isolation were two syllables. It can be seen in /klo:/ - /ko:.tɪs/ in ‘clothes’ and /su:s/ - /su:.ted/ in ‘soothe’, or they tried to pronounce closer to English by changing the way to pronounce final sound such as /klo:d/ to /klo:t/ in ‘clothes’. Moreover, these words were different in terms of Thai and English phonological system that Thai has no final sound of phonological system, as seen in Table 3.

Table 3 Participants’ different pronunciation

	Participant 2		Participant 3		Participant 10	
Words	text	isolation	text	isolation	text	isolation
Soothe /su:ð/	so.ter /so:.tə:/	so.der /so:.də/	soos /su:s/	soo.ted /su:.ted/	sood /su:d/	shoot /ʃu:t/
	Participant 1		Participant 2		Participant 3	
Words	text	isolation	text	isolation	text	isolation
Clothes /kləʊðz/	klod /klo:d/	klot /klo:t/	klo /klo:/	ko.tis /ko:.tɪs/	klos /klo:s/	klo.tes /klo.tes/

On the other hand, the words ‘claim’, ‘victory’, and ‘purity’ seemed to create fewer problems for the participants, at least in terms of consistent pronunciation. It is seen that seven participants were able to give the same pronunciations of these three words both in isolation and in full text. This could show that the final consonant of ‘claim’ is related to Thai final consonants of the sound /m/. For ‘victory’, and ‘purity’, the structures of words are similar to the characteristics of Thai language and its orthography. So, there were no differences of the two pronunciations of the same word. However, their pronunciations were still incorrect. The pronunciations from seven participants are presented in Table 4.

Table 4 Participants' identical pronunciation

	Participant 1		Participant 5		Participant 9	
Words	text	isolation	text	isolation	text	isolation
Claim /kleɪm/	klem /klem/	klem /klem/	klam /kla:m/	klam /kla:m/	kem /kem/	kem /kem/
	Participant 4		Participant 5		Participant 10	
word	text	isolation	text	isolation	text	isolation
Victory /vɪk.tər.i/	wik.tor.r ee /wɪk.tɔ:.r i:/	wik.tor.r ee /wɪk.tɔ:.r i:/	wik.tor.ree /wɪk.tɔ:.ri:/ /t/ as s <u>t</u> ar	wik.tor.ree /wɪk.tɔ:.ri:/ /t/ as s <u>t</u> ar	wik.tor.r ee /wɪk.tɔ:.r i:/	wik.tor.ree /wɪk.tɔ:.ri:/
	Participant 7		Participant 8		Participant 9	
word	text	isolation	text	isolation	text	isolation
Purity /pjʊə.rə.ti/ /	poo.ri.tee pu:.ri.ti:/	poo.ri.tee pu:.ri.ti:/	po.ri.tee /po:.ri.ti:/	po.ri.tee /po:.ri.ti:/	poo.ri.tee pu:.ri.ti:/ /t/ as s <u>t</u> ar	poo.ri.tee pu:.ri.ti:/ /t/ as s <u>t</u> ar

Table 5 presents the problematic graphemes that students pronounced. The graphemes are divided into three positions based on a serial correspondence: initial, middle, and final position. In each position, the data are presented based on a frequency of problematic GPC produced by 10 participants.

Table 5 GPC in three grapheme positions of target words.

No	Initial GPC		Incorrect GPC	Total	Middle GPC		Incorrect GPC	Total	Final GPC		Incorrect GPC	Total
1	v	victory	10	10		through	9			lives	5	
2	sc	subconsciously	9	9	ough	thought	8	17	s	subconsciously	4	11
3		subconsciously	3		ire	desire	10	10		desire	2	
4	l	clothes	2	7	iou	subconsciously	8	8	es	clothes	10	10
5		claim	2			purity	4		t	thought	10	10
6		culture	3		u	culture	3	7	ve	lives	10	10
7	t	affected	1	5	ai	claim	6	6	ng	anger	8	8
8		purity	1		ure	culture	4	4	c	affected	4	4
9		claim	1	2		subconsciously	2			pace	4	
10	c	sacrifice	1		y	purity	1	3	ce	sacrifice	1	5
11	th	through	3	3	ai	pace	2	2	d	affected	4	4
12	r	through	3	3	e	affected	2	2	th	clothes	4	4
13	s	soothe	1	1	oo	soothe	2	2	the	soothe	4	4
14					o	victory	2	2	l	culture	3	3
15					er	anger	1	1				
16					i	sacrifice	1	1				
	Total incorrect GPC		40		Total incorrect GPC		65		Total incorrect GPC		73	

