แบบจำลองการสร้างโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย

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มหาวิทยาลัยเทคโนโลยีสุรนารี

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรดุษฎีบัณฑิต
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A MODEL FOR PRODUCING A MOBILE PHONE-ASSISTED ENGLISH LISTENING APPLICATION

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งานวิจัยนี้มีวัตถุประสงค์เพื่อพัฒนาแบบจำลองการสร้างโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย และตรวจสอบประสิทธิผลของแบบจำลองการสร้างโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วยที่พัฒนาขึ้น โดยการประเมิน 1) ประสิทธิภาพของโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย ซึ่งสร้างตามแบบจำลองที่พัฒนาขึ้น 2) ผลสัมฤทธิ์ทางการเรียนของพระนิสิตหลังการเรียนด้วยโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย และ 3) การรับรู้และการตอบสนองของพระนิสิตที่มีต่อการเรียนด้วยโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย

ในการศึกษาครั้งนี้ หลังจากได้พัฒนาแบบจำลอง ซึ่งใช้ชื่อว่า แบบจำลองสุริยาวุธ (Suriyawuth Model) แล้ว ผู้วิจัยใช้แบบจำลองนั้นเป็นแนวทางในการออกแบบและพัฒนาโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย จากนั้น ดำเนินการตรวจสอบประสิทธิผลของแบบจำลองด้วยรูปแบบการวิจัยแบบหนึ่งกลุ่มทดสอบก่อนและหลังการทดลอง

ประชากร ได้แก่ พระนิสิตสาขาวิชาภาษาอังกฤษ จำนวน 18 รูป ที่ลงทะเบียนเรียนในรายวิชาการฟังและการพูดภาษาอังกฤษ 1 ในภาคการศึกษาที่ 1 ปีการศึกษา 2554 ที่มหาวิทยาลัยมหาจุฬาลงกรณราชวิทยาลัย วิทยาเขตนครราชสีมา ซึ่งเลือกมาแบบเจาะจง เครื่องมือที่ใช้ในการวิจัยประกอบด้วย โปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย แบบทดสอบวัดผลสัมฤทธิ์ทางการเรียน แบบสอบถาม และแนวคำถามสำหรับการสัมภาษณ์แบบกึ่งโครงสร้าง ก่อนการทดลอง ผู้วิจัยให้พระนิสิตทำแบบทดสอบวัดผลสัมฤทธิ์ทางการเรียน จากนั้น ทำการทดลองโดยให้พระนิสิตเรียนด้วยโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย หลังการทดลอง ให้พระนิสิตทำแบบทดสอบวัดผลสัมฤทธิ์ทางการเรียนอีกครั้ง แล้วตอบแบบสอบถามและการสัมภาษณ์แบบกึ่งโครงสร้าง สถิติที่ใช้ในการวิเคราะห์ข้อมูลเชิงปริมาณประกอบด้วยความถี่ ร้อยละ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน และสถิติทดสอบทีแบบกลุ่มตัวอย่างไม่เป็นอิสระกัน (Dependent sample t-test) ส่วนข้อมูลเชิงคุณภาพวิเคราะห์โดยใช้การวิเคราะห์เนื้อหา (Content analysis)

ผลการวิจัยครั้งนี้สรุปได้ ดังนี้

1. แบบจำลองการสร้างโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วยประกอบด้วย 4 ขั้นตอน คือ 1) ขั้นการวางแผน (Planning) 2) ขั้นการออกแบบ (Design) 3) ขั้นการพัฒนา (Development) และ 4) ขั้นการนำไปใช้ (Validation)

2. แบบจำลองการสร้างโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วยที่พัฒนาขึ้นมีประสิทธิผล โดยเห็นได้จาก;

2.1 โปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย ซึ่งสร้างตามแบบจำลองที่พัฒนาขึ้น มีประสิทธิภาพ 82.40/80.93 ตามเกณฑ์ที่กำหนดไว้ (E_1/E_2 = 80/80)

2.2 หลังจากเรียนด้วยโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย พระนิสิตมีผลสัมฤทธิ์ทางการเรียนสูงขึ้นอย่างมีนัยสำคัญทางสถิติที่ระดับ .05

2.3 พระนิสิตมีการรับรู้และการตอบสนองต่อการเรียนด้วยโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย อยู่ในระดับดี

มหาวิทยาลัยเทคโนโลยีสุรนารี

สาขาวิชาภาษาต่างประเทศ ลายมือชื่อนักศึกษา _____

ปีการศึกษา 2555 ลายมือชื่ออาจารย์ที่ปรึกษา _____

SURIYAWUTH SUWANNABUBPHA : A MODEL FOR PRODUCING A MOBILE PHONE-ASSISTED ENGLISH LISTENING APPLICATION. THESIS ADVISOR : DHIRAWIT PINYONATTHAGARN, Ph.D. 280 PP.

SURIYAWUTH MODEL/MALL/MAEL APPLICATION/M-LISTENING

The objectives of this research were to develop a model for producing a mobile phone-assisted English listening application and examine the effectiveness of the developed model for producing a mobile phone-assisted English listening application by assessing (1) the efficiency of the mobile phone-assisted English listening application—produced in accordance with the developed model, (2) the student's learning achievement after learning through the mobile phone-assisted English listening application, and (3) the students' opinions towards learning through the mobile phone-assisted English listening application.

In the study, after developing the model which was called "Suriyawuth Model", this model was used as a guideline for designing and developing a mobile phone-assisted English listening (MAEL) application. Then the effectiveness of the model was examined using a one group pretest-posttest research design.

The population was 18 third-year English program students enrolling on the Listening and Speaking I course in the first semester of the Academic Year 2011 at Mahachulalongkornrajayidyalaya University Nakhon Ratchasima Campus and these students were selected purposively. The instruments consisted of the MAEL application, an achievement test, a questionnaire, and guided questions for

semi-structured interview. Before learning through the MAEL application, the students took a pre-achievement test. Then they learned through the MAEL application. After the MAEL activities, the students took a post-achievement test and responded to the questionnaire and semi-structured interview. The statistics consisting of the frequency, percentage, mean, standard deviation (S.D.) and dependent sample t-test were used to analyze the quantitative data, whereas the content analysis was used to analyze the qualitative data.

