An Investigation of the Needs, Abilities, Opinions, and Anxiety Levels of English Teaching Major Students Studying an English Pronunciation Course in a Blended Learning Environment

การศึกษาความต้องการ ความสามารถ ความคิดเห็น และระดับความกังวลของนักศึกษาสาขาการสอนภาษาอังกฤษในการเรียนวิชาการออกเสียงภาษาอังกฤษด้วยวิธีการเรียนรู้แบบผสมผสาน

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Abstract

The study investigated the needs and abilities of students taking an English pronunciation course in a blended learning (BL) environment. The students' opinions toward this course and their anxiety about English pronunciation were also examined. The participants were 72 first-year English teaching major students at Udon Thani Rajabhat University. The instruments consisted of a questionnaire of needs, an ability test,

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a questionnaire about the students' opinions, and a questionnaire about the students' levels of anxiety. The instruments were developed by taking into account both validity and reliability. The findings were as follows. Firstly, the students indicated the highest scores for needs on word stress ($\bar{x}$ = 4.36) and sentence stress ($\bar{x}$ = 4. 24). Secondly, the scores for word stress in the post-test were significantly higher than those in the pretest (Pre: $\bar{x}$ = 0.43; Post: $\bar{x}$ = 0.80), and the sentence stress scores in the post-test were significantly higher than those in the pretest (Pre: $\bar{x}$ = 0.44; Post: $\bar{x}$ = 0.80) after implementing BL for word and sentence stress development. Thirdly, the participants were highly satisfied with studying the English pronunciation course in a BL environment ($\bar{x}$ = 4.25). Fourthly, the student's anxiety levels significantly lowered (Pre: $\bar{x}$ = 3.24); Post: $\bar{x}$ =3.19). This means that the pronunciation course through a BL environment could help reduce pronunciation anxiety.

Keywords: EFL learners' needs, abilities, opinions, anxiety, English pronunciation, blended learning

บทคัดย่อ

งานวิจัยชิ้นนี้มีวัตถุประสงค์ เพื่อสำรวจความต้องการและประเมินระดับความสามารถด้านการออกเสียงภาษาอังกฤษของนักศึกษาที่เรียนการออกเสียงในการเรียนแบบผสมผสาน เพื่อประเมินความคิดเห็นหลังเรียนและศึกษาระดับความกังวลในการออกเสียง กลุ่มตัวอย่างเป็นนักศึกษาชั้นปีที่ 1 สาขาการสอนภาษาอังกฤษ มหาวิทยาลัยราชภัฏอุดรธานี จำนวน 72 คน เครื่องมือในการวิจัย คือ แบบสำรวจความต้องการการออกเสียง แบบทดสอบการออกเสียง แบบสำรวจความคิดเห็น แบบสำรวจระดับความกังวล ซึ่งได้รับการตรวจสอบโดยผู้เชี่ยวชาญเพื่อหาค่าความเที่ยงตรงและความเชื่อมั่น ผลวิจัย

พบว่า ข้อที่ 1 คะแนนความต้องการสูงสุดคือการเน้นเสียงในระดับคำ ($\bar{X}$ = 4.36) และระดับประโยค ($\bar{X}$ = 4.24) ข้อที่ 2 คะแนนความสามารถด้านการออกเสียงมีการพัฒนาสูงขึ้นอย่างมีนัยสำคัญทางสถิติทั้งในระดับคำ (ก่อน: $\bar{X}$ = 0.43; หลัง: $\bar{X}$ = 0.80) และระดับประโยค (ก่อน: $\bar{X}$ = 0.44; หลัง: $\bar{X}$ = 0.80) หลังจากการเรียนแบบผสมผสาน ข้อที่ 3 นักศึกษาพึงพอใจต่อการเรียนการออกเสียงในการเรียนแบบผสมผสานในเกณฑ์สูง ($\bar{X}$ = 4.25) ข้อที่ 4 นักศึกษามีความกังวลลดลงอย่างมีนัยสำคัญทางสถิติ (ก่อน: $\bar{X}$ = 3.24; หลัง: $\bar{X}$ = 3.19) ดังนั้นการเรียนการออกเสียงในการเรียนแบบผสมผสานอาจจะช่วยลดความวิตกกังวลในการออกเสียงได้

คำสำคัญ: ความต้องการของผู้เรียนภาษาอังกฤษในฐานะภาษาต่างประเทศ ความสามารถ ความคิดเห็น ความกังวลการออกเสียง ภาษาอังกฤษ การเรียนแบบผสมผสาน

Introduction

English is an international language, and pronunciation is an important element in learning to speak English as part of learning English as a second and foreign language. Morley (1998) mentioned that pronunciation plays an important role in helping people become better English speakers, as clear pronunciation supports communication flow. Correct pronunciation means the listeners can understand the message; however, pronunciation errors may result in miscommunication (Nakin & Inpin, 2017). Furthermore, errors in pronunciation may occur in non-native speakers because they have different mother tongues, cultures, and contexts (Winaitham & Suppasetseree, 2012).

Non- native speakers encountering problems in using the target language may result in anxiety (Horwitz, & Cope, 1986). Pronunciation Anxiety (PA) can be seen in non- native speakers (Kralova & Mala, 2018). Baran-Łucarz (2014) defines PA as a feeling of fear about negative foreign language pronunciation self-perceptions, fear of negative evaluation, beliefs about the importance of pronunciation, or difficulty in learning related to the sounds involved in pronouncing the foreign language. PA may result in unintelligible pronunciation, and this can affect students' learning of a foreign language.

