การใช้โปรแกรมแบบฝึกเสริมทักษะฟังเพื่อความเข้าใจสำหรับนักศึกษาวิศวกรรมศาสตร์ มหาวิทยาลัยขอนแก่น ประเทศไทย
INTEGRATING SUPPLEMENTARY LISTENING COMPREHENSION EXERCISES PROGRAM TO IMPROVE ENGINEERING STUDENTS' LISTENING COMPREHENSION, KHON KAEN UNIVERSITY, THAILAND

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บทคัดย่อ

วัตถุประสงค์ของงานวิจัย ได้แก่ 1) เพื่อศึกษาประสิทธิภาพของโปรแกรมเสริมการฟังภาษาอังกฤษเพื่อความเข้าใจของนักศึกษาวิศวกรรมศาสตร์ 2) เพื่อสำรวจว่าโปรแกรมเสริมการฟังภาษาอังกฤษเพื่อความเข้าใจของนักศึกษาวิศวกรรมศาสตร์ ช่วยพัฒนาความสามารถในการฟังเพื่อความเข้าใจของนักศึกษาในด้านใดบ้าง กลุ่มตัวอย่างที่ใช้ในการวิจัยคือ นักศึกษาวิศวกรรมศาสตร์ มหาวิทยาลัยขอนแก่น ชั้นปีที่ 2 ที่ลงทะเบียนเรียนในรายวิชา 411 323 ภาษาอังกฤษสำหรับวิศวกร ในภาคการศึกษาที่ 2 ปีการศึกษา 2556 จำนวน 30 คน ใช้วิธีเลือกสุ่มตัวอย่างแบบเจาะจง เครื่องมือที่ใช้ในงานวิจัย ได้แก่ 1) แบบสอบถาม 2) แบบทดสอบการฟังเพื่อความเข้าใจก่อนเรียนและหลังเรียน 3) แบบฝึกหัดเสริมการฟังภาษาอังกฤษเพื่อความเข้าใจ และ 4) แบบสัมภาษณ์ ผลการวิจัยพบว่าโปรแกรมแบบฝึกหัดเสริมการฟังภาษาอังกฤษเพื่อความเข้าใจ มีผลคะแนนการทดสอบหลังเรียนสูงกว่าผลคะแนนทดสอบก่อนเรียนอย่างมีนัยสำคัญทางสถิติที่ระดับ .000 และยังพบอีกว่าโปรแกรมแบบฝึกหัดเสริมการฟังภาษาอังกฤษเพื่อความเข้าใจกระตุ้นให้นักศึกษาเรียนรู้ภาษาอังกฤษและพัฒนาการฟัง รวมถึงบริบทในโปรแกรมเสริมการฟังสามารถช่วยให้ฟังเข้าใจมากขึ้น การออกแบบโปรแกรมในรูปแบบคอมพิวเตอร์น่าสนใจและมีประสิทธิภาพสำหรับการฝึกทักษะการฟังเพื่อความเข้าใจ

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คำสำคัญ: การฟังเพื่อความเข้าใจ, คอมพิวเตอร์ช่วยสอน, นักศึกษาวิศวกรรมศาสตร์, มหาวิทยาลัยขอนแก่น

ABSTRACT

The purposes of the research were to determine the effectiveness of the supplementary listening comprehension exercises program and to investigate the students' opinions towards the supplementary listening comprehension exercises program. The participants of the study comprised of 30 second-year engineering students who enrolled in 411 323 English for Engineers course in the second semester of the academic year 2013 in Khon Kaen University. The research instruments were 1) three questionnaires, 2) the pre- and post- listening comprehension tests, 3) the supplementary listening comprehension exercises program (SLCEP), and 4) the interview. The findings revealed that the pre- and the post- listening comprehension tests were significantly different at a level of .000. It could be explained that the SLCEP indeed helped the participants improve their listening comprehension skills. The participants also revealed that the program could motivate them to learn English and improve their listening comprehension. The familiar contexts included in SLCEP could help students to understand listening text better and SLCEP designed in a computerized program format was interesting and effective for listening comprehension practice.