It is seen that from 13 graphemes in the initial position, the participants made 40 incorrect GPC. However, the frequency of incorrect GPC for each grapheme (letter) varies from 1 to 10. The two most problematic initial GPC in the target words were found to be <v> in ‘victory’ (from all participants) and <sc> in ‘subconsciously’ (from nine participants). The letter <v> which sound as /v/ in ‘victory’, therefore, seemed to be the most difficult letter for participants, since all of them pronounced it as /w/ instead of /v/, while <sc> as /ʃ/ in ‘subconsciously’ was pronounced differently, for example, as both /k/ and /s/. This may indicate an inability to correspond an English grapheme to other possible corresponding phonemes. Examples of incorrect initial GPC made by the participants are shown as follows:

Examples of problematic GPC in initial position

Word	Grapheme	Incorrect GPC	Correct GPC
Victory	<v>	/vɪk.tɔː.ri:/	/vɪk.tər.i/
Subconsciously	<sc>	/sʌb.kɔː.n.kuː.s.liː/, /sʌb.kɔː.n.sai.liː/	/sʌb.kɑː.n.fəs.li/

For 16 middle graphemes, 65 incorrect GPC were found. Still, the frequency of incorrect GPC varies. An incorrect GPC by all participants was found in ‘**desire**’, and by nine participants in ‘**through**’. The grapheme <ire> in ‘**desire**’ was pronounced differently as /ɛr/ and /eə/, while <ough> as /uː/ in ‘**through**’ was spoken as /ɔː/ and /oː/. These graphemes were shown to be the most problematic in terms of incorrect phoneme correspondences. This shows that English vowels were difficult for the participants to produce correctly.

Examples of incorrect GPC in middle position

Word	Grapheme	Incorrect GPC	Correct GPC
<i>Desire</i>	<ire>	/diː.sər/, /diː.seə/	/dɪ.zaɪər/
<i>Through</i>	<ough>	/tɔːtʃ/, /throːz/	/θruːz/

There were also 14 incorrect GPC seen in pronunciation from the final positions. They caused 73 incorrect GPC, which was also the greatest number of mistakes compared to the initial and middle positions. This varies the incorrect GPC, three graphemes seen as the most problematic for all ten participants were <es> in ‘**clothes**’, <t> in ‘**thought**’, and <ve> in ‘**lives**’. All participants incorrectly pronounced grapheme <es>, /z/ in the word ‘**clothes**’ for /s/. They also pronounced <t> in ‘**thought**’ as /tʃ/ and /k/ while <ve> in ‘**lives**’ is seen as /f/. This may point to the lack of GPC ability and pronunciation skills.

Examples of incorrect GPC in final position

Word	Grapheme	Incorrect GPC	Correct GPC
Clothes	<es> as /z/	/koː.tɪs/, /kloːs/	/kloʊðz/
Thought	<t>	/tʌtʃ/, /tɑːk/	/θɔːt/
Lives	<ve>	/laɪf/, /lɪf/	/laɪvz/

The first section of findings presents the data of participants’ pronunciation in both in isolation and in full texts. The GPC in three positions of words is also seen. The next section presents reasonings for participants’ pronunciations.