In the study reported in this article, the ultimate goal was to reduce PA. Some studies have provided ways to decrease PA to help students improve their learning of pronunciation. Firstly, identifying students' pronunciation problems may be a way to develop pronunciation ability (Derwing & Munro, 2015). In the Thai context, numerous studies have investigated students' pronunciation problems, both segmental and suprasegmental features (Kanokpermpoon, 2007; Tanthanis, 2013; Chakma, 2014; Pradesh, 2015; Supanamoke, 2015). Secondly, preparation has been seen as a way to help students be more confident (Kondo & Ying-Ling, 2004). To decrease PA, pronunciation ability training may be a way to increase the intelligibility of pronunciation (Derwing & Munro, 2015). Implementing explicit pronunciation teaching may enhance pronunciation improvement. For instance, Al-Tamimi & Attamimi (2018) investigated the effects of explicit pronunciation instructions on developing students' speaking skills and their attitudes toward the pronunciation training offered. The findings were that explicit pronunciation instruction is an effective method of improving students' speaking skills as well as their attitudes toward pronunciation training. Thirdly, preferences in EFL learning may make demotivated students more interested (Kondo & Ying-Ling, 2004). Learning with affection and motivation (students' internal

factors) may improve pronunciation (Derwing & Munro, 2015). People who have positive feelings toward the target language are more likely to be successful at learning pronunciation (Brown, 1992). Therefore, needs analysis may support students' learning, and this may be a way to reduce PA. According to West (1994), need analysis refers to a systematic analysis of all the necessary objective information that learners will be required to negotiate when using a foreign language in a target situation, and how learners might be efficient in using the target language during the period of training. Furthermore, studying students' learning needs in pronunciation may enhance pronunciation development and improve confidence in pronunciation intelligibility. However, very little research has been conducted on students' needs in learning pronunciation. Some studies, for example, Kamsa-ard (2018) identified 72 Thai university students' pronunciation needs. The results showed that a better knowledge of segmental and suprasegmental features, i. e. , consonants, vowels, connected speech, stress, and intonation, was required by the non-English major students. Similarly, Zarzycki (2020) identified pronunciation needs for aspects of pronunciation learning with 50 Omani ESL students. The findings showed that the students needed both segmental and suprasegmental features, especially stress and intonation.They needed to read and write phonetic transcription in English. Moreover, more usage of a dictionary was needed. Students needed to better understand how to pronounce correctly. In short, decreasing PA consists of identifying students' pronunciation problems, preparing them for learning pronunciation, and identifying their pronunciation learning needs.

The use of technology in teaching pronunciation may also enhance students' language learning. Over the past decade, several studies have investigated technological tools to assist pronunciation teaching. For example, in 2014, Alipanahi investigated the effectiveness

of technology-based pronunciation instruction to help EFL students in Iran to better understand and learn correct stress patterns. In 2019, Arunsirot (2020) examined the effectiveness of Augmented Reality (AR) technology to develop students' ability to produce English consonant sounds and explored students' satisfaction with the use of AR technology. In 2020, Taladngoen et al. (2020) identified the pronunciation abilities of Thai EFL university students by using Google Translate. Similarly, Wongsuriya (2020) evaluated students' performance in English pronunciation using the Google Translate mobile application. In 2021, Visaltanachoti and Viriyavejakul (2021) developed and prototyped an AI technology (AIT) model for use in teaching English pronunciation to Thai students. The findings of these studies indicate that technological tools may assist in pronunciation instruction, and it appears to be very effective in improving students' attitudes, perceptions, learning, and pronunciation ability.

Very few studies have been conducted on pronunciation learning through technology to meet instructional goals. For example, Winaitham (2012) claimed that using technology in e-learning can introduce examples of pronunciation and discourse from native speakers. She examined errors in English stress pronunciation and trained her participants to improve their pronunciation ability by using the designed courseware. The results showed that the participants' pronunciation ability improved after the treatment. In addition, using computers on campus was inconvenient for the participants. Kettem & Phonlabutra (2020) developed blended learning (BL) course to develop the pronunciation of Thai university students. A BL course refers to a combination of a traditional class and an e-learning class. The students studied pronunciation through a learning management system (LMS). The results showed that the students improved and that they were highly satisfied with using the BL approach in a pronunciation course. In summary, previous studies have seen positive findings after using technology (e-learning) in a BL class.

Considering BL in more detail, it is the combination of a traditional learning environment and an online learning environment (Garrison, 2008). Several studies have provided evidence supporting online teaching. For example, Fitria (2020) investigated lecturers' opinions regarding using an online learning system in Indonesia. This study found that the Google Meet application was useful in EFL teaching. Similarly, Sakulprasertsri, et al. (2021) revealed that Zoom was useful for joining three webinars on English Language Teaching (ELT) during the COVID-19 pandemic in Thailand. Moreover, Microsoft Teams (MT) provides video conferencing, chat, meetings, notes, and attachments (Hubbard & Bailey, 2018). In this case, Google Meet was selected as an online learning platform for the BL pronunciation course because it has functions that support the teaching of pronunciation, such as the ability to share videos, sound files, and online exercises.

The current study started more holistically from the participants' real learning needs, then proposed the use of BL in a pronunciation course, examined the students' pronunciation ability, and examined the degree of their pronunciation anxiety. The research questions were as follows:

1. What are the student needs when studying an English pronunciation course?
2. What are the students' English pronunciation abilities before and after studying the English pronunciation course?
3. What are the students' opinions toward studying the English pronunciation course in a BL environment?
4. What are the students' anxiety levels before and after studying in such a course?

