

Collegiate Thai students' word perception and an analysis of the location of English phoneme errors

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ABSTRACT

Thailand has consistently ranked among the lowest regionally and internationally. As the 2015 formation of the ASEAN Economic Community looms, the sense of immediacy is apparent among educators, government, and the public. There is much speculation about the cause for the “failure” of Thai learners, but this is a complex issue and many factors contribute it—from poor language skills of Thai teachers (Kitjichalong, 2007) to the reliance on the ineffective grammar translation method (Atkins, 2000, and Tipa, 2548 (2005). However, developing listening competence is primary in order to develop all other language skills. To do this, ESL learners must acquire the ability to correctly decode input (bottoms-up process). Given the profound differences between Thai and English orthography, the ability to perceive many phonemes is most likely impacted. Up to nine English vowel phonemes are problematic to Thai learners. Only six terminal consonant phonemes are available in Thai. This study has two objectives: (1) to test Thai learners' word perception of monosyllabic words; and (2) to analyze the locations of English phoneme errors. To determine the extent of errors, an audio recording of 30 sentences, each with target a monosyllabic word was devised for a multiple-choice test and gap-fill test. Four classes of 106 second-year learners participated. This paper will only examine results of the multiple-choice test. There was a mean error rate of 74 (N=42). Over 69% of the errors involved vowels and terminal consonants and clusters. In the short term, ESL teachers can focus on phonemic awareness and decoding. With an appreciation of the great hurdles that Thai learners must face due to Thai orthographic dictates, appropriate aural teaching materials should be developed to address these differences.

Keywords : *word perception, English phonemes, Thai orthography, bottoms-up processing, internal model of English words, connected speech*

1. INTRODUCTION

As noted by many professional foreign and Thai teachers, most Thai EFL learners at the collegiate level exhibit severe deficits in all language skills. In a 2007 Hatyai University grammar-oriented diagnostic test of over 1,000 incoming first-year students, 51% scored at the beginner level and 43% at an elementary level; in other words, 94% scored lower than the level expected by the university, and despite a decade of mostly traditional grammar-translation instruction in primary and secondary schools. The method is a major, persistent cause for low proficiency.

An Udon Thani Rajabhat University’s Ellis 3.2 placement test found that over 2,000 students “roughly scored as ‘beginners’. With 1,000+ hours of English instructions they should [have scored] at ‘high intermediate’ or ‘advanced’ learners.” (Covey, 2007, p. 1)

The problems of Thai learners’ English-language skills are nationwide and of longstanding national concern. A 2001 Chulalongkorn University Test of English Proficiency ranked Thai learners second to lowest among eight other nationalities attending the Kingdom’s most prestigious higher educational institution (Prapphal, 2001, p. 5).

In January 2012, the Education Ministry launched the “English Speaking Year” campaign to raise awareness of the need for “better proficiency” when the 10-member ASEAN Economic Community forms in 2015. *The Nation* reported that Education Minister Woravat Auapinyakul the Ministry will “require teachers and students to speak English at their schools for one whole day each week.”

There are many reasons contributing to the consistently poor English competency results. Some examples that other researchers and observers have include: Poor English language skills of Thai teachers (Kijchalong, 2007). A 2006 University of Cambridge survey showed that “Over 60% of the teachers had insufficient knowledge of English and teaching methodology” (Kaewmala, 2012); the fact that Thai teachers rarely speak English (Weena, 2007, p. 1) and teaching students at a higher level than the students’ age group, according to the University of Cambridge survey. “For example, they were trying to teach English for 15-17 year olds to 11 year olds” (Kaewmala, 2012); that is, teaching at a significantly higher level than students’ proficiency.

Not surprisingly, almost all Thai students’ weakest skill is listening comprehension. Most elementary and high school teachers speak only in Thai and focus on writing, grammar, and some reading more than any other skill (Noppakuthong, 2007, p. 1).

When English words are taught, teachers either say English words as they were taught, or attempt to pronounce them from transliterated Thai. In a classic example, Thai teachers taught “juice” as “joo-is” /dʒu.ɪs/ because of a longstanding error in Thai textbooks and “stō-mah āch” /sto.mɑ eIʃ/ in more recent textbooks. Though Thai pronunciation rules require that both terminal /s/ and “ch” /tʃ/ would be /t/, clearly, students were drilled on these words. Most likely the pronunciation is fixed—fossilized. However, I have met few students who could transfer these terminal sounds to other words. The inability to apply the “ch” /tʃ/ terminally may be a result of underproduction, a type of negative interference “caused by conscious avoidance of difficult L2 structures.” (Krynicky, undated).