5.2 *Students' reasonings for pronunciation.*

Table 6 Reasonings for pronunciations

No	words	Reasonings for pronunciations			
		Using logic	Being familiar	Making a random guess	Other
1	Soothe	7	3	0	0
2	Affected	9	0	1	0
3	Lives	6	4	0	0
4	Through	4	3	3	0
5	Clothes	8	1	1	0
6	Subconsciously	5	1	3	1
7	Desires	8	0	2	0
8	Claim	7	2	1	0
9	Pace	7	2	1	0
10	Thought	8	1	0	1
11	Anger	9	0	0	1
12	Culture	9	1	0	0
13	Victory	5	5	0	0
14	Sacrifice	9	0	1	0
15	Purity	10	0	0	0
Total		111 (74%)	23 (15.3%)	13 (8.7)	3 (2%)
		150 (100%)			

***Descriptions for each underlying reasoning**

Guessing: uncertain of pronunciation, confused by the word, had never seen the word

Being familiar: could remember, used to study the word in class, used to see from text in public e.g. Facebook, games, places they had visited

Using logic: used logic, used GPC correspondence, compared to pronunciation of other words

Other: do not pronounce unknown graphemes, considered some graphemes as not pronounced, considered the word's meaning

Table 6 shows participants' underlying reasonings in their pronunciation of words. This is to aid in answering research question 2, "What are students' reasonings in pronouncing English words?" From the semi-structured interview, there were four underlying reasonings for selected pronunciations, including the use of logic, being familiar with the word, making a random guess, and other reasons. Of 150 pronunciations from 15 target words, using logic was the most reported reasoning for a chosen pronunciation (111 pronunciations, or 74 percent). Some examples of participants' reasonings were, as follows:

(1) "...I separate the word 'clothes' by considering what are consonants and vowels. 'cl' is the initial consonant plus 'o' as a vowel. Then, 'thes' is another syllable as 'tis'..."

(Participant 2)

(2) "...I take 'nature' as the guided way to pronounce 'culture' because it is written in the same way. The 'ture' is always 'jer', so, in these word are pronounced similarly..."

(Participant 3)

(3) "...I compare 'soothe' with the word 'moon' and 'good', 'oo' in 'moon' and 'good' represent /u:/ sound. So, I think 'oo' would pronounce similarly to those words..."

(Participant 4)

(4) "...purity is easy to pronounce because I can divide 'pu', 'ri', 'ty' basing on thinking of what are consonants and vowels. That is 'p' is consonant plus 'u' as a vowel, 'r' is /r/ follow by 'i' as a vowel. And also 't and y' as /t/ plus /i:/."

(Participant 6)

For the reasoning of using logic, it can be said that the participants have existing perceptions or knowledge of how to pronounce words. They may have their own strategies to pronounce words as they tried to link vowels and consonants for producing words, but their pronunciations remained problematic.

The second reasoning was an existing familiarity with words (23 pronunciations, or 15.33 percent). The following interview excerpts display this underlying reasoning.

(5) "...I remember hearing this word 'claim' because it is also used as a English-Thai when people complain about something, for example, when the car has some problems..."

(Participant 5)

(6) "...I used to see the word 'live' on Facebook function. People always say this word nowadays, for example, "คืนนี้ จะไลฟ์ตอน 2 ทุ่ม ไร้ออชั่นนะ" as in English "I will go LIVE at 8 p.m. tonight, see you". I also speak this word frequently..."

(Participant 3)

(7) "...I used to see 'victory' because I always play online games. I could hear the sound 'victory' when I won the game..."

(Participant 4)

(8) "...I always take the BTS to "The Victory Monument" in Bangkok. I often hear from the announcement at the BTS station..."

(Participant 6)

(9) *"...I can pronounce this word easily because I have seen the word 'victory' from my favorite dessert café's name .."*

(Participant 8)

For the reasoning of familiarity, the context from their everyday life may affect their pronunciation. Their reported reasonings had not come from the classroom or teachers' resources. On the other hand, their reasoning was derived from their outside class experience e.g. when playing games, hearing English loan words from announcements, or seeing signs or menus from different places.

Students also used random guessing as an underlying reasoning for their selected pronunciation. Thirteen pronunciations (8.67%) fell into this category.

(10) *"...I'm uncertain to pronounce this word 'subconsciously'. It's very long with unknown sound producing. It's very difficult for me, I can only use my sense of sound possibility."*

(Participant 7)

(11) *"...I'm not sure to pronounce this word 'through'. I don't know what is the certain sound of 'gh'..."*

(Participant 9)

As to why students employ guessing as an underlying reasoning in their pronunciation, students may have problems with long words containing many consonants and vowels, together with being unfamiliar with those words. They guessed since they did not know how they could pronounce those words.