Literature Review

1. Needs in Learning Pronunciation

A needs analysis in English for Specific Purposes (ESP) is a learning approach where the target situation is embedded in the course (Hutchinson & Waters, 1987). Moreover, course development should be based on identifying students' needs. Needs in a language-centered approach can be seen as the ability to understand or use the language of the target situation. It can be separated into two categories, namely target needs, and learning needs. Hutchinson & Waters (1987) stated that a needs analysis can be interpreted in terms of 'Needs, Wants, Necessities and Lacks' with regards to language and learning needs. The target need is an important term. The researcher needs to answer the question "What does the learner need to do in the target situation?" This can be viewed in terms of necessities, lacks, and wants. Necessities refer to the requirement of the academic or of work, while lacks refer to what the learners need to know or are deficient in, and wants refers to what the learners hope or expect to achieve. In contrast, learning need is different, as it has to answer the question of "How are we going to the destination?" Moreover, Hutchinson & Waters (1987) recommended many instruments to identify students' needs. The needs can be collected using interviews, observations (as a participant or non-participant observer), or questionnaires, and these instruments can be triangulated. Some related studies have considered pronunciation needs. Kamsa-ard (2018) identified Thai university students' pronunciation needs. The results showed that a better knowledge of segmental and suprasegmental features was identified by the learners. However, the study did not propose a way to train students to

achieve their real needs. Similarly, Zarzycki (2020) found that both segmental and suprasegmental features were important to develop in the case of Omani ESL students. Therefore, the present study aimed to identify the real needs of Thai university students to meet their pronunciation ability needs.

2. English Pronunciation

The phonological acquisition in the second language referred to in the present study focuses on the differences between English and other phonological systems, consonants, and vowels. Linguistics studies in this subfield mainly focus on segmental and suprasegmental features. Segmental features concern phonemes, whereas suprasegmental features refer to linking, intonation, and stress (Celce-Murcia et al., 1996). Stress plays an important role in pronunciation development at the level of the suprasegmental features of utterances (Ladefoged, 2006). It refers to how a syllable or a word is pronounced, with more force, louder, and with a slightly higher sound than other syllables. Moreover, a longer word can be stressed over more than one syllable. Words of one or more than one syllable contain stressed and unstressed syllables (Underhill, 2019). Stress placement plays an important role in speaking skill development because it conveys the meaning of the spoken language. Stress can be separated into word stress and sentence stress (Kelly, 2011).

Word stress is the characteristic pattern of two kinds of syllables, namely stressed and unstressed syllables (Dalton & Seidlhofer, 1994). Kreidler (1997) proposed dividing the stress patterns of English words into three types, where stress refers to the specific syllables that should be focused on. The first is the last syllable of the word (the ultimate syllable), such as agree,

obey, and divide. The second is the second-last syllable (penultimate syllable), or the 'penult', such as in 'discover', 'examine', and 'inhabit'. The third is the third from the last syllable (antepenultimate syllable), or the 'antepenult', such as in 'cinema', 'citizen', and 'opera'. Moreover, Roach (2010) noted that there exist two different types of suffixes, i.e., neutral and stress-moving suffixes. Celce-Murcia et al. (1996) added that compound words are as follows: noun and noun, adjective and noun, verb and noun, and so on. Several studies have examined word stress problems in English. Khamkhien (2010) examined pronunciation ability and determined the factors affecting the pronunciation competence of Thai students. The results showed that the participants had somewhat limited knowledge of using word stress, and gender was identified as the most significant factor in the pronunciation test scores, with female students achieving higher scores. Similarly, Plansangket (2016) examined the word stress of Thai graduate students to complete a stress assignment test featuring 15 disyllabic pairs, e.g. 'a present' and 'to present', in each sentence. The results showed that the participants had limited competence in word stress due to lacking important knowledge of stress rules. However, some related studies note that pronunciation stress can be learned. Tehlah (2012) investigated the word stress suffixion of Thai university students in Songkhla, Thailand. The experimental group was taught by using explicit suffixation instruction, and it showed positive results in developing English pronunciation. Similarly, Nguyen & Ingram (2005) compared the word stress ability of Vietnamese students using twenty minimal pairs of nouns and verbs, e.g., **con**duct and con**duct**, finding the experimental group improved after the treatment.

Sentence stress consists of content and function words. The content words are typically stressed, otherwise, the function words are unstressed (Roach, 2000). Content words are the words that present the core meaning of the sentence, such as nouns, main verbs, adjectives, and adverbs. Function words are grammatical words that put the sentence together, such as articles, pronouns, conjunctions, auxiliary verbs, and prepositions. There is normally no need to stress the articles or the prepositions in utterances. Some previous studies have investigated sentence stress in the Thai context. Sahatsathatsana (2017) investigated students' opinions of pronunciation problems. The results showed that all the participants agreed that they had pronunciation problems at both word and sentence stress levels in sentences. Jindapitak (2010) investigated the conversation between two Thai speakers. He found a stress problem in sentences, as one of the participants spoke slowly and stressed every single word unnecessarily, including function words. Similarly, Cabrera (2016) investigated the pronunciation ability of the students of Suan Sunantha Rajabhat University, finding especially stress pronunciation to be limited. She suggested that subsequent studies should propose ways to teach stress to students. In addition, Nguyen (2019) investigated Vietnamese teachers' and students' pronunciation needs. The participants revealed that they preferred to be taught pronunciation explicitly and systematically. This means that the students wanted to take a pronunciation course with examples from native speakers and with the teacher providing comments when they pronounced sounds incorrectly.

3. Blended Learning and Pronunciation

The main goal of this study is to optimize blended learning (BL) models in language learning to develop students' pronunciation. Even though BL combines the face-to-face learning environment with online learning (Garrison & Vaughan, 2008), it is very difficult to find appropriate activities and tasks to develop students' pronunciation skills, due to students' different levels of English proficiency and their diverse attitudes towards learning English. Online learning may be suitable for students who have a high degree of responsibility for their learning and who can direct their learning with or without their teachers' supervision (Knowles, 1975). Therefore, this section reviews research studies that have investigated students' pronunciation development after implementing online learning or a BL environment, whether in international or in Thai EFL contexts. Notably, Winaithum (2012) proposed Stress and Pronunciation Multimedia Courseware (SPMC) for pronunciation development. The study showed that the SPMC lesson helped learners to improve their English pronunciation and stress. Even though the courseware was convenient for the participants' development of their pronunciation, the participants needed to spend time practicing at the university's laboratory. It would have been more useful if the participants had the opportunity to study pronunciation both in and outside of the class. Therefore, the study proposed BL for a pronunciation course. Wongsuriya (2020) applied the Google Translate mobile application to improve Thai students' ability to pronounce English. The pre-and post-test results showed that even though the participants were from rural areas where there may be few or no native-speaker models, all their pronunciation ability scores significantly improved. Kettem & Phonlabutra

(2020) developed a BL course to develop the pronunciation of Thai university students at Phetchaburi Rajabhat University. The pre and post-test showed that the students improved and that they were highly satisfied with using the BL approach in a pronunciation course.