Other issues that likely causes comprehension problems include features of English that are generally not taught, such as suprasegmental¹ features of English, particularly syllable stress. Due to reliance on Thai orthography for pronunciation, many students are unaware of the importance of syllable stress to native English speakers' comprehension. Pronunciation of an English word with Thai orthography is dictated by Thai tonal pronunciation rules, which precludes syllable stress. Few learners are taught the significance of intonation or prosodic features². Some motivated learners, in the absence of native speakers, adopt the strategy of relying on Thai-English and English-Thai dictionaries for pronunciation (see Transcript 1, below).

2. PROBLEM STATEMENT

There is a wide gap between listening comprehension and written English even among the more dedicated Thai EFL learners. Nonetheless, when a word, phrase, or simple sentence is written, learners better understand what a native-speaking instructor says. However, when motivated, semi-self-taught learners are asked to read an English passage, their pronunciation frequently suggests they've never been taught to decode and that they had learned English mediated by Thai orthography—Thai script . For example, this learner has been studying English for 12 years and has apparently studied English by writing it in Thai.

Transcript 1: (A memorized statement.)

Student production:	Da Tai peepun ees da famaht da samiling an haebhinet an da gude hawbhitalidhee.*
Literally:	*The Thai people is the famous the smiling and happiness and the good hospitality.
Thai script substitution:	ไทย พีเพิน เดอะ อีส เฟมัส สไมลิ่ง แอนด์ แฮปปี้เนส แอนด์ เดอะ กู๊ด ฮ็อบปีทาลิตี้
English:	Thai people are famous for their smiles, happiness, and good hospitality.

* Note: *Bh* represents ป and *dh* represents ด.

In listening, a learner attempts to make lexical decisions, in a complex decoding process, beginning at the phoneme level. The listener's first task is to identify consonants and vowels (Field, 2008, p. 115). This primary level, I believe, is the fundamental cause of listening and pronunciation problems.

¹ Suprasegmentals are cues of language that come from stress, intonation, pitch, intensity and durational differences in the pattern of speech.

² “Prosodic features - sound characteristic which affect whole sequences of syllables. They many involve, for instance, the relative loudness or duration of syllables, changes in the pitch of a speaker's voice and the choice of pitch level.” (Richards & Platt, 1992)

The phonemic differences between Thai and English are profound, and this is an issue that doesn't appear to be widely acknowledged or understood. One factor in pronunciation recognition and production problems is the Thai orthography allows only six terminal³ consonants: /k/; /p/; /t/; /m/; /n/; /ŋ/ (sing).

Here is a telling example L1 interference demonstrating how Thai spelling rules interfere with English pronunciation:

mat	mad	math	mass	mask	mash	match
แมท	แมด	แมทท์	แมสส์	แมสค	แมสท์	แมช


All seven words are pronounced as **mat** because Thai orthography prohibits production of these terminal sounds: /d/; /θ/ unvoiced /th/; /s/; /sk/; /ʃ//sh/; /tʃ//ch/.

Phonemes are the basic blocks of a word, and without the recognition of correct ones, learners will be persistently handicapped in their ability to comprehend spoken English and, in many cases, to articulately communicate with English speakers.

Can better phonemic recognition improve an EFL learner's production? Can phonemic awareness training improve Thai EFL learners' ability to comprehend spoken English? My initial studies, as does Flowerdew & Miller (2005, p. 31), seem to suggest that it may be too late for collegiate EFL learners and for adults to correctly *produce* non-native English phonemes.

Most of our learners cannot understand native speakers, although they can easily comprehend their Thai English teachers and each other. They complain that native speakers speak too quickly, but the reality is that they simply cannot recognize familiar words they have learned for year after year and they have not been taught essential strategies for listening comprehension.

Steffen Chung (2005) noted learners often develop an internalized model results in an unconscious expectation that native speakers will speak English they way they do. It is not uncommon, as Steffen Chung noted, for students to laugh at native speaker's pronunciation of English words.

This “internalized model” is referred to as a mental lexicon and accounts for why learners have great difficulty, if not failure, recognizing a word aurally. An example is “fish”. Many Thai learners' mental lexicon of this word is fit /fɪt⁴. It will only be recognized when written or illustrated .

III. PURPOSE

The purpose of this study is to examine monosyllabic word recognition in two different testing formats, the differences in errors in both formats, and to determine error locations in both formats. However, this paper

³ We can count sounds /w/ and /y/ as initial consonants. Terminally, they are semi-vowels.

⁴ Actually, because of the vowel substitution, it is somewhat like a very short duration /feet/ /fit/.

will only consider results of multiple-choice responses, because of the complexity of analyzing the gap-fill tests. (The gap-fill paper will be the second phase of this study.)

In light of Tauroza's (1990) study showing the context does not assist learners to identify words with, in his words, “unfamiliar sounds,” this study targeted pre-taught words that were taught in a context and the testing format provided contextual information in an aural and written form.