The results of the research can be summarized as follows.

1. The components of the model for producing a mobile phone-assisted English listening application consist of four main stages: (1) planning, (2) design, (3) development, and (4) validation.

2. The developed model for producing a mobile phone-assisted English listening application was effective, since it could be seen from the following:

2.1 The efficiency of the mobile phone-assisted English listening application produced in accordance with the developed model was 82.40/80.93, which corresponded to the efficiency criterion determined at $E_1/E_2 = 80/80$.

2.2 The students' learning achievement after learning through the mobile phone-assisted English listening application was significantly higher at the .05 level.

2.3 The students' opinions towards learning through the mobile phone-assisted English listening application were in the "good" level.

School of Foreign Languages

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Student's Signature _____

Advisor's Signature _____

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LIST OF ABBREVIATIONS

MALL = Mobile Assisted Language Learning

MAEL = Mobile Phone-Assisted English Listening

CALL = Computer-Assisted Language Learning

TELL = Technology-Enhanced Language Learning

MCUNRC = Mahachulalongkornrajavidyalaya University Nakhon Ratchasima Campus

E_1 = Efficiency Value of Learning Process

E_2 = Efficiency Value of Learning Outcome

L2 = Second Language

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CHAPTER 1

INTRODUCTION

1.1 Background

In Thai context, the instruction of English language becomes an essential part of the educational system due to the needs for the international negotiation about politics, economics, and education. English language has become the international language that people throughout the world use to communicate with each other. Internet, for example, has utilized English as a medium to deliver content for the users in many countries. Thus, the students with good proficiency in English can get a great advantage in the age of information and communication technology.

However, the Thai students' abilities to use English language for communication by speaking, listening, writing, and reading still remain insufficient. Even though most Thai students have been learning English for sixteen years, it can be said that their English proficiency is very low (Silanoi, 2005). The skills, especially listening, are not totally neglected but only briefly introduced to students. As Wiriyachitra (2002) and Wiriyachitra and Keyuravong (2002) pointed out that listening is not the focus skill in English curriculum of Thai education. This seems to contradict the intentions of English education as specified in the curriculum.

The problem becomes clearer when the students enter the university, especially in the area of listening comprehension. Some courses are lectured in English and the English textbooks and resources are used to deliver the content. This seems to bring about the frustrations to the students who have poor listening ability to understand. According to

Puphala (2008), listening comprehension ability of the students at Maha-chulalongkornrajavidyalaya University is at a very low level. They can not grasp the meaning of listening texts in terms of main idea, specific information, and inferences. This may result from their previous studies that they had very little experience in listening comprehension practice. Especially, in the Thai context where people use English as a foreign language (EFL), the chance to use English as a medium to communicate with others is very rare in the students' daily lives.

One of the methods to enhance the listening comprehension of the university students is to utilize the mobile phone for language learning. Mobile assisted language learning (MALL) is a new challenge for the language teacher to seek the effective way in designing a language lesson that can be played on mobile devices such as mobile phones, tablets, PDAs, MP3/MP4 players, video games, etc. At present, most of the university students own various models of mobile devices, especially mobile phones. In Japan, for instance, mobile phone ownership has been reported to be nearly universal amongst college-aged individuals (Dias, 2002a; Thornton and Houser, 2005). In a recent study of students in higher education in the United States (Kvavik, 2005), 82% owned mobile phones. In the same study, however, less than 12% owned PDAs. Even in cases where they must be acquired, mobile technologies are typically less expensive than standard equipment, such as PCs.

The portability of mobile devices is another benefit. They can be just as easily utilized outside of the classroom as they can be done in the classroom; learners can study or practice manageable chunks of information in any place on their own time, thereby taking advantage of their convenience. As Yamaguchi (2005) points out, "A computer is better than a mobile phone for handling various types of information such as visual, sound, and textual information, but mobile phone is superior to a

computer in portability. And some students do not have their own computer" (p. 57).

However, there is insufficient research on how the MALL materials contribute to improving students' L2 learning when compared to CALL materials. Most MALL studies that have been published so far seem to employ text messaging for vocabulary learning and quizzes and surveys (Norbrook and Scott, 2003; Pincas, 2004; Levy and Kennedy, 2005; McNicol, 2005;). This may result from the fact that mobile assisted language learning parallels the advancement of mobile technology and authoring tools—like Adobe Flash Professional—allowing language teachers to produce a MALL material. The language teacher, thus, still needs to search for the evident indicating the effective approach for design and implementation of MALL materials to facilitate the students' language acquisition. If it is so, most of the CALL theories that have been reported may also be found in the following MALL studies.

Based on the aforementioned problems, the researcher, therefore, is interested in investigating an effective way to design and develop a MALL material by developing a model. This model will be used as a guideline for producing a mobile phone-assisted English listening (MAEL) application specifically designed to improve listening comprehension abilities of third-year English program students enrolling on Listening and Speaking I course in the first semester of 2011 at Mahachulalongkorn-rajavidyalaya University Nakhon Ratchasima Campus. In addition, the effectiveness of the model will also be examined by assessing the efficiency of the MAEL application, students' learning achievement, and their opinions towards learning through the MAEL application.

1.2 Research Objectives

1.2.1 To develop a model for producing a mobile phone-assisted English listening application

1.2.2 To examine the effectiveness of the developed model for producing a mobile phone-assisted English listening application by assessing:

1) the efficiency of the mobile phone-assisted English listening application—produced in accordance with the developed model,

2) the student's learning achievement after learning through the mobile phone-assisted English listening application, and

3) the students' opinions towards learning through the mobile phone-assisted English listening application.

1.3 Research Questions

1.3.1 What are the appropriate components of the model for producing a mobile phone-assisted English listening application?

1.3.2 How effective is the developed model for producing a mobile phone-assisted English listening application?

1) Is the mobile phone-assisted English listening application—produced in accordance with the developed model—efficient based on the efficiency criterion determined at E_1/E_2=80/80?

2) Is there any significant difference in the students' learning achievement after learning through the mobile phone-assisted English listening application?

3) What are the students' opinions towards learning through the mobile phone-assisted English listening application?