4. Anxiety in English Pronunciation

Anxiety is the normal feeling that a human has when faced with uncertain situations or something unfamiliar. Anxiety makes a person feel nervous and tense (Morrow & Labrum, 1978). In language learning and teaching, Horwitz et al. (1986) identified foreign language anxiety as comprising three types of anxiety specific to the foreign language classroom: communication apprehension, test anxiety, and fear of negative evaluation. The Foreign Language Pronunciation Anxiety Scale (FLPAS) was implemented to examine participants' English pronunciation anxiety levels before and after an intervention. Its design originated in the Foreign Language Classroom Anxiety Scale Horwitz et al. (1986), and it was further developed in the form of the Phonetics Learning Anxiety Scale (Baran-Bucarz, 2013), which focuses on students' opinions about the weak points of their pronunciation and their worries.

Some studies have investigated the effects of using the Foreign Language Pronunciation Anxiety Scale (FLPAS). Kralova et al. (2017) examined student teachers' English pronunciation anxiety before and after pronunciation training. They also proposed intensive English pronunciation training to reduce the foreign language pronunciation anxiety of pre-service teachers. They created a questionnaire and open-ended questions for measuring the pronunciation anxiety of student teachers and their English pronunciation quality. In the same way, Kafes

(2018) investigated pre-service EFL teachers' English pronunciation anxiety. The results showed that the pronunciation anxiety degree of all participants was at a moderate level. Another study, by Kralova et al. (2018), investigated personality factors and foreign language anxiety. The treatment consisted of pronunciation training. Moreover, Lee (2016) conducted a mixed-method study involving oral corrective feedback to pronunciation. In Thai contexts, Jindapitak (2010), Cabrera (2016), and Niamthet (2016) agree that pronunciation courses should be provided to improve pronunciation. Therefore, the present study aimed to reduce the pronunciation anxiety of students to improve their linguistic achievement.

Research Methodology

1. Participants

This research involved a one-group study. The participants, selected via purposive sampling, were 72 first-year students majoring in the English teaching program of the Faculty of Education at Udon Thani Rajabhat University, in Northeast Thailand. They consisted of 57 females and 15 males, and the students' average age was approximately 19.5 years old. This study proposed teaching a pronunciation course using a BL environment. It was a complimentary course. Concerning the participants' background regarding BL, they had prior experience of one semester in a BL course (an English for Communication course) before participating in this study.

2. Research Instruments

The study employed four main research instruments. Firstly, the needs survey questionnaire, adopted from Kamsa-ard (2018), aimed to identify the participants' needs regarding pronunciation learning. The first part elicited the personal

information of the participants (gender, age, study year, faculty). The second part contained 15 items investigating the pronunciation needs, both segmental and suprasegmental features. The results showed that the IOC value was satisfactory (1.0, with an IOC value of ≥ 0.5 being satisfactory, while ≤ 0.5 is unsatisfactory). Secondly, the pronunciation ability test aimed to test the pronunciation ability of the participants in the pre-and post-tests. This was developed from studies by Niamthet (2016) and Plansangket (2016). This instrument consisted of three main parts. The first part elicited general information, including the name, gender, major, etc. The second part contained 20 items testing word stress and 10 items testing sentence stress. The IOC value was satisfactory, at 1.0. Thirdly, the questionnaire asking about the students' opinions on BL in practicing English pronunciation consisted of six questions. The results showed a satisfactory IOC value of 1.0. Fourthly, a questionnaire aimed to examine the participants' English pronunciation anxiety levels before and after the intervention. This was developed based on Horwitz et al. (1986) Foreign Language Classroom Anxiety Scale (FLCAS) and the Foreign Language Pronunciation Anxiety (FLPA) protocol developed by Baran-Lucarz (2013) and Kralova et al. (2017). The protocol was separated into two parts. The first part elicited general information about the participants. The second part comprised 20 questions about the students' levels of anxiety. The IOC value was satisfactory (1.0).

Teaching Instruments

This section describes how the pronunciation lessons were delivered via a BL class. This was a bespoke course, i.e., the material was designed to meet the participants' needs. The researcher tried to adapt the pronunciation learning material

(word and sentence stress) from the lessons that the researcher obtained and developed from pronunciation books (Celce-Murcia et al., 1996; Roach, 2010; Kelly, 2011). There were two teaching instruments. Firstly, the lesson plan described the learning steps for the pronunciation lessons in the course. Validation was established by obtaining the opinions of three experts after identifying the relationship between the objectives and the contents. Secondly, the pronunciation learning material included MS PowerPoint presentations, MS Word files (pronunciation exercises and tests), and pronunciation videos. Using the formula E1/E2, based on Bramawong's criteria of an 80/80 standard (Bramawong, 2009), the E1/E2 of the lesson plan was 80.93/88.24, i.e., higher than the efficiency criteria (80/80).