My hypotheses are: 1 Word recognition errors will be at the phonemic level; 2) It is expected that most errors would be primarily located at non-native vowels phonemes and non-native vowels and terminal consonants that aren't permitted in Thai; and 3) In general, context will not assist subjects in making their choices, despite pre-teaching.

Because of the nature of language learning, it is, of course, impossible to locate a credibly reliable control group. Some students who were better and some poorer students in listening are expected in each group.

The subjects were between ages 19 to 20, most from public high schools, and exposed to the same number of years of English instruction.

However, the study may be limited because the subjects are Southern Thai and speak a regional dialect as well as Central Thai. Yu (undated) cites a Thai language researcher:

. . . tone systems also often correlate with or, in some cases, evolve into non-tonal languages with length opposition. In Southern Thai, for example, short vowels became long under non-falling tones (i.e. low-rising, low-level, and mid-level), while long vowels became short under falling tones (i.e. high-falling, mid-falling, & low-falling) (Gandour 1977).

Also, test subjects speak a Southern Thai dialect and, additionally, Muslim students speak Malayu, so both dialects may affect learners' L2 perception via L1 teachers' and peers' pronunciation. Other L1 speakers of an Isan and Northern Thai dialects, as well as speakers from Central Thailand, may yield different results.

The relevance of this study may be limited to collegiate students and/or young adults. Young learners in bilingual schools are likely to have considerably fewer perceptual issues. Young students in “international” schools in which English is the only mode of teaching are likely to have fewer perceptual issues.

IV DEFINING NON-NATIVE AND SUBSTITUTED PHONEMES

Some 20 English phonemes are not available in Thai (non-native phonemes), arguably more, with an additional five phonemes that have either been incorrectly learned or are perceptually and productively hindered due to Thai-English interference or other factors. Several English “short vowels” do not exist in Thai and learners are taught “equivalent” Thai phonemes.

⁵ Thai-English and English-Thai dictionaries are notoriously full of translation errors.

⁶ Native EFL teachers who have lived in Thailand for a long time can become accustomed to Thai pronunciations and grammar and syntax errors. They can also unwittingly speaking “Thai-english” in class.

A SUMMARY OF NON-NATIVE AND PROBLEMATIC PHONEMES

An attempt to define which English phonemes are non-native to Thai is complicated by several factors, as seen in the chart below. For my purposes, I have defined 32 phonemes as non-native or problematic.

The non-native English vowels⁷ include

- /ɪ/ /I:/ (as in **c**ity and **c**ity) is taught as อี a short version of /i/.
- /e/ /E/ (as in **b**ed) is taught as เอี a short version of /eI/.
- /ʊ/ (as in **pu**t, **bo**ok) is taught as อุ a short version of /u/*
- /ə/ (as in **a**bout) is sometimes taught as the long duration vowel phoneme อ๑ (similar to /ɑ:/ /D/*) or as อ๒ short duration²⁹ vowel phoneme closer to the schwa
- /eI/ (as in **ma**de). With an overall error rate of 81%, results on this test show that learners indeed have recognition problems, although the phoneme เอ exists in Thai, which I suspect that it is uttered with a shorter duration than /eI/.⁸
- Because of Thai spelling dictates, no consonant can follow /aI/ (**my**, **Thai**, **ti**me, **wi**de) and /aU/ (**no**w, **Laos**, **blou**se).

Initial consonant and digraphs include /v/ (**vo**ice), /θ/ (**th**ing, **with**), /ð/ (**this**), and /z/ (**zo**o). Because some Thai speakers use one or the other in Thai and English, /ʃ/ (**sh**e, **su**re) and /tʃ/ (**ch**ip) can result in perceptual and production errors.

Only seven initial clusters are possible in Thai: /gl/ (**gl**ass), /gr/ (**gr**een), /gw/ (**Gw**en), /kl/ (**cl**ip), /kr/ (**cr**eam), /kw/ (**qu**iet), /pl/ (**pl**ace), /pr/ (**pr**ay). No terminal consonant cluster is available in Thai.

V PROCEDURES

This study was focused on phonemes that were unavailable, substituted, or miss-assigned. For target-word choices, using John Higgins's utility "FindWord", a list of 135 words was compiled, using phonemes and clusters that are unavailable or substituted.

For both the tests, 30 monosyllabic target words were chosen based on the most frequent errors committed on word-recognition tests given to 124 first- and second-year business English majors. The top four most frequent word-recognition errors were chosen as distracters for the multiple-choice test.

