The Recognition and Production of English Word Stress of Thai University Students

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Abstract

This study aimed to find out whether English major students who had basic knowledge of Linguistics are able to assign word stress to two-syllable, three-syllable and four-syllable English words correctly, whether there is a significant correlation between their competence in recognizing and in producing English word stress, and to determine the factors affecting word stress recognition and production. The participants were 14 second year English major students who had basic knowledge of Linguistics. The data were collected by using a word stress assignment. The participants were assigned to mark the primary stress on 45 words, and read all of them. The results revealed that over 70% of the stress placements of two-syllable, three-syllable and four-syllable English words were correct. For the stress productions, it was found that over 70% of them were correct. It can be assumed that the ability of the students to assign the primary stress to the two-syllable, three-syllable, and four-syllable words correlated with their ability to pronounce them. From the interview, it was found that the differences between English and Thai, the complexity of the syllables, and the inadequate knowledge of syllable structure might be the factors affecting students' word stress errors.

Keywords: English, Production, Recognition, Thai university students, Word stress

Introduction

English word stress pronunciation helps promote intelligibility which is considered the ultimate goal of communication. To communicate effectively with native English speakers or non-native speakers, pronunciation should be accurate enough to be always understood (Harmer, 1991). Fraser (2000) stated that learners who study English as a foreign language (EFL) with proper pronunciation can easily make themselves understood even when they make some lexical or grammatical mistakes; however, those learners who can speak English correctly but pronounce unclearly may encounter problems when interacting with other non-native speakers or native speakers of English. Pronunciation errors can lead to misunderstanding or cause difficulties for the person who is interpreting the message. Tuan (2018) stated that EFL learners are often faced with some pronunciation problems when they speak English; one of

them is the inaccurate production of word stress, especially their inability to produce stress contrasts of multisyllabic words. For Thai students, English speaking skills still cause problems for them since English is not their native language and the English and Thai languages are different. The differences between English and Thai occur in both syntactic and phonological systems. Stress is one of the suprasegmental features which causes difficulty for Thai students. In English, stress is significant because it differentiates the meanings of the words, whereas tone is significant in Thai. Isarankura (2018) mentioned that in Standard Thai, many linguists seem to agree that word-final position has the strongest stress. This means stress is fixed in Thai words and it always falls on the last syllable, irrespective of the number of syllables within a word. Because of the differences between the English and Thai word stress systems, English word stress can be said to be one of the major problems in the pronunciation of English among Thai EFL learners (Jaiprasong & Pongpairoj, 2020). Since the position of stress in English words is not fixed, Thai speakers of English often find it difficult to place stress on the right syllables of English polysyllabic words. So, incorrect stress placement is a common cause of intelligibility problems (Rogerson- Revell, 2012).

Ladefoged and Johnson (2011) expressed that stress is an important feature of utterances. It applies to individual vowels, consonants and whole syllables. A syllable or word is stressed when it is pronounced with more force than other syllables or words. Simultaneously, listeners can recognize that a stressed syllable in a word is louder, stronger, and slightly higher in pitch than the rest of the syllables or an unstressed syllable. Roach (2009) classified two aspects of English word stress; word stress perception and word stress production. In word stress production, the stressed syllable is pronounced longer in vowel duration, louder, and higher in pitch than unstressed syllables. From the perceptual point of view, one characteristic that all stressed syllables share in common is prominence.

Many previous research studies also showed that Thai students have difficulties with their speaking skills (Khamkhien, 2010; Sahatsathasana, 2017; Jaiprasong & Pongpairoj, 2020). Word stress misplacement is one possible cause of the problems. To be able to communicate effectively and intelligibly in oral English, non-native speakers need to speak English with correct word stress placement in order to be understandable to other listeners (Morley 1989, cited in Murphy, 1991; Hedge, 2000; Jenkins, 2000). Moreover, Underhill (1994) stated that pronouncing words with correct sounds but wrong stress placements are more difficult to understand than words with the correct word stress, but incorrect sounds.

In English, word stress is one of the suprasegmental features, and every word must have a prominent stress. When listening to native speakers of English, we will find that some syllables of the utterances we hear are louder, longer in vowel duration or higher in pitch. For example, when we say the word "salad", the first syllable will be higher in pitch, longer in vowel duration, and louder than the second syllable. According to Underhill (1994), some long polysyllabic words can have secondary stress. For example, when we say the word "examination" the primary stress falls on the fourth syllable, whereas the secondary stress falls on the second syllable. The placement of the primary stress in the word also helps determine the meaning and

grammatical category of the word. For example, it can distinguish nouns from verbs, as in an OBject, and to obJECT.