Keywords: listening comprehension, CALL, engineering students, Khon Kaen University.

INTRODUCTION

One of the main difficulties in learning English for Thai students was that they had problems with listening skills (Sakda, 2000; Prapphal, 2003; Wongsothorn, Hiranburana, & Chinnawongs, 2003) Additionally, in 2013, a preliminary investigation into the problems in listening English was conducted by this researcher, 30 engineering students at Khon Kaen University were asked to complete an open-ended questionnaire. The study revealed that the students perceived listening skill as their main obstacle.

To obtain additional in-depth information in order to confirm the data generated through the survey, ten of these students were interviewed about their problems in listening skill. Eighty of them confessed that they had the main listening problems.

They revealed which were difficulties in understanding native speakers when speaking at normal speed, difficulties understanding different accents from different speakers, the text lacking of background knowledge of the topics and content, difficulties understanding the main idea of the listening texts, difficulties understanding the supporting details of the listening texts, unfamiliar with vocabulary and expression, and unfamiliar with the situations.

They also expressed a need for supplementary materials to assist in improving their listening in order to understand engineering texts. They also believed that the listening practice that they had acquired from previous courses was insufficient.

Five English teachers were also asked to list the problems they had when teaching engineering students. The results also corresponded with students that listening was the main obstacle in the teaching of this group. Furthermore, the teachers also said that they had to prepare the supplementary materials in teaching because the English commercial books for engineering students available in the educational market could not serve all of the needs of the learners and that the time for students to practice the skills and other sub-skills of language in the classroom was not sufficient.

Obviously, it was reasonable to conclude that listening was one of the major problems in teaching and learning English at KKU. This called for a focus on the listening skill focusing on listening comprehension development for the KKU's engineering students who have made an implicit request for supplementary materials so that they can study on their own both inside and outside classroom. Considering the Engineering Students at Khon Kaen University's urgent need to improve their listening comprehension, "Supplementary Listening Comprehension Exercises Program" or SLCEP was constructed.

Research Questions:

1. Does the supplementary listening comprehension exercises program improve engineering students' listening comprehension?

2. To what extent do the engineering students, as the SLCEP users, think the program help them improve their listening comprehension?

RESEARCH METHODOLOGY

Participants of the Study

The participants for this research were 30 second-year engineering students who were enrolled in the course 411 323 (English for Engineers) in the second semester of the academic year 2013 at Khon Kaen University. The students in the study were from different majors, including agricultural engineering, chemistry engineering, civil engineering, computer engineering, electronics engineering, environmental engineering, and industrial engineering, Khon Kaen University.

All 30 participants were chosen by purposive sampling including high, moderate, and low English proficiency students and the grade they received. According to Fraenkel & Wallen (2003), the participants were selected based on the judgment that they were the representatives of the population and thus, able to provide the data that was needed for the study.

Research Instruments

To collect the data for this study, there were four research instruments used in the study included: (1) three questionnaires, (2) pre- and post- listening comprehension tests, (3) the supplementary listening comprehension exercises program (SLCEP), and (4) the interview. An illustration of how each research instrument was used to answer each research question is presented in Table 1. In the following sections, each instrument is explained in detail.

Table 1: An Illustration of How Each Research Instrument Was Used to Answer Each Research Question

	Questions	Instruments
RQ 1	1. Does the supplementary listening comprehension exercises program improve engineering studens' listening comprehension?	pre- and post- listening comprehension tests, SLCEP, questionnaires
RQ 2	2. To what extent do the engineering students, as the SLCEP users, think the program help them improve their listening comprehension?	questionnaires, interview

Data Collection

For the present study, there were four main stages of data collection, as shown in Table 2.