1.4 Research Hypothesis

1.4.1 The mobile phone-assisted English listening application is efficient based on the efficiency criterion determined at E_1/E_2 = 80/80.

1.4.2 The students' learning achievement after the treatment is significantly higher than their learning achievement before the treatment.

1.4.3 The students' opinions towards learning through the mobile phone-assisted English listening application are in the "good" level.

1.5 Scope of the Study

1.5.1 Population

This study investigated from the population which was all the third-year students (N=18) of English program purposively selected from the Faculty of Humanities at Mahachulalongkornrajavidyalaya University Nakhon Ratchasima Campus (MCUNRC). These students enrolled on Listening and Speaking I course in the first semester of the Academic Year 2011 and all of them were Buddhist monks and novices.

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1.5.2 Variables

1.5.2.1 Independent Variable

The independent variable is the instruction through the mobile phone-assisted English listening application.

1.5.2.2 Dependent Variables

Dependent variables includes students' learning achievemen-tand opinions towards learning through the mobile phone-assisted English listening application.

1.5.3 Contents of the Mobile Phone-Assisted English Listening Application

The contents consist of short and long conversations in the form of dialogues of various situations in daily life. Since most students are considered as pre-intermediate and intermediate learners of English language, the selection of the contents to be put in the mobile phone-assisted English listening application is based on the students' English language proficiency in terms of listening skill. The application comprises six lessons, including:

Lesson 1 Personal Profiles

Lesson 2 Countries and Languages

Lesson 3 Occupations

Lesson 4 Free Time Activities

Lesson 5 Possessions

Lesson 6 Buying Things

1.5.4 Listening Comprehension Abilities

The mobile phone-assisted English listening application is expected to help the students comprehend the listening texts by (1) identifying the main idea, (2) finding out specific information, and (3) making inferences.

1.5.5 Period of the Study

Research procedures started from the first semester of the Academic Year 2010 to the first semester of the Academic Year 2011 at Mahachulalongkorn-rajavidyalaya University Nakhon Ratchasima Campus.

1.6 Delimitation of the Study

Since this study was aimed at developing a model for producing a mobile phone-assisted English listening application and examining its effectiveness by determining the efficiency of the mobile phone-assisted English listening application, the students' learning achievement, and the students' opinions towards learning through the mobile phone-assisted English listening application, eighteen third-year students of English program were purposively selected from the Faculty of Humanities in the first semester of the Academic Year 2011 at Mahachulalongkorn-rajavidyalaya University Nakhon Ratchasima Campus in order to participate in the mobile phone-assisted English listening activities. Thus, these students might not be good representatives of the third-year students of other programs at the University or other institutions.

In the classroom activity, furthermore, the mobile phone-assisted English listening application (or mListening) were installed in the mobile phones of students. The students used their own mobile phones which were different in terms of models, operating systems and screen resolutions. These might be the variables that affect the results of this study.

1.7 Definitions of Key Terms

1.7.1 Model for producing a mobile phone-assisted English listening application means the model that the researcher develops for designing and developing a mobile phone-assisted English listening application. The model contains logical steps of constructing the application and combines the principles for teaching listening, Gané's instructional model, and Alessi and Trollip model for

design and development of multimedia materials.

1.7.2 Mobile phone-assisted English listening application means a mobile phone program which is called, “mListening”. It comprises six lessons of English listening and is constructed in accordance with the developed model in this study. The application provides the students with English listening practices through listening activities in various situations. This application is an Adobe Air application built with Flash Professional in order to display standalone applications using Adobe Air runtime across platforms of mobile devices. They include iOS by Apple Incorporation and Android by Google Incorporation.

1.7.3 Mobile phone means a handheld phone or smartphone that is certified by Adobe Incorporation to run the Adobe Air application as well as has a touch-screen and operating system of iOS 4.3 or later or Android 2.2 or later.

1.7.4 Effectiveness of the model means the effectiveness of the model in producing a mobile phone-assisted English listening application by assessing the efficiency of the application, students’ learning achievement after utilizing the application, and students’ opinions towards learning through the mobile phone-assisted English listening application.

1.7.5 Efficiency criterion means the criterion implemented to decide whether or not the developed mobile phone-assisted English listening application is efficient. In this study, the efficiency criterion is set at E_1/E_2 = 80/80, which indicates as follows:

The first 80 (E_1) means the percentage of mean scores that students gain from doing exercises or activities in the application.

The second 80 (E_2) means the percentage of mean scores that students

gain from doing posttests in the application.

1.7.6 Learning achievement means the students' progress or abilities in listening comprehension after learning through the mobile phone-assisted English listening application. The achievement test of listening comprehension developed by the researcher is employed to measure the students' achievement in learning of listening.

1.7.7 Opinions mean the students' views or feelings about the mobile phone-assisted English listening application after making use of it.

1.7.8 Students mean all the third-year students of English program in the Faculty of Humanities at Mahachulalongkornrajavidyalaya University Nakhon Ratchasima Campus. The students enrolled on Listening and Speaking I course in the first semester of the Academic Year 2011.

1.8 Expected Results

This study provides an effective way to design a mobile phone-assisted English listening (MAEL) application utilized for improving students' listening comprehension abilities. Also, it could be used as a guideline for developing the mobile application of other contents of English language or subjects. This could be beneficial for the area of mobile technology application in language learning and teaching.

In summary, this chapter describes the background followed by the objectives, questions, and hypotheses of this study. Then the scope, delimitation, and definitions of key terms are presented. Lastly, the expected results are described.

CHAPTER 2

LITERATURE REVIEW

This chapter examines the related literature which is used as a conceptual framework for designing a model for producing a mobile phone-assisted English listening application in this study. The reviewed topics consist of (1) mobile assisted language learning, (2) models applied for producing MALL materials, (3) assessing the efficiency of MALL materials, (4) how to teach listening, and (5) previous MALL studies.

