

The Development of Computer-Assisted Musical Pronunciation Courseware for English Suprasegmentals

การพัฒนาโปรแกรมคอมพิวเตอร์ช่วยฝึกสำหรับการเรียนรู้ การเน้นหนักในคำ และทำนองเสียงภาษาอังกฤษ โดยใช้เพลงเป็นสื่อประกอบ

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ABSTRACT

The purposes of this study were 1) to develop computer-assisted musical pronunciation courseware for teaching English suprasegmentals. 2) to enhance students' abilities in proper English suprasegmentals via a constructed computer-assisted musical pronunciation (CAMP) courseware, and 3) to investigate the students' attitudes toward the use of the courseware. The subjects of the study were 30 volunteers who were second year business students enrolled in the second semester of the 2010 academic year at Khon Kaen University. The design of the study was one-group pre-test/post-test. The research instruments consisted of 1) a constructed CAMP courseware, 2) a pre-test and post-test, and 3) an attitude questionnaire. For data analysis, t-test was used to analyze the significant change between the pre-test and post-test scores. The results of the study: 1) The efficiency (E1/E2) of the developed the computer-assisted musical pronunciation (CAMP) courseware were 83.57/91.33. The figures effectiveness index was 0.86. The results were higher than the criterion of efficiency at 80/80 and the effectiveness index was 0.80. 2) the subjects' overall post-test scores were higher at the significance level $p < 0.05$ and 3) they expressed positive attitudes toward the use of the CAMP courseware.

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บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์ เพื่อพัฒนาโปรแกรมคอมพิวเตอร์ช่วยฝึกสำหรับการเรียนรู้การเน้นหนักในคำ และทำนองเสียงภาษาอังกฤษโดยใช้เพลงเป็นสื่อประกอบ เพื่อเสริมสร้างความสามารถในการเรียนรู้ โดยการเรียนรู้ผ่านคอมพิวเตอร์ช่วยการเรียนรู้ภาษา และ เพื่อศึกษาทัศนคติของนักศึกษาที่มีผลต่อการใช้คอมพิวเตอร์ช่วยการเรียนรู้ภาษา กลุ่มตัวอย่าง คือ นักศึกษาชั้นปีที่ 2 คณะวิทยาการจัดการ ในภาคเรียนที่ 2 ปีการศึกษา 2553 มหาวิทยาลัยขอนแก่น จำนวน 30 คน ซึ่งได้มาจากกลุ่มตัวอย่างการสุ่มตามความสะดวก เครื่องมือที่ใช้ในการวิจัย ประกอบด้วย 1) โปรแกรมคอมพิวเตอร์ช่วยการเรียนรู้ภาษา 2) แบบทดสอบการออกเสียง ก่อนและหลังการใช้โปรแกรม 3) แบบสอบถามความคิดเห็น การวิเคราะห์ผลทางสถิติผู้วิจัยใช้ ค่าเฉลี่ย และส่วนเบี่ยงเบนมาตรฐาน และการทดสอบค่าที (T-test) ผลการวิจัย 1) ประสิทธิภาพของคอมพิวเตอร์ 83.57/91.33. และดัชนีประสิทธิผล 0.86. ผลที่ได้สูงกว่าเกณฑ์ประสิทธิภาพที่ตั้งไว้ที่ 80/80 และดัชนีประสิทธิผลที่ 0.80 2) การใช้โปรแกรมคอมพิวเตอร์ที่สร้างขึ้น นักเรียนมีความสามารถทางการเน้นหนักในคำ การเน้นหนักในระดับประโยค และทำนองเสียงได้ดีขึ้น และ 3) นักเรียนมีทัศนคติที่ดีในการเรียนด้วยตนเอง

Key Words : Pronunciation, Music, Computer assisted language learning (CALL)

คำสำคัญ : การออกเสียง ดนตรี คอมพิวเตอร์ช่วยสอน

Introduction

English is a communicative language in an era of the availability of immense information and advanced technology. English is called a global language [1]. It is indisputable that Thai learners should learn English as a compulsory subject. Nevertheless, Thai learners' TOEFL scores are significantly lower than the scores of learners from other Asian countries [2].

There are two main areas of pronunciation teaching and learning: segmentals and suprasegmentals. Segmental refers to the individual sounds and suprasegmental refers to rhythm, stress, prominence and intonation. Many material writers, teachers and researchers have stated that the suprasegmental aspect should be the first aspect for language learners to learn [3,

4]. This is because learning about suprasegmentals can help language learners increase their self-confidence in speaking.