Implementation of BL in the Pronunciation Course

Before commencing the learning plan, the participants were already familiar with three-stage task-based learning because the researcher usually conducted the English for Communication Course using a task-based learning design. Therefore, the participants had already experienced a learning background that involved doing tasks in English for this communication course. Blended learning is the combination of online learning and face-to-face learning (Garrison & Vaughan, 2008). The lesson plan for this course shows the ratio of the two main learning contexts, namely face-to-face learning (33.33%) and the online learning environment (66.66%). The teaching methodology was separated into three stages, namely, the pre-, during, and post-task stages (Ellis, 2003). In the pre-task stage, the teacher met the participants via Google Meet. The participants were introduced to the topics and watched a video (36 minutes) on how to do the exercises. The class was run by the teacher (teacher-led), and the students needed to do what the teacher

directed. Next, the during task stage was also online. The participants practiced and did the task in order to upload it on Google Classroom within the given time. Even though the plan indicated the activity was student-led, the teacher was always present in the online class to provide advice when the students encountered problems. The role of the teacher was to serve as a counselor. Finally, in the post-task stage, the teacher worked as an instructor (teacher-led) in the class. In this stage, the students' work on word and sentence stress was analyzed, and the teacher explained in more depth why mistakes and errors occurred. The participants received feedback, completed new tasks, and received the key.

3. Data Collection and Data Analysis

The data collection consisted of four stages. The first stage was identifying students' pronunciation needs. The researcher surveyed the participants' needs in terms of learning pronunciation by using online questionnaires (Google Forms). The data can be interpreted by using these criteria: 4.21-5.00 indicates Strongly Agree, 3.41-4.20 indicates Agree, 2.61-3.40 indicates Neutral, 1.81-2.60 indicates Agree, and 1.00-1.80 indicates Strongly Disagree. This scoring system was adapted from Plansangket (2016). The second stage was to identify the students' abilities before and after implementing the English pronunciation course in the BL class. In this stage, the participants' voice recordings were analyzed, checked, and rated by three experts (with one native speaker) to identify the accuracy of the word and sentence stress of all the participants. The third stage was to ask the participants, via an online questionnaire survey, for their opinions toward studying an English pronunciation course in a BL environment. The fourth stage was to use statistical measures to analyze the data on the

students' pronunciation anxiety via an online questionnaire before and after the treatment. The questionnaire was adapted from Horwitz et al. (1986). All the data collected were analyzed statistically by using the SPSS 20 software package and interpreted based on the means ($\bar{x}$), Standard Deviation (SD), and t-tests.

Findings

This section presents the students' pronunciation needs, their pronunciation ability, their opinions about the pronunciation lessons in the BL course, and their pronunciation anxiety levels.

Table 1

Needs of Students in Learning English Pronunciation

Segmental features	Mean	SD	Rank order	Suprasegmental features	Mean	SD	Rank order
1. Consonants	3.38	0.86	9	8. Intonation	3.47	0.80	4
2. Last Consonants	3.17	0.82	15	9. Word Stress	4.36	0.84	1
3. Voice	3.45	0.81	7	10. Sentence Stress	4.24	0.75	2
4. Voiceless	3.43	0.87	8	11. Rhythm	3.47	0.93	5
5. Clusters	3.36	0.86	10	12. Assimilation	3.34	0.91	11
6. Vowels	3.46	0.89	6	13. Juncture	3.28	0.88	14
7. Diphthongs	3.32	0.77	12	14. Blending Link-up	3.56	0.96	3
				15. Contraction	3.32	0.89	13
Overall Average (n = 72)					3.43	0.86	

Table 1 shows the results of the students' learning needs on segmental and suprasegmental features. Fifteen items addressed the needs of the students, based on the questionnaire findings. The mean scores of the students' needs showed that the highest scores were for word stress ($\bar{x}$ = 4.36, SD = 0.84) and sentence stress ($\bar{x}$ = 4.24, SD = 0.75), meaning that the students most needed to learn word stress and sentence stress.

Table 2

Students' Ability in English Pronunciation Before and After Studying the English Pronunciation Course (Word Stress)

Items	Pre-Test		Post-Test		Interpretation
	$\bar{x}$	SD	$\bar{x}$	$\bar{x}$	
1. yourself	0.19	0.40	0.88	0.33	Increase
2. Italian	0.29	0.46	0.96	0.20	Increase
3. envious	0.33	0.47	0.82	0.39	Increase
4. personality	0.11	0.32	0.82	0.39	Increase
5.development	0.35	0.48	0.85	0.36	Increase
6. successful	0.33	0.47	0.97	0.17	Increase
7.responsibility	0.39	0.49	0.81	0.40	Increase
8. take-off	0.63	0.49	0.94	0.23	Increase
9. rainfall	0.68	0.47	0.15	0.36	Decrease
10. driving license	0.71	0.46	0.96	0.20	Increase
11. software	0.65	0.48	0.79	0.41	Increase
12. fifteen	0.64	0.48	0.74	0.44	Increase
13. Inform	0.18	0.39	0.82	0.39	Increase
14. relaxation	0.67	0.47	0.97	0.17	Increase
15. come on	0.63	0.49	0.96	0.20	Increase
16. toothpaste	0.67	0.47	0.99	0.12	Increase
17. perfectly	0.14	0.35	0.81	0.40	Increase
18. different	0.25	0.44	0.17	0.38	Decrease
19. easily	0.50	0.50	0.82	0.39	Increase
20.comfortable	0.33	0.47	0.78	0.42	Increase
Average	0.43	0.45	0.80	0.32	Increase

Table 2 presents the results obtained from the word stress test. The participants improved, from average scores of $\bar{x} = 0.43$ (SD = 0.45) to $\bar{x} = 0.80$ (SD = 0.32). The item that participants could improve the best was the word "personality", from $\bar{x} = 0.11$ (SD = 0.32) to $\bar{x} = 0.82$ (SD = 0.39). There was a significant increase. However, the performance on two items worsened, namely "rainfall", which fell significantly, from $\bar{x} = 0.68$ (SD = 0.47) to $\bar{x} = 0.15$ (SD = 0.36), and "different", which fell slightly, from $\bar{x} = 0.25$ (SD = 0.44) to $\bar{x} = 0.17$ (SD = 0.38).