2.1 Mobile Assisted Language Learning

2.1.1 What Is Mobile Assisted Language Learning?

Mobile assisted language learning (MALL) is a specific term used in the field of application of technology in language learning and teaching or technology -enhanced language learning (TELL). The general term for the use of mobile devices in education is mobile learning (or m-learning). Mobile learning is undergoing rapid evolution. Early generations of mobile learning projects tended to propose formally-designed activities, carefully crafted by educators and technologists, and using emerging technologies that were not yet widely accessible or well understood. Current widespread ownership of mobile and wireless devices means that learners are increasingly in a position to take the lead and engage in activities motivated by their personal needs and circumstances of use, including

those arising from greater mobility and travel (Kukulska-Hulme, Traxler and Pettit, 2007; Pettit and Kukulska-Hulme, 2007). While, in the past, mobile learning has often been defined in terms of its use of mobile technologies, more recent thinking has foregrounded the mobility of the learner (Sharples, 2006). Often, the informal aspects of m-learning are also emphasized (Fallakhair, Pemberton, and Griffiths, 2007).

While it could be argued that m-learning involves the use of any portable learning materials, so includes books, audio-cassettes, audio-CDs, and portable radios and DVD players, for example, m-learning usually concentrates on the most recent technologies. Trifanova, Knapp, Ronchett, and Gamper (2004, p.3) define mobile devices as "...any device that is small, autonomous and unobtrusive enough to accompany us in every moment". Typically, m-learning is identified both by being available "anywhere, anytime" (Geddes, 2004) and by the tools used. According to Traxler (2005), mobile learning can perhaps be defined as any educational provision where the sole or dominant technologies are handheld or palmtop devices. Kukulska-Hulme and Shield (2007) divide mobile device employed in language learning studies into four categories: mobile phones, handheld computers or PDAs, MP3/MP4 players, and digital voice recorders.

For the present study, mobile assisted language learning refers to English language learning mediated via mobile phones and available anywhere, anytime. Such learning may be formal or informal. The English lessons, which provide the learners with listening comprehension practices, are created by the use of Adobe Flash Professional (by Adobe Inc.) programming to run on the mobile phones. Adobe Flash Professional allows the developers to construct a multimedia application that can be played on many models of mobile phones with a touch-screen.

Adobe also releases Adobe Air which is a runtime for smartphones installing one of two operating systems: (1) iOS 4.3 or later by Apple Incorporation and (2) Android 2.3 or later by Google Incorporation. This runtime helps the mobile application (app) created with Adobe Flash Professional run across the platforms. That is, the Flash-based application can be published for both iOS and Android devices.

2.1.2 Mobile Phones and Language Learning

Currently, in line with Pęcherzewska and Knot's findings (2007) concerning m-learning in general, the majority of MALL activities appear to make use of mobile phones. Although Collins (2005) outlines very clearly how such activities could take advantage of what these devices offer, the most frequent seem to employ text messaging for vocabulary learning (Andrews 2003; ; Norbrook and Scott, 2003; Pincas, 2004; Levy and Kennedy, 2005; McNicol, 2005), and quizzes and surveys (Tomorrow's Professor Listserv, 2002; Norbrook and Scott 2003; Levy and Kennedy, 2005; McNicol, 2005).

Mobile-based email has been used to promote vocabulary learning (Thornton and Houser, 2005). Students have also been encouraged to use mobile phones to access web-based video clips explaining English idioms. Such approaches support teacher-learner communication and use the mobile device to deliver content rather than encouraging learners to communicate with each other or with their tutors. Some studies, however, do promote learner-learner interaction. For example, Dias (2002a, 2002b) set up a web-board accessible by mobile phone for purposes such as providing links to English language learning websites. Accessing the web-board via mobile phone, learners could also interact asynchronously with each other, their teachers and any guest lecturers. Dias also set up a mobile phone-accessible mailing

list to communicate administrative issues such as room changes to students. Again, however, these activities are solely text-based. Multimedia approaches to mobile phone-based MALL are, however, occasionally reported. City College, Southampton set up a web-based "media board" (similar to a web-board but supporting MMS as well as SMS) and supplied learners of English as a Second Language (ESL) with mobile phones that have inbuilt cameras and voice recording facilities. Learners were required to obtain specific information, either oral or visual, from the immediate locality and to send it to the media-board for access by other learners as well as tutors. Here, learners took part in activities that could only be carried out because of the portability of the devices; they had to visit certain locations in order to obtain the information they needed.

Although mobile phones were developed to allow oral interaction, MALL rarely seems to make use of this affordance, at least in published research. An exception is found in a study at Stanford University (Tomorrow's Professor Listserv, 2002), where native speakers of the target language (L2) coached learners via mobile phone. This approach was abandoned when scheduling difficulties intervened. A second activity requiring oral interaction was also tested at Stanford University; learners used their mobile phones to take part in automatic voice-controlled grammar and vocabulary quizzes. Although these were accessible at any time and from any location that has mobile phone network coverage, the activity was abandoned primarily because of problems with voice recognition software. Although this study promoted oral production, like many other documented MALL activities, it used the mobile device to deliver materials, albeit materials with which the learner could interact rather than receive passively.

As mentioned above, m-learning in more formal language learning contexts tends to concentrate on the delivery of activity types such as quizzes and vocabulary items that the provider believes to be relevant to their needs. However the design of MALL activities may depend on the advancement of mobile phones and authoring programs that allow developers to create a more interesting multimedia lesson. The authoring program, Adobe Flash Professional, for example, allows language teachers to design and develop a multimedia English lesson in the form of SWF (Small Web Format) file that can be played on mobile phones. To play the lesson file, the mobile phones need to have Flash Lite Player installed. Adobe distributes Flash Lite Players for various models of mobile phones such as Nokia, Sony Ericson, LG, Samsung, Motorola, Panasonic, Acer, HP, etc. New release of these mobile phones has Flash Lite Player pre-installed by the manufacturers, but for some models, the users need to install themselves by downloading it for free from Adobe website (www.adobe.com). In addition, Adobe Flash Professional also allows the developers to publish the multimedia English lesson in the form of native application (or app) for installing on the iOS and Android smartphones with touch-screen by publishing the application to the app store and Google play.

An example of a Flash-based MALL lesson can be found in a study at the College of Internet Distance Education (CIDE), Assumption University, Thailand (Aranaki, 2008). In this study, the researcher has developed mobile learning system specifically to learn English speaking and listening skills for CIDE students. The students would read and listen to English conversations recorded by two native speakers. He uses Adobe Flash Professional to create multimedia English lessons that can be played on mobile phones and PDAs. He also points out that the dynamic

mobility feature of mobile learning along with high resolution color graphics and advanced sound technology has made learning English easier, more accessible, and more enjoyable than ever before.