Acquiring an understanding of suprasegmentals is a problem for Thai learners because of the difference between the Thai and English sound systems [5, 6, 7].

Moreover, they have difficulty pronouncing the primary stresses in English words [8, 9]. To reduce the errors in communication for Thai learners who learn English as a foreign language, learning word stress and intonation is absolutely essential.

Advancements in information technology have helped people to connect more easily with each other. Moreover, anybody with access to the Internet can search for information from anywhere in the world. So, technology and computers are very important in everyday life.

In Thailand, there are only a few suitable programs for teaching English word stress, sentence stress and intonation at the Thai university level. This research will focus on the lessons regarding English word stress, sentence stress and intonation for second year English students at Khon Kaen University studying one of these so-called suitable programs. The potential benefits of this type of courseware has led to its inclusion in this research as it covers the development of computer-assisted musical pronunciation courseware for teaching English suprasegmentals to Business English learners at Khon Kaen University.

Literature Review

There are many related studies on pronunciation teaching, especially suprasegmentals aspects such as rhythm, word stress, and intonation. In 1988, Yasuyo studied English rhythm and its teaching to non-native English speakers. Yasuyo said the difference of the characteristics of stress-timed language, English, and syllable-timed language, Japanese, is difficult for Japanese learners to acquire English rhythm. So, Yasuyo used the visual aid which is the musical notes to help Japanese to improve the intelligibility of their English pronunciation. The result found that the Japanese learners can improve the intelligibility of their pronunciation. The result implies that musical notes can help non-native English speakers acquire English rhythm. Moreover, non-native English speakers have to be exposed to English language because English experience can help learners to perceive

and produce English word stress. This was found in the study of Jarusan [8] who studied about perceptions and productions of English word stress of first year students at Rang Sit University. Moreover, Ilciukiene [10] stated that second language learners have to understand the English rhythm and intonation. He also mentioned about the suprasegmental aspects of speech production.

Ilciukiene [10] found that songs especially jazz chant can be used to teach the natural rhythm, stress, and intonation; to recall grammatical point, enlarge vocabulary, develop learners listening and speaking skills, to introduce learners with target culture, to create an interesting relaxing atmosphere, to encourage learners to participate in class and increase their interaction practice, and reduce some distance from teachers and learners themselves. In addition, Sidalad [11] found that adult learners can acquire English pronunciation. She developed an English pronunciation guide for Thai adult learners using the Thai alphabets.

There are many studies about using music and songs for teaching in EFL classroom. For example, Le [11] studied the role of music in second language learning: A Vietnamese Perspective. The author said that music in language learning is in the primary stage. The aim of the study was to investigate the role of music from Vietnamese teachers and learners perspective. Vietnamese educational policy was announced the important of English as an international language. Some learners have success by learning with music. This research found

that music was very important language to communicate through songs lyric. Music and songs help learners to be aware of the differences of L1 and L2. Music can bridge the gap between teachers and learners. In addition, music made learners feel positive toward English.

In addition, using music to increase learners' pronunciation is found to have positive result. Folk songs, rap songs, and jazz chants were used to help learners to acquire the language pronunciation. For example, Yasuyo [13] mentioned earlier about the studied about teaching English rhythm by using musical notes. The result revealed the positive way to use music to teach pronunciation. In addition, Spicher and Sweeney [14] studied on folk music in the L2 classroom development of native-like pronunciation through prosodic engagement strategies. Adult learners who have to acquire native-like pronunciation should engage in target language situation. The researchers suggested that folk music is the one method for adult learners to assimilate the sound system of native-like pronunciation because there are unique prosody patterns in folk music. These patterns in folk song can help adult learners improve their inner ear and outer voice of target language. However, native like pronunciation has become out of date. It has replaced by the intelligibility pronunciation which is the main goal in the communicative language teaching. In addition, jazz chant also use to teach English. Soudorn [15] found that the learners speaking ability increase after

using jazz chanting exercise. Moreover, they also have the positive attitude for the jazz chants. The studies by Fischler [16] found that using rap music can improve secondary language learners' intelligibility pronunciation. The researcher used music to teach stress patterns of English. The learners can improve their self-confidence to communicate with other native speakers too.