Table 2: Stages of Data Collection

Types of data collected	Time
Stage 1: The survey of problems for engineering students	Second semester of the academic year 2012
Stage 2: The construction of the SCLEP and its pilot work	First semester of the academic year 2013
Stage 3: The intervention of learning the SCLEP	Second semester of academic year 2013
Stage 4: Questionnaires and interview session	Second semester of academic year 2013

Data Analysis

The obtained data was divided into qualitative and quantitative data. Both of the data was analyzed as follows:

1. Quantitative Data

All data was analyzed by means of the Statistical Package of Social Sciences (SPSS).

a) The Statistics Used for Testing the Reliability of the Questionnaire

The statistics used for determining the reliability of the questionnaire were obtained using the SPSS for the Coefficient alpha of the Cronbatch formula.

b) The Statistics Used for Interpretation of the Questionnaire

The questionnaires were analyzed by mean (X) and standard deviation (SD).

c) The Statistics Used for Testing the Reliability of the Pre and Post Tests

The obtained data were analyzed to determine the reliability of the test. The statistics used for finding the reliability of the tests was SPSS, the Spearman-Brown Formula.

d) The Statistics Used for Testing the Pre and Post Tests

The t-test was used to analyze the difference of pre-test and post-test scores of the samples in order to track the students' progress after learning with the SLCEP.

2. Qualitative Data

The semi-structured interview was used as qualitative data. Content analysis was used to interpret the data obtained from the semi-structured interviews.

RESULTS AND DISCUSSIONS

RQ 1: Does the supplementary listening comprehension exercises program improve engineering students' listening comprehension?

Pre- and Post- Listening Comprehension Test

In order to investigate whether the SLCEP helped engineering students practice listening comprehension, pre and post listening tests were administered before and after attending the program.

Table 3: Statistical Differences Between Pre-Test and Post-Test

Paired Samples Test

	Paired Differences					*t*	*df*	*Sig (2-tailed)*
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
PostTest-PreTest	12.16667	2.06920	.37778	11.39401	12.93932	32.205	29	.000

It was found that the scores of the pre-test and the post-test were significantly different by .000 (See Table 3), it could be explained that the SLCEP indeed helped the participants improve their listening comprehension.

RQ 2: To what extent do the engineering students, as the SCLEPE users, think the program help them improve their listening comprehension?

Qualitative Data

In order to collect this qualitative data, the following questions were asked. In the interview session, the students answered each question in Thai and their answers were translated into English. The following presents the interview scripts of the students' views and opinions from the semi-structured interviews.

Q1: SLCEP could help the students improve their listening comprehension

The findings from the interviews revealed that 90% of the interviewees (9 out of 10) all agreed that the SLCEP could help them improve their listening comprehension.

Q2: SLCEP could motivate students to learn English and improve their listening comprehension

Eighty percent (80 %) of the interviewees (8 out of 10) said that the SLCEP helped them stimulate their motivation in learning and improving listening comprehension. They admitted that they enjoyed learning with the SLCEP through CALL. They found the SCLEP very useful, interesting and fun in stimulating their motivation to learn.

Q3: The familiar contexts included in SLCEP could help students to understand listening text better.

Thirty percent (30%) of the interviewees (3 out of 10) said that the familiar contexts like engineering included in SLCEP helped them understand the listening text better

Q4: SLCEP designed in computerized program was interesting and effective for listening comprehension practice

One hundred percent (100%) of the interviewees (10 out of 10) said that the SLCEP designed in computerized program was interesting and effective for listening comprehension practice.

Q5: Vocabulary included in SLCEP could help the students understand the listening texts better.

Ten percent (10%) of the participants also revealed that vocabulary included in SLCEP could help the students understand the listening texts better.