Generally, the 30 target words are common terms that the students have been repeatedly exposed to in reading and writing exercises. Nonetheless, prior to administration, the test subjects were exposed to the target

⁷ Excluded are the American pronunciations of ɜː as in *bird*; ɑː *arm*; ɔː *winner*; iː *near, here*; eɪ *air, there*; uː *tour*. They are excluded because Thai learners pronounce those phonemes in a manner that is closer to RP and are generally comprehensible to North American speakers.

⁸ Almost all Thai vowel phonemes have a long and short duration sound.

words in the two weeks prior to testing. In the “pre-teaching” phase, subjects heard these target words used in five samples sentence and echoed each.

For the test, a “context sentence” was written for each target word, which was replaced with a blank for the test (See Table 1), with the target word and distractors beneath. Sentences were chosen to ensure they contained contextual clues; albeit, admittedly what a foreign instructor views as a contextual clue may not “translate” well.

Each sentence was recorded at a moderate speech rate uttered in natural stream of speech; however, during editing the audio was slowed 10%. The sentence was uttered twice, with an eight-second pause between the repetitions. A 12-second pause was inserted to allow gap-fill test subjects time to write the target.

Four classes of 106 second-year students in a foundation English class participated. Half of the class received the multiple-choice test and half the gap-fill test in each class in which the test was conducted. Both groups simultaneously participated in the test.

Before the task began, a bilingual PowerPoint presentation of instructions was shown to the subjects. They were informed that this was part of a study, that it was anonymous, and that there would be no grade. No name or student number was allowed on the answer sheets.

The class was randomly divided into two groups and answer sheets were distributed. The procedure was illustrated with an audio sample. They were instructed to listen carefully and, on the answer sheet provided, to choose or write the word that they heard.

Table2: Audio Script Example

	<i>Target</i>	<i>Context sentence</i>
05	bag	Wait a minute! I think I left my BAG in the classroom. I'll be right back.
10	spell	I SPELL my name with a “p” not a “b.”
11	side	Go down this hall. The toilet is on the left SIDE of the hall.

(Sentence 27 was eliminated from the study, because of a playback problem during testing of the first group of subjects.)

VI RESULTS

For analysis, each target word had been assigned and categorized in the following categories:

(1) Initial consonant cluster; (2) Initial consonant cluster and terminal consonant; (3) Vowel (4) Terminal consonant; (5) Vowel and terminal consonant; (6) Vowel and terminal consonant cluster; (7) Terminal consonant cluster; (8) Words that could be spelled in Thai script; and (9) Correct answers.

Twelve answer sheets were removed from the test because of an excess of blank responses.

Unlike Tauroza’s results, non-native vowels are not a problematic as anticipated. I conjecture that this may be because his test subjects use a Roman alphabet. Context did not appear to significantly assist most students, which is consistent with Tauroza’s research.

The mean error rate of 73.97 was consistent with a previous study I conducted and with classroom testing.

In this test, given 145 choices, the error rates in each location, overall, is somewhat distributed equally. Not surprisingly, terminal consonant clusters with a 47% overall combined error rate and terminal consonant clusters with combined average of 58%. Misperceiving words that *could* be transcribed into Thai script—over 22%—was not expected. One factor might be the internal model of what these words should sound like; for instance, a voice inflection or certain features of spoken English might break the perception model. Another important factor probably was that a target did not match the Thai tone of the transcribed word, or the target’s word stress or inflection did match the internal model.

Table2: Overall Results Summary

Error Location	N=42	
	Average error %	
Mean error rate of 73.9	16.67	
1. Initial consonant cluster	17.81	
2. Initial consonant cluster and terminal consonant	14.63	
3. Vowels	14.30	
4. Terminal consonant	14.89	
5. Vowels and terminal consonant	20.98	
6. Vowels and terminal consonant cluster	19.20	
7. Terminal consonant cluster	22.40	
8. Words possible in Thai	25.37%	
9. Correct answers	25.37%	

The average overall percentage of correct answers, although not startling, suggests that phonemic awareness exercises in context are valuable.

Features of connected speech (intrusion, linking, reduction, elision, etc.) may be a factor is misperception as well.

VII DISCUSSION SUGGESTIONS

My results suggest that unavailable phonemes, especially terminal consonants and clusters, may indeed prevent learners from correctly perceiving known word perception, and that Thai learner face significant hurdles in English learning, because of the nature of Thai pronunciation dictates, especially vowel and terminal consonant and vowel and terminal consonant clusters.

Teachers, administrators, and publishers need to take a fresh view of lesson construction for Thai learners, particularly with an initial focus on phonemic awareness and aural decoding skills. Material and activity should address the unique problems of Thai learners due to Thai spelling dictates.

While it is unlikely that fossilized *production* errors can be overcome, and despite Flowerdew and Miller's assertion that after puberty the brain cannot absorb new phonemes, I do believe that, with equipped with bottom-up decoding skills and regular and frequent listening, comprehension of output will progress.

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