Computer-assisted pronunciation practices were used in studied of English pronunciation. Commercial programs were used in many studies such as Hincks [17] used the commercial program called WaveSurfer to help learners to see their feedback. The program synthesizes the words that the learners pronounce. They can listen to their recorded voice in the computer program. The result revealed that learners had progress on the word stress placement. Similarly, Seferoglu [18] used commercial software which is accent reduction software in a multimedia language laboratory.

This studied revealed that the learners had the improvement about pronunciation although they were hardly exposed to English language setting. The researcher mentions the technology can help the learners to improve their pronunciation skill. Furthermore, technology can help language learners to increase the pronunciation ability. The instructors have to think about the learners learning style too.

In the study of Kongkeo [19] who carried out a research in Thailand about the effects of rhythmic method in multimedia lessons and learning exposure upon Eng-

lish pronunciation achievement of Thai and Chinese undergraduates with different learning styles. She used the rhythmic method which are ball queuing and color-bar queuing to teach word stress with computer-assisted language learning. Thai learners and Chinese learners were grouped by the researcher. Thai learners were divided into two groups: one group learned multimedia lesson with ball queuing and the other group learned color-bar queuing. Chinese learners also were divided in the same way. She found that both groups of learners did not have the different progress from their achievement tests. She concluded that both of the methods were effective method for learning word stress. She found the learners who have the different learner style met the different learning achievement.

There are studies on the suprasegmentals on computer such as Hardison [20] who used the computer to teach suprasegmentals to English native speakers who learned French. They were trained only the suprasegmentals and they were asked to record their pretest and posttest. The scores were judged by native French speakers. Although the learners were trained only the suprasegmental aspects, they could improve both segmental and suprasegmentals. This finding supported the idea of Gilbert [4] that teachers should teach suprasegmentals with segmental.

In conclusion, suprasegmentals is the important aspects for non-native English learners to know in order to meet the goal of successful communication. To

gain the knowledge of suprasegmentals, there are many ways for language teachers to design the course. However, computer is still an interesting material for language teachers and language learners. In addition, music and songs can be applied to use in language class. Learning suprasegmentals with the good emotion can help language learners acquire the knowledge in the long term memory. In the present study constructed the computer-assisted language learning by using music as a means to teach suprasegmental features which are word stress, sentence stress and intonation for non-native English learners

Methodology

Population and Sample Group

They were second year students who study English from the Management Sciences Faculty or Business English students from the Faculty of Humanities and Social Sciences, Khon Kaen University. The reason for choosing second year business students is that second year students can be considered as upper intermediate level students.

The sample group was 30 business students who volunteer to join the project in the second semester of the 2010 academic year.

Research Design

The research was an experimental research which uses the one-group pretest-posttest design because this design can measure what changes before and after a certain treatment [21].

Research Instruments

The research instruments in this study were

1. Computer-Assisted Musical Pronunciation Courseware which consists of a pretest, a posttest, 10 lessons, and a questionnaire.

2. Pretest and posttest were constructed according to the objectives of this study.

The tests are pretest and posttest which are parallel tests. The pretest tested the samples' pronunciation ability before using the computer-assisted musical pronunciation courseware. On the other hand, the posttest was given when the samples finished all lessons in CAMP courseware. The tests were pronunciation tests which assess the samples' perception and production of English suprasegmentals. The perception was tested with a listening test. The listening tests were given in the CAMP program that the learners can finish by themselves. The listening tests were multiple choices. In addition, the listening tests consisted of both word stress testing and intonation testing. The production was tested by pronunciation test. The samples read words with the appropriate stress and intonation patterns. Then, they record their voice in the recorder. Both pronunciation tests were rated by two raters who are American native speakers: a female and male. The raters were trained in the rating criteria.

3. Questionnaire was constructed by the researcher. The questionnaire was

designed to elicit the learners' background and ask about their attitude toward computer-assisted musical pronunciation courseware. The questionnaire was designed to find out the samples' data, their English learning background, their English speaking experience, their musical experience, their opinions on their English pronunciation strengths and weaknesses with particular attention paid to words stress and intonation. In addition, this questionnaire consists of questions about their attitude toward computer-assisted musical pronunciation courseware. The samples were asked to answer the questionnaire after they have finished all of the lessons in the computer-assisted musical pronunciation courseware. The questionnaire was divided into three parts. The first part is the questions to ask about samples' demographic data such as their gender, age etc. The second part is the questions to ask about the samples' English learning experience, and their music experience. The third part is the questions about their attitude towards computer-assisted musical pronunciation courseware. The questionnaire is the pattern of Likert's rating scale (Likert 1932 cited in [21]). In addition to these three parts, there are open ended questions which asked the samples to elicit necessary information.