DISCUSSION

Effectiveness of the SLCEP

1. The Supplementary Listening Comprehension Exercises Program has been shown to be effective with, the SLCEP effectiveness score at 80.11/84.56 and 0.72. Such scores are the result of many reasons, most notably:

a) This design provided a chance for students to listen to various English passages. In the exercises, listening practice was divided into 3 steps: before listening, during listening and after listening. In each lesson, the students listened to the passages several times in order to reach the listening goal, that is, the students completing the various exercises. This program offered students the chance to practice and improve their listening comprehension, which is related to the theory of Thorndike. This theory states that any action which is frequently practiced or repeated can cause proficiency, especially in teaching and learning language for communication; therefore practicing listening is very important. Such a theory relates to the study of Suwannathad (1997) which found that the best way to practice listening is to frequently listen to a passage with a native speaker's accent until learners get used to it. This caused them to improve their English listening ability and attain a higher level of proficiency. Moreover, the passages in the exercise and the dialogs in each lesson had simplified text, which was not too difficult, as the researcher adapted each activity with the level of background knowledge of the students.

b) The activities performed after listening to each passage motivated the learners to practice their listening skills with other coordinate skills by practicing listening themselves. They could then output what they had gained from practicing and could use these skills in their daily life efficiently. This is in accord with the study of Benjarattananon (2009) and Benjarattananon & Kaewprathum (2009) which revealed that teaching and learning English to improve listening ability required various activities and teaching materials in order to increase the interest of learners, which then made English teaching and learning more interesting and effective.

2. The SLCEP was effective because of the: (1) activities for ear training, activating background knowledge, and providing relevant vocabulary knowledge; (2) variations and accents within the listening texts; and (3) illustrations, pictures,

videos, and the names of listening texts that helped the students learn the target listening strategies.

3. Learning or practicing through SLCEP using computer programs could help to promote autonomous learning for the participants. In this study, learner autonomy and self-direction are supported by the students working without the teacher's instruction at their own pace for the majority of the class time. They were able to review by checking their mistakes and scores, as well.

4. The participants mentioned that they were able to understand what the speakers said well if they had a chance to predict what they heard and have some background knowledge about what they are going to listen to. This finding supports the study of Sooksripanich (1991) and Rixon (1986) which states that students who are encouraged to form their own expectations about what they will hear seem to recognize and understand much more than those who come to a listening passage without any preparation.

5. This suggests that a variety of activities (pre-listening activities, listening strategy study, related vocabulary review, listening ability practice, demonstration of the use of listening strategies in other tasks, listening ability practice, listening script review, and self assessment) should be developed not only for use in the class, but also for self-directed learning. This finding also supports the results of studies by Thanarak (1992), and Sooksripanich (1991) which show that students generally have a positive attitude towards listening training.

Improvement of Listening Comprehension through SLCEP

1. Regarding the students' opinions towards the SLCEP and its applicability, it was found that the participants were highly impressed with the SLCEP for two main reasons. First, it motivated them to practice their listening skills via a web-based computer program, and as a result they improved their listening skills in terms of understanding the main idea and supporting details from the speakers. Second, it made them more confident in listening to English.

2. The results of the study also confirmed the previous research studies, as the students were satisfied with the SLCEP. These findings were in agreement with Meskill (1996), Riyai & Khomsri (2012), Nobar & Ahangari (2012). They have also found

consistently that practicing listening through computerized instructions or computer mediated situations made the learners more satisfied and improved their listening skills.

3. The participants of the study showed that they enjoyed and were satisfied with practicing listening skills via computerized program. These findings were in agreement with numerous studies mentioning that computerized media and a multimedia environment can be helpful for improving listening comprehension (Boonjun, 2006; Kanjiak, 2006; Srithaweep, 2006; Chamnanya, 2009; Jungsatidkul, 2012).

CONCLUSIONS

In conclusion, the results of this quasi-experimental study revealed that student performance improved after learning through the SLCEP. There were also statistically significant differences between the pre-test and post-test scores at a p-value level of 0.000. These results also revealed that the developed SLCEP was efficient in improving listening comprehension for engineering students. With regard to the students' satisfaction of the exercises constructed program, it was found that overall, they were satisfied with the program and they all enjoyed learning this program.

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