The reasoning of "other" for a pronunciation amounted to 2 percent from three pronunciations. Relevant interview excerpts from the participants are as follows:

(12) *"...I think 's' in 'desires' is just an additional consonant which is not pronounced. I considered it as a silent sound. It's the symbols of the number of something."*

(Participant 1)

(13) *"...I think 'h' in 'thought' helps pronunciation in terms of lower sound not the sound that has to be pronounced, so, I didn't pronounce it as other letters. In Thai, it is also a low tone sound."*

(Participant 2)

6 Discussion

Looking at the similarities and the differences between pronunciation in isolation and in a full text, most participants pronounced the same target word differently in the two cases. There were only three target words that most participants pronounced similarly in the two cases ('claim', 'victory', and 'purity'). This could show that most of the participants lack pronunciation skill because of limited opportunity for practice since the course was only 55 minutes for two periods per week, limited focus and teaching on the topic in class, or teachers should be tested as well. Moreover, the analysis of the ability to correspond grapheme to phoneme showed that there were many graphemes that the participants could not pronounce correctly. In the three positions of graphemes, the most problematic was the pronunciation of final position GPCs, including <s>, <es>, <t> and <ve>. The results of these problems can be indicated that English GPC features are not similar to Thai, since the differences between the Thai and English phonological system. Participants, therefore, pronounced some graphemes with Thai phonic replacements. Thus, the sound /v/ was always replaced by /w/ as its phoneme when participants pronounced words containing <v>. This proves that the differences between GPCs in Thai and English led to the problems, because of the differences between the English and Thai language systems. Also, the study of Richards (1967) observed the pronunciation features of Thai speakers of English. The results pointed out that the different phonic representations and inconsistencies of the correspondence between English and Thai caused students to employ allophonic replacements as a strategy for English phoneme production. Similar Thai allophones were then used as substitutions in both consonants and vowels, for example, /kləʊðz/ as /klos/ in 'clothes'. For this reason, the participants could not pronounce some final consonants as they are pronounced in English. The findings could be helpful as a resource in designing lessons for teaching pronunciation to Thai students or developing pronunciation teaching methods.

Furthermore, the findings of this study revealed four underlying reasonings for the selected pronunciations. Firstly, in 74 percent of the cases, the Thai students used logic in selecting a pronunciation, for instance, by comparing the target words to other words such as taking 'nature' as the guided way to pronounce 'culture'. For 15.33 percent of pronunciation choices, participants cited their familiarity with the target word. Being familiar refers to remembering the target word from seeing it previously, in what they had covered in a class or in public announcements, or in places they had visited. Guessing was also reasoning in pronunciation in 8.67 percent of cases, and for another 2 percent of cases participants cited other reasons. From the interviews, most participants attempted to correspond letters and sounds as a technique, so that the most of the underlying reasoning for the chosen pronunciations belongs in the category of logic. This could show that they have existing perceptions of how to pronounce English words. Moreover, exposure to English in everyday life can support English word recognition or familiarity. Participants can learn English from other resources which are not used in the classroom. For these reasons, use of transliteration, playing online games, and travel can help them in pronouncing or recognizing words.

7 Conclusion

Since the English and Thai pronunciation systems are different, English pronunciation is sometimes problematic for Thais. In reading the target words, the Thai students pronounced the same word differently in different circumstances. This shows a need to be taught good pronunciation strategies.

Although pronunciation is taught less in class, the use of English in other contexts also plays a role in pronunciation or word recognition. Therefore, identifying the pronunciation strategies of students could help in the design of effective pronunciation lessons, teaching methods, and teaching processes.