Jotikasathira (1999) classified three degrees of stress; primary, secondary, and weak stress and also stated that every word in English must have a primary stress. However, there are no fixed rules about the placement of stress but some observations can help identify the stress position. For example, disyllabic words having the same spelling may be used either as a noun or a verb. In most cases, the noun is stressed on the first syllable, and the verb is stressed on the second. For the word 'present', if the stress is on the first syllable (PREsent), it functions as a noun, but if the stress is on the second syllable (preSENT), it functions as a verb. Hence, acquiring word stress in English is problematic for Thai students because there are no exact rules to determine which syllable receives primary stress. This is in line with Jenkins (2009) stating that stress placement is the element causing most difficulty to L2 learners, and Bourjan (2003) who pointed out that Thai students had problems with stress placement in their pronunciation of major categories of English words; nouns, verbs, adjectives, and adverbs. However, to be able to communicate effectively and intelligibly in English speaking countries, non-native speakers of English need to be able to produce understandable sounds (Nipa, 2006). Therefore, spoken English with correct word stress placement will be comprehensible to other competent listeners (Morley 1989, cited in Murphy, 1991; Hedge, 2000; Jenkins, 2000).

From the researcher's teaching experience as an English teacher, word stress is one of the major problems in the English speaking of Thai learners. Therefore, there are many studies focusing on English word stress. Most of the previous studies of word stress focused on word stress production and the variables such as language proficiency, gender, and L1 transfer that affected stress production (Khamkhien, 2010; Watanapokapul, 2010; Plasangket, 2016; Jaiprasong & Pongpairoj, 2020;). Thus, the recognition of word stress and linguistic variables such as the complexity of the stress patterns and syllables need to be explored. In order to fill the gaps, this study aimed to investigate word stress recognition and production of two-syllable, three-syllable and four-syllable English words of second year English major students who had basic knowledge of Linguistics at Huachiew Chalermprakiet University, Thailand, and discover the correlation between the students' competence in recognizing and producing English word stress, and the factors affecting word stress recognition and production.

Methodology

Participants

The participants of this study were 14 second year English major students studying EG 2503 English Linguistics 2 course at Huachiew Chalermprakiet University in academic year 2020. All of them are Thai students who had never been to study in English speaking countries. They have moderate proficiency in English. Their average scores (GPA) at the end of the first semester of the academic year 2020 were between 2.50-3.00. The justification for choosing the second year students was that these students had already taken two English Linguistics courses in the previous academic year. The first English Linguistics course introduces students to fundamental notions in phonetics, phonology, morphology, and syntax, and the second English

Linguistics course focuses on phonetics and phonology in details. This would serve one of the objectives of this study; to test the recognition and production of English word stress with participants who had basic knowledge of English Linguistics.

Instruments

The data were collected by using a word stress assignment which comprised of a list of 45 common words. They are 15 two-syllable words, 15 three-syllable words, and 15 four-syllable words. Since all of the participants study English Linguistics course, it was expected that these students were familiar with the words selected from the Supplementary Handouts of the English Linguistics 2 course. So, a list of 60 words was randomly selected from the Supplementary Handouts of the English Linguistics 2 course. To ensure the data obtained from the participants could be generalized, the list of 60 words was used in a pilot study with 5 students who volunteered to do this task and did not take part in the study. If those students have difficulty understanding some words on the list, their words will be excluded from the list.

Table 1 The list of two-syllable words, three-syllable words, and four-syllable words were as follows

Two-syllable words	Three-syllable words	Four-syllable words
perform /pɚˈfɔːrm/	vitamin /ˈvaɪ.ţə.mɪn/	reality /riˈæl.ə.ti/
expect /ɪkˈspekt/	certainly /ˈsɝːtən.li/	politician /ˌpɑː ləˈtɪʃ. ən/
Chinese /tʃaɪˈniːz/	benefit /ˈben.ə.fɪt/	discovery /dɪˈskʌv ɚ.i/
express /ɪkˈspres/	volunteer /ˌvɑːlənˈtɪr/	apologize /əˈpɑː lə. dʒaɪz/
forest /ˈfɔːrɪst/	continue /kənˈtɪn.juː/	calculator /ˈkæl. kjə. leɪ. ţɚ/
ocean /ˈoʊ.ʃən/	government /ˈgʌv. ɚn. mənt/	conversation /ˌkɑːn vɚˈseɪ. ʃən/
knowledge /ˈnɑːlɪdʒ/	relative /ˈrel. ə. ţɪv/	dictionary /ˈdɪk. ʃən. er.i/
return /rɪˈtɝːn/	guarantee /ˌger.ən.ˈtiː/	geography /dʒiˈɑː grə.fi/
traffic /ˈtræf.ɪk/	calendar /ˈkæl. ən.dɚ/	economic /i.kəˈnɑː. mɪk/
challenge /ˈtʃæl.ɪndʒ/	elephant /ˈel. ə. fənt/	automatic /ˌɑː ţəˈmæţ ɪk/