Table 3

Comparison of Pre-test and Post-test Mean Scores of Word Stress Ability

	N	$\bar{x}$	SD	T-values	Sig. (2-tailed)
Pre-test	72	0.43	0.45	5.41	0.00*
Post-test		0.80	0.32		

*significant at 0.05

Table 3 compares the pre-test and post-test scores on word stress after the treatment. For the pre-test, $\bar{x} = 0.43$ (SD = 0.45), and for the post-test, $\bar{x} = 0.80$ (SD = 0.32), while the T-value (5.41) showed that there was a statistically significant difference ($p > 0.05$). This means the pronunciation course may help the participants improve their word stress ability.

Table 4

Students' Ability in English Pronunciation Before and After Studying the English Pronunciation Course (Sentence Stress)

Items	Pre-Test		Post-Test		Interpretation
	$\bar{x}$	SD	$\bar{x}$	SD	
1) I'd like to speak to Mr. Wong.					
like	0.81	0.40	0.97	0.17	Increase
speak	0.54	0.50	0.99	0.12	Increase
Wong	0.68	0.47	0.97	0.17	Increase
Mean	0.68	0.46	0.98	0.15	Increase
2) Where is your new wooden house?					
where	0.57	0.50	0.82	0.39	Increase
new	0.57	0.50	0.81	0.40	Increase
wooden	0.56	0.50	0.69	0.46	Increase
house	0.57	0.50	0.96	0.20	Increase
Mean	0.56	0.50	0.82	0.36	Increase
3) I'm looking for my cousin's house.					
looking	0.56	0.50	0.81	0.40	Increase
cousin	0.58	0.50	0.81	0.40	Increase
house	0.57	0.50	0.43	0.50	Decrease
Mean	0.57	0.50	0.68	0.43	Increase

Items	Pre-Test		Post-Test		Interpretation
	$\bar{x}$	SD	$\bar{x}$	SD	
4) My bag's been stolen.					
bag	0.68	0.47	0.42	0.50	Decrease
stolen	0.42	0.50	0.79	0.41	Increase
Mean	0.55	0.49	0.61	0.46	Increase
5) We are not familiar with this new computer program.					
not	0.42	0.50	0.96	0.20	Increase
familiar	0.08	0.28	0.97	0.17	Increase
new	0.46	0.50	0.94	0.23	Increase
computer	0.46	0.50	1.00	0.00	Increase
Program	0.46	0.50	0.44	0.50	Decrease
Mean	0.37	0.45	0.86	0.22	Increase
6) Do you have any sisters or brothers?					
have	0.42	0.50	0.96	0.20	Increase
sister	0.67	0.47	0.99	0.12	Increase
Brother	0.11	0.32	0.96	0.20	Increase
Mean	0.40	0.43	0.97	0.17	Increase
7) He bought a red car for his daughter.					
bought	0.11	0.32	0.99	0.12	Increase
red	0.42	0.50	0.40	0.49	Decrease
car	0.44	0.50	0.99	0.12	Increase
daughter	0.39	0.49	0.92	0.28	Increase
Mean	0.34	0.45	0.83	0.25	Increase
8) I don't know the answer, either.					
don't	0.25	0.44	0.94	0.23	Increase
know	0.44	0.50	0.97	0.17	Increase
answer	0.39	0.49	0.56	0.50	Increase
either	0.26	0.44	0.40	0.49	Increase
Mean	0.34	0.47	0.72	0.35	Increase
9) We don't need to register for the next new season.					
don't	0.17	0.38	0.61	0.49	Increase
need	0.14	0.35	0.43	0.50	Increase
register	0.26	0.44	0.99	0.12	Increase
next	0.35	0.48	0.82	0.39	Increase
new	0.35	0.48	0.85	0.36	Increase
Season	0.36	0.48	0.75	0.44	Increase
Mean	0.27	0.44	0.74	0.38	Increase
10) Do you prefer tea or coffee?					
prefer	0.64	0.48	0.68	0.47	Increase
tea	0.58	0.50	0.92	0.28	Increase
coffee	0.56	0.50	0.61	0.49	Increase
Mean	0.59	0.49	0.74	0.41	Increase
Average	0.44	0.46	0.80	0.31	Increase

Table 4 presents pre- test and post-test results for the sentence stress test. The participants improved their stress in content words, with overall average scores increasing from $\bar{x} = 0.44$ (SD = 0.46) to $\bar{x} = 0.80$ (SD = 0.31). The sentence on which participants increased their performance most significantly was 6) "Do you have any sisters or brothers?", which increased from $\bar{x} = 0.04$ (SD = 0.43) to $\bar{x} = 0.97$ (SD = 0.17). In contrast, the item on which participants performed worst was the sentence 4) "My bag's been stolen.", which only rose from $\bar{x} = 0.55$ (SD = 0.49) to $\bar{x} = 0.61$ (SD = 0.46).

Table 5

Comparison of Pre-test and Post-test Mean Scores of Sentence Stress Ability

	N	$\bar{x}$	SD	T-values	Sig. (2-tailed)
Pre-test	72	0.44	0.46	8.03	0.00*
Post-test		0.80	0.31		

*significant at 0.05

Table 5 compares the pre-test and post-test scores after the treatment. For the pre-test, $\bar{x} = 0.44$ (SD = 0.46), and for the post-test, $\bar{x} = 0.80$ (SD = 0.31); the T-value (8.03) showed that there was a statistically significant difference ($p > 0.05$). This suggests the pronunciation course may have improved the participants' sentence stress ability.