8 Implications

The main findings related to the differences between Thai and English can be seen in the problems with Thai high school students' English pronunciation. This study provides empirical evidence concerning the students' problems. Firstly, teachers should consider the explicit teaching of GPCs or raising pronunciation awareness in order to promote students' knowledge of the inconsistencies of English pronunciation. Highlighting the differences between Thai and English GPCs could improve students' pronunciation and phonemic awareness. Secondly, teachers should present a word together with its meaning and the context of its use, so that students will learn English more meaningfully than as simple pronunciation practice. These aspects could support students' pronunciation skills, which serve as a basis of speaking skills. Thirdly, teachers should be encouraged to teach pronunciation by supporting students' frequent practice through pronunciation drills, reading passages in class, or related context activities such as tongue twisters. Finally, teachers should focus more on pronunciation assessment as one of the prominent elements of the English classroom, because more focus and practice in this aspect could be effective in improving Thai students' pronunciation.

9 Limitation

To conduct this research, there were only ten students agreed to participate in this study. The instruments used in this study were dictated by the book used in class. So, the reading passage and vocabulary were limited in scope. To assess students' pronunciation ability, the reading passage or vocabulary should come from various techniques.

References

- Akyol, T. (2012). A Study on Identifying Pronunciation Learning Strategies of Turkish EFL Learners. *Procedia-Social and Behavioral Science*, 70, 1456-1462.
- Brooks, G. (2015). *Dictionary of the British English Spelling System*. Retrieved from <https://books.openedition.org/obp/2183>.
- Broukal, M. (2017). *New weaving it together 3*. Thai Watana Panich, Bangkok, Thailand.
- Gibson, E. J., Osser, H., & Pick, A. D. (1963). A study of the development of grapheme-phoneme correspondences. *Journal of Verbal Learning and Verbal Behaviour*, 2, 142-146.
- Gilakjani, P. A. (2012). The Significance of Pronunciation in English Language Teaching. *English Language Teaching*, 5(4), 96-107.
- Goodman, J. (2017, July). *Unpacking the Narrative of Educational Failure: Thailand in the Standardized Testing Era*. 13th International Conference on Thai Studies, Globalized Thailand? Connectivity, Conflict and Conundrums of Thai Studies, Chiang Mai: Chiang Mai University, Thailand.
- Hismanoglu, M. (2006). Current perspectives on pronunciation learning and teaching. *Journal of Language and Linguistic Studies*, 2(1), 1-10.
- Kanoksilapatham, B. (2014). Thai elementary school teachers' English pronunciation and effects of teacher variables: Professional development. *TESL-EJ*, 18(1), 1-13.
- Kelly, G. (2000). *How to Teach Pronunciation*. Pearson Education Limited, England.
- Kelly, L. G. (1969). *25 Centuries of Language Teaching*. Newbury House Publisher, Massachusetts.
- Khamkhien, A. (2010). Thai Learners' English Pronunciation Competence: Lesson Learned from Word Stress Assignment. *Journal of Language Teaching and Research*, 1(6), 757-764.
- Ladkert, K. (2009). *Development of English Pronunciation with Phonics*. Rajamangala University of Technology Srivijaya, Nakhon Si Thammarat, Thailand.
- Lee, W. L., Low, M. H., & Mohamed, R. A. (2013). A comparative analysis of word structures in Malay and English storybooks. *Pertanika Journal of Social Science and Humanities*, 21(1), 67-84.