Two-syllable words	Three-syllable words	Four-syllable words
mistake	organize	environment
/mɪˈsteɪk/	/ˈɔːr. gən. aɪz/	/ɪnˈvaɪ. rən. mənt/
income	manager	electronic
/ˈɪn.kʌm/	/ˈmæn. ə dʒɚ/	/iˌlekˈtrɑː nɪk/
unfair	performance	comprehension
/ʌnˈfer/	/pɚˈfɔːr məns/	/ˌkɑːm prəˈhen. ʃən/
control	recommend	emergency
/kənˈtroʊl/	/ˌrek əˈmend/	/ɪˈmɝː dʒən.si/
silence	faculty	independence
/ˈsaɪ.ləns/	/ˈfæk əl t̬i/	/ˌɪn. dɪˈpen. dəns/

Data collection

The data collection took place in the second semester of academic year 2020. The word stress assignment was distributed to the participants in English Linguistics 2 class in the fourth week of the semester. For the first step after the consent process, the participants were allowed to place the stress mark (/) over the stressed syllable in the word stress assignment which contains 15 two-syllable words, 15 three-syllable words, and 15 four-syllable words within 45 minutes. After doing the assignment, the participants were given 20 minutes to prepare themselves before reading all of the words in the assignment. Each participant pronounced all of the 45 words only once, and the data were recorded. The researcher was responsible for administering and recording the participants' pronunciation for data analysis of word stress. All the recordings were listened to by three raters: the researcher and two native speakers of English working as English lecturers at Huachiew Chalermprakiet University.

Data Analysis

The researcher scored the word stress assignment manually; a 1 was assigned to each correct answer, and a 0 to each incorrect one. The error frequencies and percentages of two-syllable, three-syllable and four-syllable English words were calculated. Then, the participants read all 45 English words, and their readings were recorded. The researcher and two native English teachers listened to each student's recording and marked the primary stress on the target words which corresponded to each student's pronunciation. The error frequencies and percentages of two-syllable, three-syllable and four-syllable English word pronunciation were calculated. Each student's stress marking task and word stress production task were compared and analyzed. In the final stage, the interview data was collected and analyzed to find out whether there were any factors attributable to the word stress errors.

Findings

Students' stress placements of two-syllable, three-syllable and four-syllable English words

For the stress placement task, the study revealed that most of the students can correctly assign the primary stress to two-syllable, three-syllable and four-syllable English words. The results were as follows.

Table 2 The numbers of the correct and incorrect placements of stress of two-syllable words, three-syllable words, and four-syllable words

Words	No of the correct stress placements	No. of the incorrect stress placements
Two-syllable words	164 (78.10%)	46 (21.90%)
Three-syllable words	148 (70.48%)	62 (29.52%)
Four-syllable words	153 (72.86%)	57 (27.14%)
Total	**465 (73.81%)**	**165 (26.19%)**

Table 2 shows the number of the correct and incorrect placements of stress of two-syllable words, three-syllable words, and four-syllable words. The results illustrated that most of the students have good mastery in assigning the stress on two-syllable words. 78.10% of the stress placements were correct while the percentages of the correct placements on the four-syllable words and three-syllable words were 72.86%, and 70.48% respectively.

For two-syllable words, it was found that all students can assign the primary stress correctly to the word "traffic" whereas the word "forest" caused difficulty for most of the students because only 50% of the stress placements were correct and 50% were incorrect. For the three-syllable words, most of the students assigned the stress correctly to the word "performance" that receives the primary stress on the second syllable, but they have difficulty with the word "recommend" which receives the primary stress on the last syllable. For the four-syllable words, the results showed that most of the students assigned the primary stress correctly in the word "conversation", and most of them have difficulty in assigning stress to the word "reality" which receives the primary stress on the second syllable. Moreover, the number of the incorrect placements was lower than for the three-syllable words.

Students' stress productions of two-syllable, three-syllable and four-syllable English words

For the stress production task, the study revealed that most of the students can pronounce the primary stress of the two-syllable, three-syllable and four-syllable English words correctly. The results were as follows.