Table 6

Students' Opinions Toward Studying an English Pronunciation Course via a BL Environment

Blended Learning	**Blended Learning Class**		
	$\bar{x}$	**SD**	**Interpretation**
1. Pronunciation teaching in the BL course enhanced students' efficiency in pronunciation ability.	4.32	0.47	Very High

Blended Learning	Blended Learning Class		
	$\bar{x}$	SD	Interpretation
2. Pronunciation teaching in BL was convenient to study.	4.19	0.39	Very High
3. After studying pronunciation in the BL course, students felt confident in their pronunciation ability.	4.45	0.53	Very High
4. The specially designed model is interesting enough to develop pronunciation.	4.08	0.86	Very High
5. Studying pronunciation in the BL course needs more suggestions to improve the specially designed model.	2.35	0.48	Low
6. BL is suitable for teaching pronunciation	4.11	0.59	Very High
Overall Average (n = 72)	3.91	0.55	High

Table 6 shows positive results in terms of the students' opinions toward studying the English pronunciation course in a BL environment. Their overall opinion was at a high level of satisfaction ($\bar{x}$ = 3.91, SD = 0.55) after the BL course. However, the students disagreed that studying pronunciation in the BL course required additional suggestions to improve the specially designed model ($\bar{x}$ =2.35, SD = 0.48).

Table 7

Levels of Students' Anxiety Before and After Studying the English Pronunciation Course via a BL Environment

No.	Statement	Pre-Questionnaire		Post-Questionnaire	
		$\bar{x}$	SD	$\bar{x}$	SD
1.	I feel nervous when speaking English.	2.68	0.80	2.46	0.99
2.	I do not like talking to more advanced English speakers.	3.33	0.75	3.18	0.70
3.	I feel embarrassed talking to people with good English pronunciation.	3.31	0.85	3.24	0.94

No.	Statement	Pre-Questionnaire		Post-Questionnaire	
		$\bar{x}$	SD	$\bar{x}$	SD
4.	I get nervous when I have to speak English in front of other people.	2.81	0.76	2.67	0.87
5.	I am not satisfied with my English pronunciation.	3.29	0.80	3.21	0.79
6	I am bothered about making pronunciation mistakes.	2.90	0.89	2.81	0.88
7	I realize how many pronunciation mistakes I make.	2.86	0.80	2.54	0.93
8	I feel embarrassed when I realize that I pronounce some words incorrectly.	3.31	1.00	3.13	0.80
9	I am afraid people will think I am silly and incompetent because of my poor English pronunciation.	3.81	0.91	3.49	0.83
10.	I consider imitating native-like English pronunciation ridiculous.	1.89	0.78	1.83	0.86
11	I am afraid my future students will have better English pronunciation than I do. (teacher)	3.19	0.78	3.14	0.74
12	Other students have better English pronunciation than I do.	3.35	0.86	3.35	0.84
13	I am worried about not being understood because of my improper pronunciation.	2.91	0.85	2.79	0.86
14	I feel ashamed when people correct my pronunciation mistakes.	3.08	0.79	2.79	0.87
15	It seems to me that I cannot get rid of my Thai accent in English.	3.35	0.78	3.24	0.90
16	I can never master good English pronunciation.	3.57	0.98	3.56	0.87
17	I think English pronunciation is very difficult.	3.65	0.97	3.38	0.90
18	I consider the rules of English pronunciation incomprehensible.	2.67	0.99	2.54	0.93
19	It is very difficult to pronounce like a native speaker.	2.69	0.85	2.54	0.92

No.	Statement	Pre-Questionnaire		Post-Questionnaire	
		$\bar{x}$	SD	$\bar{x}$	SD
20	I think that good English pronunciation is very important for an English teacher.	3.81	0.93	3.53	0.95
Overall		3.24	0.91	3.19	0.86

Table 7 shows the results of the anxiety levels from the pre-and post-questionnaires. According to the overall mean scores, there was a reduction in the students' pronunciation anxiety after studying the pronunciation course (pre: $\bar{x} = 3.24$, SD = 0.91; post: $\bar{x} = 3.19$, SD = 0.86

Table 8

Comparison of Anxiety Levels Before and After the Course

	N	$\bar{x}$	SD	T-values	Sig. (2-tailed)
Pre-questionnaire	72	3.24	0.91	8.13	0.00*
Post-questionnaire		3.19	0.86		

*significant at 0.05

Table 8 compares the levels of anxiety before and after the course. The T-value showed that there was a statistically significant difference ($p > 0.05$). This means that after the participants attended the pronunciation course, the treatment could help them reduce their anxiety regarding English pronunciation in terms of word and sentence stress.

Discussion

This section discusses the findings according to the four research questions**.** Firstly, the students' need to learn the pronunciation of both segmental and suprasegmental features was high, and the highest scores were for word stress and sentence stress. The findings are consistent with those of Kamsa-ard (2018), who identified Thai university students' pronunciation needs**.** The study showed that learners required an understanding of segmental and suprasegmental

features. Similarly, Zarzycki (2020) found that Omani ESL students agreed that it was important to develop both segmental and suprasegmental features. Moreover, this study showed that students needed to learn the pronunciation of both word stress and sentence stress.

Secondly, the findings indicated that the post-treatment word stress accuracy scores were significantly higher, and the sentence stress accuracy scores also significantly increased. For word stress, this also saw an improvement in scores, especially on the word "personality", which was the item that participants could pronounce best. This indicated that they understood the rule that when a suffix is added to a root word, the primary stress is shifted from the first to the third syllable, as in "**per**sonal" to "perso**nal**ity". This finding supports the findings of a previous study (Tehlah, 2012). Tehlah investigated word stress suffixion. The study's experimental group was taught by using explicit suffixation instruction, and this group was significantly better at pronouncing words with suffixes, such as -ity, -tion, -ian, -ous, and -ic. It may be inferred that explicit suffixation instruction could enhance students' knowledge of English pronunciation. Similarly, Jaiprasong & Pongpairoj (2020) investigated L1 Thai university students' English word stress production. The participants needed to read out loud for two tasks in word and sentence stress. The results revealed that both groups of participants (intermediate students and advanced students) knew word stress with suffixes like -ic, ity, -tion, and -sion. However, the advanced students performed better. On the other hand, and with decreasing scores, the words 'rainfall' and 'different' were problematic. Even though these two words were explained in class, two factors may explain this. Firstly, 'rainfall' is a combination of a noun and a verb. The participants may not have been familiar with this due to insufficient knowledge (Khamkhien, 2010; Plansangket, 2016). Secondly, for 'different', this may be due to interference from the Thai mother tongue. This supports the findings of Winaithan & Suppasetseree's (2012)

study, which found that Thai students pronounced words by using Thai tones on words that were familiar to the students. This is also in the line with Kanoksilapatham's (2017) study, which found that one problem with Thai students' pronunciation was interference from the first language.