One of the newest technologies with potential application in language learning is moblogging, an amalgam of mobile and weblogging. Mielo (2005) further defines moblogging as using a cell phone or PDA in the field to post words and/or pictures to a website. Blogs themselves are a recent trend in language teaching. They provide opportunities for language creation (i.e., journaling) and collaborative activities. Moblogs offer the potential to expound these benefits by removing time and place boundaries and adding authentic and personal visual content. While the applications of cell phones have typically been pedagogic in nature, they have also been used for practical or administrative matters, such as simplified and flexible student-teacher communications (e.g., course updates and reminders) and referrals to related websites and other up-to-date instructional resources (Dias, 2002a; Levy and Kennedy, 2005).

It can be seen that MALL activities are designed and developed in accordance with the advancement of mobile phones and authoring programs. In the past, the MALL activities might be limited and concentrated on the delivery of quizzes and vocabulary items. New technology of mobile phones and authoring programs allows developers to design and create a more interesting multimedia MALL lesson that is similar or nearly similar to the computer-assisted language learning (CALL) lesson.

2.1.3 Categories of MALL Applications

Like CALL programs, MALL applications may be categorized variously depending upon their characteristics. According to Alessi and Trollip (1991) and Newby, Lehman, Stepich and Russell (2000), there are four major classifications of MALL applications: tutorials, drill and practice, simulations, and instructional games.

First, tutorials present new information to learners such as particular skills, information or concepts. Learners are typically questioned during the tutorial in order to verify comprehension. They interact with the mobile phone in answering some comprehension questions. Feedback is given to them in order to confirm accurateness of student responses or to correct the wrong responses. They are usually allowed to move through the program at their own rate. The mobile phone assumes the primary instructional role of teachers or tutors.

Second, drill and practice provide learners with opportunities to practice in order to promote proficiency and fluency. Price (1991) points out that drill and practice are not exactly the same. Drill activities deal with factual memorization, whereas practice focuses on the development of skill fluency. However, drill and practice are conducted with the belief that practice leads to better performance. It is usually implemented with the purpose of reinforcing or strengthening skills which students have received through other teaching systems or instruction. Feedback is given to them to reinforce correct responses and to correct or remedy incorrect responses. It acts as an individual ‘teacher’ for each student because it can patiently wait for the learners’ answers. It can provide endlessly patient and flexible supervision which normal teachers cannot spare the time for.

Higgins and Johns (1984, p. 37) point out the theory behind the drill and practice:

> …the assumption is that repetition and near-repetition is needed to 'internalize' a piece of behavior and add it to the stock of language behaviors that can be used spontaneously. The strength of the learning is related to the number of repetitions.

However, drill and practice often appear more like testing than instruction. They do not teach students how to solve the problems but they simply inform them whether the answer is correct or not. Heermann (1988) seems to point out that although it can be said that drill and practice programs provide students with immediate feedback, self-pacing, and a certain degree of interactivity, they are very highly linear and lock-step approaches. According to Higgins (1993), drill and practice programs seem to focus heavily on vocabulary or discrete grammar points. This type of program is widely available in the market.

For the third category of MALL application, simulations, they provide controlled learning environments that closely represent the real world environment. They are designed to execute actions that students take in the simulated environment to be similar to those that would occur in the actual environment. Grabe and Grabe (2004) point out that simulations provide various potential advantages for the classroom: concreteness, control, cost-effectiveness, and safety. First, learners are provided with chances to experience things that cannot really be observed. For example, the programs can be used with learning that cannot be observed with the naked eye or learning that requires a long time to observe. Second, learners are given an opportunity to make decisions and control situations to see logical consequences in tasks which they may not be able to be put in control of doing in real life

environments. Third, they can experience some situations that are at a reasonable cost to the institution. The simulations are used when the costs of alternative teaching methods are extremely high. Fourth, with simulations, learners can experience learning situations that might be dangerous for them directly. When risks are considered very high, simulations might be a better option for the learning environment. It is advantageous because it reduces risk in learning or allows learning that cannot be easily taught using traditional methods.

Heermann (1988) points out that there are four major forms of educational simulations: non-interactive, interactive, group competitive, and individual competitive simulations. Non-interactive simulations model reality and inform learners about the components of a system but learners cannot interact with the model. On the other hand, interactive simulations permit them to interact with the system to observe how the interaction has an effect on the whole system. Group competitive simulations present problems and allow the decisions of competing teams of students to solve it, whereas individual competitive simulations make each individual student find the solutions of the problems.

Fourth, instructional games provide high motivation in learners. They incorporate the features of games into the program. They promote competition among learners themselves or between learners with the mobile device. They also provide an entertaining environment for learners to be in contact with the culture of the target language and the target language itself. The games do not provide learners with a typical 'learning atmosphere'. Graphics, animation, sound and other sensory enhancements are fully employed to appeal to and attract learners.

In the present study, the MALL application is a type of practice which primarily focuses on the development of English listening skill fluency. The application is called a mobile phone-assisted English listening application or mListening, which provides six lessons of listening practice. Each lesson consists of pretest, pre-listening task, listening task, post-listening task, and posttest. This application will be install on students' touch-screen smartphones certified by Adobe Incorporation to run the Flash-based or Air applications. The students can control the application by using a finger to touch a button on the screen.

2.2 Models Applied for Producing MALL Materials

This study adapts two instructional models for designing and developing a multimedia MALL application. One is Gané's instructional model; the other is Alessi and Trollip model for design and development of multimedia materials. Gané's model is utilized for presenting the MALL contents, whereas Alessi and Trollip model is used for designing and developing a MALL material.

2.2.1 Gané's Instructional Model

Gané (1985) develops two conditions of learning. They include learning theory and instructional management. Gané's learning theory consists of two elements: learning outcomes and processes of learning and memorizing. Learning outcomes refer to human abilities in terms of intellectual skills, cognitive strategy, verbal information, motor skills, and attitudes. For the processes of learning and memorizing, human beings process information within their brain by considering the collected information. Meanwhile external events have effects on increase or decrease of the learning that happens inside. Gané suggests that the management of

conditions of learning should be appropriate to each type of learning which is different. Outside learning condition should promote the inside learning process of learners. According to Gané's Instructional model, there are nine steps of instruction as follows.