Table 3 The numbers of the correct and incorrect stress productions of two-syllable words, three-syllable words, and four-syllable words

Words	No. of the correct stress productions	No. of the incorrect stress productions
Two-syllable words	174 (82.86%)	36 (17.14%)
Three-syllable words	135 (64.29%)	75 (35.71%)
Four-syllable words	151 (71.90%)	59 (28.10%)
Total	**460 (73.01%)**	**170 (26.99%)**

Table 3 shows the numbers of the correct and incorrect stress productions of two-syllable words, three-syllable words, and four-syllable words. The results illustrated that most of the students have good mastery in producing the stress on two-syllable words. 82.86% of the stress productions were correct while the percentages of the correct productions of the four-syllable words and three-syllable words were 71.90%, and 64.29% respectively. Four words that all the students pronounced correctly were “perform”, “ocean”, “return”, and “knowledge”.

The relationship between the students’ competence in recognizing and in producing English word stress

To examine the relationship between the students’ competence in recognizing and in producing English word stress, the numbers of the correct productions of the two-syllable words, three-syllable words, and four-syllable words were presented and then compared with the numbers of the correct recognitions or stress placements of the two-syllable words, three-syllable words, and four-syllable words. The results were as follows.

Table 4 The numbers of the correct and incorrect recognitions and productions of stress of two to four syllable words

Words	No. of the correct and incorrect stress recognitions	No. of the correct and incorrect stress productions
Two-syllable words		
Correct	164 (78.10%)	174 (82.86%)
Incorrect	46 (21.90%)	36(17.14%)
Three-syllable words		
Correct	148 (70.48%)	135 (64.29%)
Incorrect	62 (29.52%)	75 (35.71%)
Four-syllable words		
Correct	153 (72.86%)	151 (71.90%)
Incorrect	57 (27.14%)	59(28.10%)

Table 4 shows the numbers of the correct and incorrect recognitions and productions of stress of two-syllable words, three-syllable words, and four-syllable words. The results revealed that most of the students did not have much difficulty in the stress recognition and production of two-syllable words, three-syllable words, and four-syllable words. Over 70% of stress recognitions and productions were correct. Three-syllable words caused difficulty to the students because the numbers of the incorrect recognitions and productions of the three-syllable words were the highest. The incorrect recognitions and productions of the three- syllable words were 62 (29.52%) and 75 (35.71%) whereas the incorrect recognitions and productions of the two-syllable words were 46 (21.90%) and 36 (17.14%) and of the four-syllable words were 57 (27.14%) and 59 (28.10%). The study revealed that there were small differences of the correct and incorrect numbers between the stress recognition and production.

To explain the factors affecting stress recognition and production, the researcher interviewed all 14 students. The interview focused on what the students thought about their word stress production and their English language exposure. Most students agreed that English word stress is difficult because each word has a different stress pattern. For example, if the word "present" functions as a verb, the primary stress falls on the second syllable. If it functions as a noun, the primary stress falls on the first syllable. They said two-syllable words were not difficult because most two-syllable words have the primary stress on the first syllable. They also added that four-syllable words do not cause difficulty for them, but three-syllable words cause much difficulty for them because they cannot apply the stress rules they have learned and they have inadequate knowledge of English word stress.

Conclusion and discussion

For word stress recognitions and productions, the results revealed that most of the students do not have much difficulty in pronouncing and assigning the stress to two-syllable, three-syllable, and four-syllable words. Above 70 % of word stress placements and word stress productions of two-syllable words, three-syllable words, and four-syllable words were correct.

According to the stress rules, most of the two-syllable words receive the primary stress on the first syllable (Jotikasathira, 1999), and there are only two choices, either first or final syllable that should be stressed (Krajo, 2015). Therefore, the students can pronounce and assign the primary stress on the two-syllable words correctly. The incorrect stress placements and productions of some words like the word "forest" may be caused by the different stress patterns between Thai and English and the false analogy because the students may think that the word "forest" has the same stress pattern as the word "arrest" that they already know.

For the three-syllable words, the major stress falls on the first or second syllable (Kanoksilapatham, 2010). Most of the students can pronounce and assign the primary stress to the word "performance" correctly. However, the results revealed that the number of the incorrect placements and productions of the three-syllable words was the highest. This in line with Krajo (2016) who found that three-syllable words were more problematic than two-syllable words, and the misplacement of stress was caused by the influence of vowel length and vowel height.

Kanoksilapatham (2010) mentioned that the placement of primary stress of the four-syllable words is predictable in the words with some suffixes. The suffixes indicating that the syllable preceding them receives primary stress are -ial, -ian, -ible, ic, -ical, -ient, -ify, -(t)ion, -ior,-ious, -ish, -ity, -logy,-meter, -ive, -ual, and-wise. The study revealed that four-syllable words which contain suffixes did not cause difficulty to the students except the word "reality" which most students put the primary stress on the first syllable and pronounced the first syllable louder than others. This is line with Jaiprasong & Pongpairoj (2020) who found that the advanced learners had better production of English word stress than the intermediate learners in three categories: 1) suffixes affecting stress shift, 2) suffixes demanding stress, and 3) compound verbs.