Data Collection

Research data was collected during second semester of the 2010 academic year. The data will be collected as described below:

1. The first two hour session is an orientation including the instructions about how to use CAMP courseware, how to register to the courseware, how to log on to the courseware and how to do pretest. After that, the samples have to do the pretest in the computer lab. The samples were tested perception test in the whole group in the computer lab. The samples were tested production test by reading the word stress, sentence stress and intonation individually.

2. The samples log in to CAMP courseware and learn each lesson about English suprasegmentals. There are 10 lessons. Each lesson will take about three hour. The samples have to go through the lesson at their pace which can be more or less than three hours per lesson.

3. After the samples finish all lessons, they have to do the posttest to investigate the improvement of the samples' knowledge about English suprasegmentals after they finished all lessons in CAMP courseware.

4. The questionnaire was asked after they finished all lessons. They did the questionnaire on the CAMP courseware.

Data Analysis

The data from this research was analyzed by:

1. The scores from the pretest and posttest were statistically analyzed by SPSS for mean, standard deviation and t-test. The pretest scores were analyzed to see the samples' ability before using the CAMP courseware. The posttest scores will be

analyzed to see samples' progress

2. The data from the questionnaire was statistically analyzed to find the samples' personal information, opinion, and their attitudes towards the songs and lessons in CAMP courseware. Information from the open-ended questions was analyzed qualitatively.

Result and discussion

This study was conducted (i) to develop computer-assisted musical pronunciation courseware for teaching English word stress, sentence stress and intonation; (ii) to enhance learners' abilities in proper English word stress, sentence stress and intonation patterns by using computer-assisted musical pronunciation courseware; and (iii) to investigate learners' attitudes toward computer-assisted musical pronunciation courseware. To achieve the first purpose, the Computer-Assisted Musical Pronunciation was constructed. It consisted of the pre-pronunciation test, 10 lessons about English suprasegmentals, and the post-pronunciation test. The lessons in the computer-assisted musical pronunciation courseware consisted of content about English suprasegmentals, exercises, and songs. The contents were studied and selected. Then, the words and sentences were selected by 3 teachers who teach Business English. After that, the contents were checked for content validity by 3 experts. The music and songs were written and composed based on the content of each lesson. The next step was

conducting trials of the courseware with the one-to-one testing and small group testing. The courseware was then used with the sample group. The sample took the pronunciation test. The students then registered and logged in to learn the English suprasegmentals lessons in their own time. The students studied each lesson for one hour. After the students finished all lessons, the questionnaire was sent by e-mail. The efficiency of the CAMP courseware was found to be 83.57/91.33 and the effectiveness index was 0.86. For the second purpose, the pronunciation test constructed by the researcher was used both for pre-test and post-test but each was arranged in different order. The pronunciation test was used to test both students' perception and production. The perception was tested by listening test with 40 items of 40 points. The students had to listen to the audio sounds on the CAMP courseware, and then they had to choose the suitable answer. The listening test was in a multiple choice format. The students' production was tested by pronunciation test with 20 items of 40 points. The students were asked to read the words with the suitable stress and read the sentences with the suitable intonation. The post-pronunciation test mean score was 73.07 higher than the pre-pronunciation test mean score of 41.47. This difference was found to be significant at the level 0.05 level. For the third purpose, the questionnaire was constructed. There were 30 items which were divided into three parts as follows: 1) Part 1 asked about the students' demographic data.

2) Part 2 asked about students' experiential information about their English experience, music experience, and computer experience. 3) Part 3 asked about the students' attitude toward the CAMP courseware. The questions in this part used Likert's scale. The students' attitude toward the CAMP courseware was found to be positive. The students can learn a lot from the CAMP courseware. Their expressed their opinions about the explanation of the content, the sequence, the lyrics and music could help them learn a lot. In addition, they were satisfied with the CAMP courseware. They felt that the lessons made them learn well and they also thought that the exercises helped them to have self-confidence about using English suprasegmentals.

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