Step 1 Gain Attention

This step aims to rouse learner's interest. This helps the learners to well receive what to be learned.

Step 2 Inform Learners of Objectives

This step aims to inform the instructional objectives to the learners before learning. This helps the learners know the expected outcomes of the lesson.

Step 3 Stimulate Recall of Prior Learning

This step aims to arouse learner's background knowledge. It helps the learners recall to the old information in long-term memory and bring it to the working memory in order to connect it with the new one.

Step 4 Present the Content

This step aims to present stimulus as the new content. The key concepts or important characteristics of the new content should be clear enough to encourage learning.

Step 5 Provide Learning Guidance

This step is to guide learners how to solve problems and give examples to help them understand the new content.

Step 6 Elicit Performance

This step is to let the learners show their abilities. Learners will have a chance to practice and test their own learning with exercises.

Step 7 Provide Feedback

This step is to give reinforcements and useful information to the learners.

Step 8 Assess Performance

This step helps the learners to know their own achievement in instructional objectives.

Step 9 Enhance Retention and Transfer to the Job

This step aims to provide the learners with more practices in various situations. It helps them understand and apply knowledge in other situations.

In designing a MALL lesson, the Gané's nine-step model may be applied as shown in Table 2.1

Table 2.1 Application of Gané's instructional model in MALL activities

Steps	Examples of Techniques in MALL activities
1. Gain Attention	Use multimedia such as colorful pictures and texts, sounds, moving pictures, animation, VDO, and cartoon to present the content at beginning.
2. Inform Learners of Objectives	Inform behavioral objectives to the learners at the beginning of each lesson. In writing objectives, use three principles including (1) defining measurable behaviors with action words, (2) defining conditions, and (3) defining standard (Brahmawong, Netprasoet, and Sinsakun, 1977; Mager, 1997).
3. Stimulate Recall of Prior Knowledge	Use pretest and present the content that the learners already knew or leaned.

Table 2.1 (Continued)

Steps	Examples of Techniques in MALL activities
4. Present the Content	Provide content with interactions. The content is short and precise. Begin the content with the simple one to the complicated one.
5. Provide Learning Guidance	Provide examples, help, and overview of the content in the MALL application.
6. Elicit Performance	Provide exercises in the form of multiple choice, true/false, multiple correct choice, visual identification, segueing, fill-in-multiple-blanks, and matching.
7. Provide Feedback	Provide feedback for doing exercises in the form of applaud, explanation, and music showing correct or incorrect answers.
8. Assess Performance	Use posttest to assess the learners' achievement compared to the accepted criteria.
9. Enhance Retention and Transfer to the Job	Provide more worksheet or homework to practice by giving other situations that the learners can apply knowledge in solving problems.

Note: Adapted from "Instructional Design for e-Learning" by Thanavasathian and Sakchiraphaphong, 2006, pp.40-42.

2.2.2 Alessi and Trollip Model for Design and Development

Alessi and Trollip (2001) develop a model for design and development of interactive multimedia materials (see Figure 2.1). Many of the procedures in this model corresponds to the components of the Instructional System Design (ISD) approach. The parts of the ISD approach, which are specifically related to individual program design, are taken to simplify for the instructional developer who is interested in creating a multimedia material delivered on computer or others.