For the sentence stress test, the words that most students pronounced incorrectly in sentences were 'register' and 'familiar'. Further, the sentence where most students could not pronounce the stress correctly was no. 2) "Where is your new wooden house?" 3) "I'm looking for my cousin's house.", and 4) "My bag's been stolen." The word that most students had a problem with was 'where'. Considering the mistakes that the participants made, this may be over-differentiating between the content word and function word. Prior studies have noted the importance of stress problems in sentences (Jindapitak, 2010; Sahatsathatsana, 2017). Similarly, Winaitham & Suppasetseree (2015) identified the obstacles that Thai ELF students face in pronunciation. Their students lacked knowledge of pronunciation, and that was the reason why they could not solve any pronunciation problems. In addition, the findings of the current study support the findings of a previous study by Nguyen (2019), who investigated Vietnamese students' pronunciation needs. His participants revealed that they preferred to be taught pronunciation explicitly and systematically in class. Blended learning provides explicit teaching in class and online, and the lessons provide examples of foreigners from sound files and the YouTube website. Even though the teacher was a non-native speaker, the preparation of examples and feedback was positively received by the participants as part of teaching pronunciation in the BL course.

In conclusion, after the participants took a pronunciation course in a BL environment for the current study, they improved in both word and sentence stress following the treatment. Further, the participants were taught explicitly in class (traditional learning

environment), and they had a chance to repeat their learning through the pronunciation video (online learning environment). That appears to be the reason why the participants improved in both word and sentence stress.

Thirdly, the participants' opinions towards the BL English pronunciation course were that they were highly satisfied, according to the questionnaire results. The BL pronunciation course was found to match the participants' real pronunciation learning needs. The results showed that the students agreed with teaching pronunciation in a BL environment. Similarly, Khamkhien (2010) recommended that teaching pronunciation to students with a low level of English proficiency requires explicit pronunciation instruction and noted that English learning materials are needed to improve the students' stress. Importantly, the BL approach provides both a face-to-face and online learning experience (Garrison & Vaughan, 2008). Therefore, using the BL approach in teaching pronunciation may improve students' pronunciation ability. The BL course was particularly suitable for teaching pronunciation because it was convenient, and the students felt more confident in their pronunciation ability. These results are similar to those of Kettem & Phonlabutra (2020), who developed a BL course to develop pronunciation. Their students were highly satisfied with using BL in their pronunciation course. In online learning, Winaithum (2012) recommended that it would be more useful if the participants were able to have the opportunity to learn pronunciation both in and outside class. Therefore, the present study assumed that using BL in a pronunciation course would benefit the participants, and indeed they appeared satisfied.

Fourthly, the student's anxiety levels in the post-test were lower than those in the pre-test. This means that the pronunciation course may reduce pronunciation anxiety. In the current study, the students were in the lower range of the Foreign Language Pronunciation Anxiety Scales (FLPAS) (Kralova et al., 2017). This study supports the

finding of a previous study (Kralova et al., 2017), which found that intensive English pronunciation training may reduce the foreign language pronunciation anxiety of pre-service teachers. Moreover, this tallies with a study by Kralova et al., (2018), who implemented pronunciation training for 24 weeks (one 90-minute session per week) and used an inductive approach, which means the students tried to observe the phonetics and derive the rules. The results show that after the intervention, the experimental group's FLPA score fell. Therefore, this study supports the notion that a pronunciation course may be useful for pronunciation practice. In the same way, this study confirms that the participants felt anxiety over pronunciation when they demonstrated inadequate English pronunciation (Kralova & Mala, 2018). Similarly, Roach (2009) stated a pronunciation class was a practical solution, especially if complementary theoretical input on English phonetics and phonological issues was delivered in a way that may reduce language interference.

Conclusion and Recommendations

The main findings can be concluded as follows. First, the strongly identified pronunciation needs were word stress and sentence stress. Second, the students' English pronunciation ability both word stress level and sentence stress level improved significantly after the course of treatment. Third, the participants were highly satisfied with the BL English pronunciation course Fourth, their anxiety levels lowered significantly at the end of the course. Therefore, the pronunciation course may reduce pronunciation anxiety.

Concerning the teaching of English pronunciation, the findings of this study offer the following implications for all parties involved. Policymakers or administrators should consider technology supports such as internet network connectivity and necessary technological tools to enhance pronunciation development, especially in the Blended Learning environment. For a pronunciation course, this

study provided evidence for improving students' pronunciation ability and attitudes after implementing BL in a pronunciation course. Therefore, the newly designed pronunciation course could incorporate interesting activities which are suitable for the online teaching environment. For language instructors, as using technology may enhance language teaching, they may need to develop their skills. Pedagogical knowledge and technological and online knowledge are needed for creating a BL environment and online teaching. Specifically, for all English language teachers, it may be useful for them and their students to be aware of the pronunciation problems revealed in this study and take them into account in the pronunciation course.

Turning now to further studies, some recommendations are made. Firstly, regarding research methodology, interviews could be used to pursue follow-up questions for specific answers. Secondly, first-year English teaching major students were the participants in this current study. Future studies could focus on more advanced groups of participants. For example, the situations of senior students or graduate students should be investigated, or a longitudinal study could be conducted. Thirdly, the application of BL in other language skills should be made and explored.

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