For word stress production, the study also revealed that the students did the production task better than the recognition task in pronouncing the two-syllable words. This is because the two-syllable words are not complex, and the stress patterns can be predicted by the rules. This is in line with Kreidler (1997) who stated that in order to decide on the position of stress in words, the word class, the number of syllables in a word, the distinction between strong syllables and weak syllables, and the recognition of certain specific prefixes and suffixes should be considered.

However, there were small differences between the stress recognition and production because the total number of correct recognitions of stress of two-syllable words, three-syllable words, and four-syllable words was approximately 78% and the total number of correct productions of stress of two-syllable words, three-syllable words, and four-syllable words was approximately 82%. This showed that the students performed better in the production task than they did in the recognition task. This could be explained by the reason that the students had time to prepare themselves before reading a word list, and they were familiar with those words because they saw them on the recognition task.

The students' word stress errors may be caused by 1) the differences of the stress patterns between English and Thai, 2) the complexity of the syllables, and 3) the inadequate knowledge of syllable structure. Because of the differences of stress pattern between English and Thai, the results revealed that the students found it difficult to assign stress to the right syllables of the English words. In Thai, the stress pattern is fixed, whereas it is not fixed in English. The study revealed that the most problematic word in the group of two-syllable words was "income" which receives the primary stress on the first syllable. For three-syllable words, the most problematic word was "recommend" which receives the primary stress on the last syllable, and for four-syllable words, the most problematic word was "reality". In English, the number of syllables, affixes, and/or the grammatical category of the word are believed to have a significant impact on word stress placement (Celce-Murcia et al., 1996).

The complexity of the syllable caused difficulty to students in assigning and pronouncing the primary stress. In this study, the number of the incorrect stress recognitions and productions of the three-syllable words and four-syllable words was higher than for two-syllable words. The number of the incorrect stress recognitions and productions of three-syllable words was the highest because most of the three-syllable words do not end with the

suffixes which can be predicted by the rules, and the primary stress falls on different position. So, it was quite difficult for the students to identify the stressed syllable correctly whereas all the four-syllable words in this study have suffixes which can be predicted according to the rules or the patterns of word stress (Jotikasathira, 1999; Kanoksilapatham, 2010).

Roach (2009) stated that syllable structure helps identifying the stress pattern of English words because a strong syllable is normally stressed, while the weak one is unstressed. The study revealed that four-syllable words caused less difficulty than three-syllable words because most of the four-syllable words contain suffixes, and the placement of primary stress is predictable in the words with some suffixes. The results suggested that the students who took linguistics courses were aware that certain suffixes do not receive the primary stress and the syllable preceding some suffixes like -ial,-ian,-ive, and -ual receives the primary stress.

In conclusion, it is clear that English is a free-stress language. It means that word stress can fall on various syllables, whereas stress in Thai is fixed. Because of this, English word stress still causes difficulty to Thai students and misplaced word stress in English may lead to communication breakdown. Therefore, sufficient knowledge and practice in stress placement rules can help enhance students' communicative competence and performance. Students should pay more attention to this feature and they may practice imitating the teachers or the instruction on the CD, and then his or her ability to use proper stress patterns when speaking English will improve (Dales and Poms, 2005).

Implications of the study

This study addressed the difficulty of Thai students in using correct stress patterns when pronouncing English polysyllabic words. The results of this study offer some pedagogical implications.

Firstly, this study can help both teachers and students to become aware of word stress recognition and production in English especially the three-syllable words.

Secondly, teachers can prepare and provide proper materials when teaching word stress pronunciation and EFL learners should practice assigning stress patterns to polysyllabic words and producing them properly.

Lastly, it is clear that learning English linguistics helps Thai students understand the nature and the rules of language. The students can assign and pronounce English polysyllabic words with correct patterns more accurately. This shows that knowledge of linguistics might be the first essential step in learning a foreign language.

Limitations of this Study

This research was limited to exploring the recognition and production of English word stress of 14 Thai university students who had basic knowledge of Linguistics. So, the findings of this study remain inconclusive due to the limited number of the students. Subsequent studies analyzing a larger group of students should be done. In addition, there is a limitation in word selection from the Supplementary handouts of the English Linguistics 2 course to assess the

students' word stress scores; thus, future research should be systematically supplemented with other sources in order to assess pronunciation of English word stress of Thai students.

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