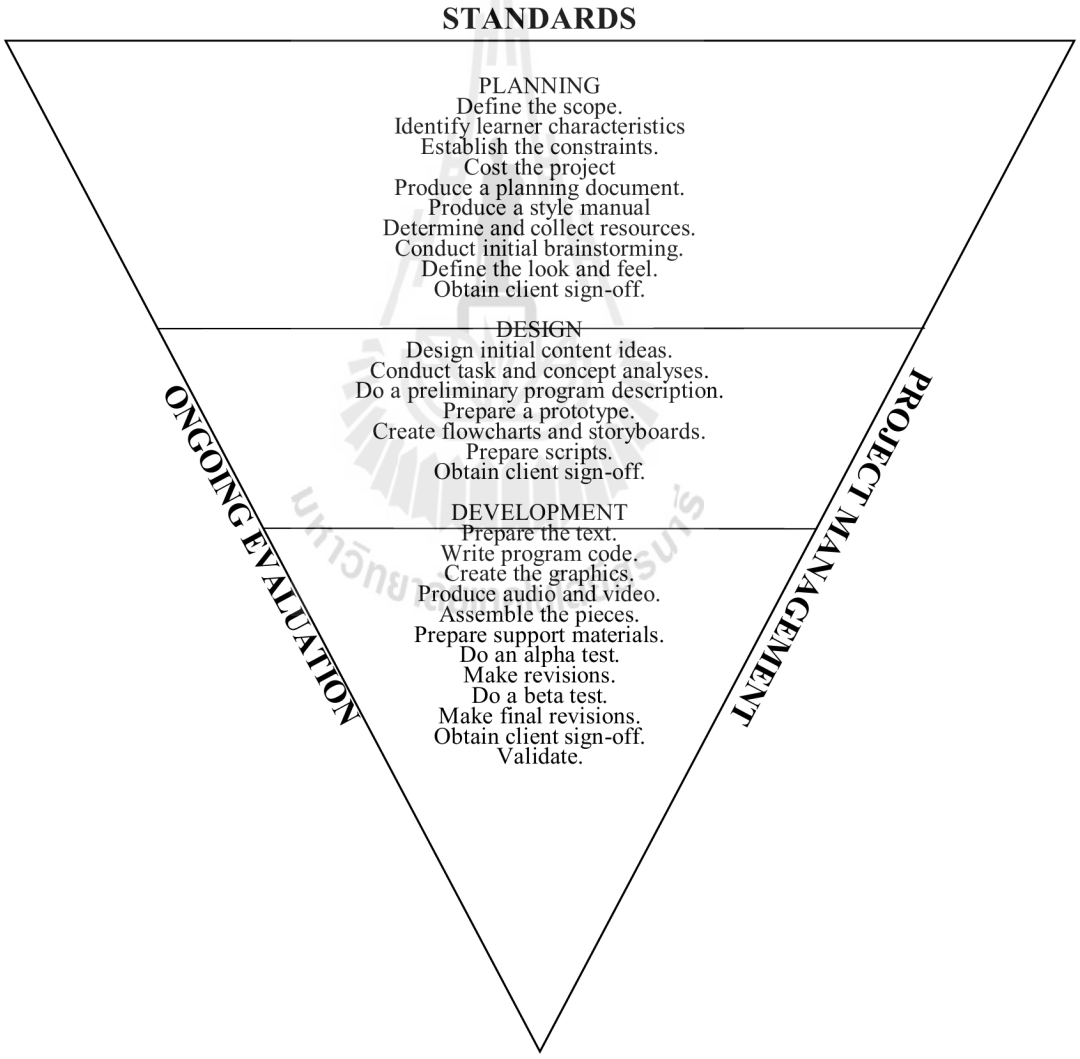

Figure 2.1 Alessi and Trollip model for design and development

Note: From "Multimedia for Learning: Methods and Development" by M.S. Alessi, and R.S. Trollip, 2001, p. 410.

There are several important features the approach embodies. First, it is standards based. That is, The standards are all aspects of the final product, and throughout the project everyone involved must know what he or she is striving for.

Second, it is an empirical approach. Development is based on a cycle of drafting, evaluating, and revising until the product works. Although there is much research in learning and instruction to guide in developing instruction, the best guarantee that a program will be effective is to try it out, revise it, try it again, and so on until the right is got. Alessi and Trollip Model incorporates ongoing evaluation throughout the design and development phases, which prevents costly surprised from surfacing near the end of a project.

The third feature is that a project must be well managed from beginning to end. Multimedia projects have a tendency to get off track and to end up taking more time to produce than planned and costing more than budgeted. With good project management such slippage can be contained while still maintaining desired standards.

A fourth important feature is that the model is driven by principles of cognitive psychology. These principles comprise the perception and attention, encoding, memory, comprehension, active learning, motivation, locus of control, mental models, metacognition, transfer of learning, and individual differences. Some constructivist principles are also central: anchored instruction, collaborative learning, and reflective learning.

The fifth feature is the progression from discussion to ideas to implementation. Designers should spend considerable time for discussing and planning with other people and then drafting ideas before implementing the plans.

The sixth important feature is an emphasis, especially early in the development process, on creativity. Poor multimedia applications are often developed as a result of cookbook-style instructional design where the developer is never really able to be capabilities of electronic technology.

The seventh and last feature is that Alessi and Trollip encourage a team -oriented approach. According to Roblyer (1988), courseware is always better when several people collaborated. This is true for two reasons. First, more skills and knowledge are involved in a development effort than one person typically has, especially when it comes to multimedia. In most cases a project team should include people with expertise in instructional design, programming, graphics arts, and the subject matter. For many multimedia projects audio and video specialists as well as actors and people with good voices may be needed. Second, several people working together raise the expected standard of acceptable quality. A team generally has more creative ideas than an individual and is more demanding of high standards.

The model has three attributes: standards, design, and development. They are the principles to be applied to the whole process of design and development.

Standards are the starting point and the foundation of a good project. They define the quality that the project team constantly strives for. Typically, a set of standards derives from two sources. First, there is the set of standards that the project team brings to the table. These define the quality for which the team wants to be known and remain more or less the same for all projects. Second, there are the standards derived from the requirements of a specific project and client. These are rarely in conflict with the first set; they embellish it with specific details, such as the colors and fonts to be used, the overall look and feel, and the level of detail of content.

The standards are only useful if they are consistently applied throughout a project. This requires commitment, vigilance, and the ongoing evaluation of everything that is done. Everyone involved in a project should know the standards and should be committed to follow them. It is not practical nor effective to wait until a project is nearing completion before assessing whether the standards have been applied.

There is a second aspect of ongoing evaluation that is critical to the quality of a project, namely the application of an iterative process of design. All intermediate components of the project should be tested, evaluated, and, if necessary, revised before they are incorporated into the final program. This can apply to the wording of content, the effectiveness of interactions, the meaningfulness of graphics, and everything else. Again, waiting until the end of a project is too late for this type of quality control.

The third attribute that should pervade the entire project is good management of resources, money, and time. From beginning to end it is essential that all aspects of the project be under tight control. If this does not happen, it is surprisingly easy for things to go awry. Part of the process is through planning in the early stages of the project. Another part is the constant monitoring of progress against the plan. A third piece is frequent and good communication among all team members and between the team and client.

Very often the difference between a successful and unsuccessful project lies in the management of that project. Designers with good project management experience are always in demand, for they can make the difference between a project's success and failure.

It can be seen that Gané's Instructional Model can be applied in designing how to present the content of a MALL application. While Alessi and Trol-lip Model is appropriate for conducting processes of the entire MALL project.

2.3 Assessing the Efficiency of MALL Materials

According to Brahmawong and others (1977), the developmental testing of media and multimedia instructional packages can be applied to MALL materials as follows.

2.3.1 Efficiency Criteria for MALL Materials

The efficiency criteria refer to the efficiency levels of the MALL materials that help the students learn a language in accordance with the satisfactory level of the teacher. If the MALL materials are efficient, they are ready for validating or publishing in a large number. While the efficiency of MALL materials refers to the quality of the developed MALL materials that can enhance students' learning of a language.

The efficiency criteria are derived from assessing two types of students' behaviors: transactional behavior (process) and terminal behavior (output). The efficiency value of the process is written with E_1 and the efficiency value of the output is written with E_2. The E_1 value is the result of assessing students' transactional behaviors during the MALL activities. For this value, the scores that students gain from doing exercises, worksheets, or assignments of the MALL materials will be calculated for percentage. While the E_2 value is derived from assessing students' terminal behaviors and the scores that students receive from taking posttests of the MALL materials are calculated for percentage.