- Mantali, S. M. (2006). The Application of Reading Aloud Technique to Increase Students' Pronunciation. *Letter and Culture Faculty*, State University of Gorontalo.
- Marinelli, V. C., Romani, C., Burani, C., & Zoccolotti, P. (2015, December). Spelling Acquisition in English and Italian: A Cross-Linguistic Study. *Frontiers in Psychology*, 6. Retrieved from <https://www.frontiersin.org/articles/10.3389/fpsyg.2015.01843>.
- Naruemon, D. (2012). Causes of English Spelling Errors Made by Thai Foreign Learners. *ARECLS*, 10, 22-43.
- Nogita, A. (2016). *L2 letter-sound correspondence: Mapping between English vowel graphemes and phonemes by Japanese EAL learners, A Dissertation Submitted in Partial Fulfillment of the Requirements of the Degree of Doctor of Philosophy*. The Department of Linguistics, Aoyama-Gakuin University.
- Richards, J. (1967). Pronunciation Features of Thai Speakers of English. *Proceedings of the Linguistic Society of New Zealand*, 67-75.
- Tananuraksakul, N. (2017). Building up Thai EFL students' positive attitudes toward their non-native English accented speech with the use of phonetics website. *Teaching English with Technology*, 14(3), 3-15.
- Toomnam, P., & Intaraprasert, C. (2015). The impacts of attitude towards speaking English on the use of communication strategies by English majors in Thailand. *Theory and Practice in Language Studies*, 5(6), 1151-1158.
- Wei, Y., & Zhou, Y. (2002). *Insights into English Pronunciation Problems of Thai Students*. Paper presented at the Annual Meeting of the Quadruple Helix, ERIC (ED476746).
- Wixey, A., & Eamoraphan, S. (2017). Predictive relationships between phonemic awareness, verbal short-term memory, and working memory with spelling achievement among grade 1 students at Thai Christian school, Thailand. *Scholar: Human science*, 9(1), 188-208.
- Zhang, J., Hamilton, J. H., & Galloway, B. (2015). English Graphemes and their Corresponding Sound Units. *Research Gate*. Retrieved from <https://www.researchgate.net/publication/268376120>.

APPENDIX A: Reading text

Reading text

Color Me Pink

Red, white, pink, purple—what is your favorite color? We all are sensitive to color. There are some colors we like a lot and some we don't like at all. Some colors soothe us, others excite us, some make us happy, and others make us sad. People are affected by color more than they realize because color is tied to all aspects of our lives.

Do you know why you select a shirt or dress of a certain color when you look through your clothes in the morning? Colorgenics experts say that we subconsciously choose to wear certain colors in order to communicate our desires, emotions, and needs.

Colorgenics experts claim that our clothes send messages to others about our mood, personality, and desires. People who wear red like to live life at a fast pace. Brown is a color of wealth, and it shows a need for independence. Wearers of green have a love of nature and enjoy peaceful moments. They often like to be left alone with their thought.

Although colorgenics may be a recent area of study, associating colors with emotions is not new. Colors have always been used in phrases to describe not only our feelings, but also our physical health and attitudes. 'Red with rage' describes anger; 'in the pink' means to be in good health; 'feeling blue' is a sad way to feel; and 'green with envy' indicates a jealous attitude.

Color is used symbolically in all culture, and it plays an important role in ceremonies and festivities. In Vietnam, yellow represents courage, victory, and sacrifice. In many cultures, white symbolizes purity, which is why brides often wear white wedding gowns. Black, on the other hand, symbolizes death, and it is often the color people wear to funerals.

.....

APPENDIX B: Fifteen Target words

Fifteen Target words

1. Soothe
2. Affected
3. Lives
4. Through
5. Clothes
6. Subconsciously
7. Desires
8. Claim
9. Pace
10. Thought
11. Anger
12. Culture
13. Victory
14. Sacrifice
15. Purity

APPENDIX C: Pronunciation record form

Student.....

No	words	Pronunciation record		Reasons
		In text	In isolation	
1	soothe			
2	Affected			
3	Lives			
4	Through			
5	Clothes			
6	Subconsciously			
7	Desires			
8	Claim			
9	Pace			
10	Thought			
11	Anger			
12	Culture			
13	Victory			
14	Sacrifice			
15	Purity			

APPENDIX D: Semi-structured interview

Semi-structured interview

This semi-structured interview was used to collect data to study on how participants pronounce words in English and why they use that particular pronunciation.

Research Title: English word pronunciation of Thai high school students

The questions asked in the semi-structured interview are shown below:

1. After you had listened to your recorded pronunciation, what is your pronunciation that you pronounced again?
2. How did you pronounce this word?
3. Why do you think it is pronounced as that way?
4. Have you ever seen this word before?

Authors

Patthamaporn Boodsee
King Mongkut's University of Technology Thonburi
E-mail: maypatthamamay@hotmail.com

Atipat Boonmoh
King Mongkut's University of Technology Thonburi
E-mail: atipat.boo@kmutt.ac.th