2.3.2 Calculation for Efficiency of MALL Materials

The efficiency values (E_1 and E_2) of the MALL materials can be calculated using the following formulas (Brahmawong et al., 1977, p. 51).

$$E_1 = \frac{\frac{\sum X}{N}}{A} \times 100$$

E_1 = Efficiency of the learning process

$\sum X$ = Total scores that students gain from doing exercises in a MALL material

N = Number of all the students

A = Total scores of all the exercises

$$E_2 = \frac{\frac{\sum F}{N}}{B} \times 100$$

E_2 = Efficiency of the learning outcomes

$\sum F$ = Total scores that students gain from doing posttests in a MALL material

N = Number of all the students

B = Total scores of all the posttests

To investigate the efficiency of a MALL material, the efficiency criterion must be prescribed. Generally, the efficiency criterion is set at 90/90 for cognitive subjects and not less than 80/80 for affective and skill subjects such as language and music because it takes a long time for the skills to happen with the students. After trying out a MALL material, the efficiency value obtained from the tryout will be compared with the prescribed criterion to check whether or not the value is acceptable. The efficiency value from the tryout may be both higher and lower than the prescribed criterion. However, to accept the efficiency value, the level of error is allowed at ±2.5 per cent as shown in Table 2.2

Table 2.2 The acceptance of the efficiency value

Efficiency Value	Prescribed Efficiency Criterion (%)	Acceptable Value (%)
E_1	75	72.50 - 77.50
E_2	75	72.50 - 77.50
E_1	80	77.50 - 82.50
E_2	80	77.50 - 82.50
E_1	90	87.50 - 92.50
E_2	90	87.50 - 92.50

From Table 2.2 , if the efficiency criterion, for instance, is determined at E_1/ E_2 = 80/80, the E_1 and E_2 values from the tryout of a MALL material must be at least 77.50 and not more than 82.50 such as 82.50/77.50 and 77.50/82.50. When the efficiency value from the tryout is acceptable, it corresponds to the prescribed efficiency criterion.

2.4 How to Teach Listening

2.4.1 What Is Listening?

Listening is an important skill and the most frequently used in everyday life. It is often stated that in daily communication of a person, a proportion of time is 9 percent for writing, 16 percent for reading, 30 percent for speaking and 45 percent for listening (Rivers and Temperley, 1987; Oxford, 1993; Celce-Murcia, 1995). Research results vary slightly, depending upon the subjects, but on the average, the time spent in communicating divides into approximately 50 percent listening, 25 percent speaking, 15 percent reading, and 10 percent writing (Morley, 1984).

For the definition of listening, Rost (2002) states that listening is the mental process of construction meaning from spoken input. According to Helgesen (2003), listening is an active, purposeful processing of making sense of what is heard. Rubin (1995) also points out that listening is an active process in which listeners select and interpret information (input) which comes from auditory and visual clues in order to define what is going on and what the speakers are trying to express. Richards and Schmidt (2002) mention a similar definition that listening comprehension is the process of understanding speech in a first or second language learning. It focuses on the role of individual linguistic units (e.g., phonemes, word, grammatical structures) as well as the role of the listener's expectations, the situation and context, background knowledge and topic.

Based on the mentioned definitions, it is clear that the listener is doing more than simply decoding what is heard. In active process of listening, listeners get information from visual and auditory clues and relate this information to what they already know.

Listeners use their background knowledge as well as the new information to decipher what is going on and to figure out what speakers intend.

2.4.2 Approaches to Listening

In fact a listener is an active partner in the listening process. For the active process of listening, attention to what is heard is required. Without attention listening is just a hearing; in other words, listener who does not pay attention to what the speaker says can become a hearer. For years, listening and reading were considered as passive skills while speaking and writing were active skills (Andersan and Lynch, 1988; Paulston and Bruder, 1976). Traditionally, it was assumed that speakers had an idea in their heads and decoded into words for listeners. Then listeners heard the words and understand the message (Brown, 1990). Morley (1984) points out a long-standing assumption that listening and reading skills are clearly regarded as passive skills in most scholars' and teachers' perceptions. Now it is recognized that listening is much complex. Listeners are actively paying attention and working on understanding and interpreting what they hear. In stead of looking at listening as a passive skill, it is useful to understand it, along with reading, as a receptive skill. This is in contrast with speaking and writing, which are productive skills. Sometime listeners can often understand language they could not possibly produce. This has major implications when looking at teaching listening and the nature of listening tasks. Another way to think about listening is the distinction between reciprocal listening and non-reciprocal listening. Reciprocal listening is between people. In conversations, people listen to each other, add ideas and give feedback (like the phrases *Uh huh* and *Really*?). Non-reciprocal listening is the kind of listening that often happens in the language classes. The teacher plays an audio

recording and students do a task, or the teacher dictates and students write. A lot of listening in language textbook is eavesdropping where students are over hearing a conversation between other people (Helgesen and Brown, 2007).

It can be clearly seen that listening is an active skill which considers the active attention to what is heard as a crucial part in listening process. Listening is a receptive skill that students use to receive information by reciprocal listening or non-reciprocal listening and make sense of information through background knowledge in terms of life experience, situational routines, and language use and usage.

2.4.3 Listening Processes

Anything that is heard can be input. When listeners do pay attention to the input, they begin to process the input. To look at the process, it is useful to consider bottom-up and top-down processing (Rumelhart, 1977; Flowerdew and Miller, 2005). Buttom-up processing is to make sense of the listening texts by focusing on the different parts: the vocabulary, the grammar or functional phrases, sounds, etc. Top-down processing, on the other hand, starts with background knowledge called schema. This consists of content schema (general knowledge based on life experience and previous learning) or textual schema (knowledge of language and content used in a particular situation). According to Grabe (1991), Mendelsohn (1998), Celce-Murcia and Olshtein (2000), and Jung (2003), listening comprehension involves top-down and bottom-up processes. In top-down processing, learners are required to activate schematic knowledge and contextual knowledge while they are listening to the texts. Schematic knowledge includes an activation of the content schema (the background information on the topic) and formal schema

(knowledge of how discourse is organized). Contextual knowledge refers to the knowledge about the participant, setting, and topic. For bottom-up processing, learners have to activate the knowledge of language system such as phonology, grammar, and vocabulary.

In order to comprehend a listening text, however, learners need to use both top-down and bottom-up processing simultaneously. This is called an interactive process (Peterson, 2001). While listening to a text, learners need to apply knowledge of sounds, grammar, conversational mechanism, cohesion, discourse structure, discourse type, and social relationships, all at the same time. Joiner (1997) and Pusack and Otto (1997) state that listening is a complex cognitive process. Listeners have to construct meaning by using both linguistic and non-linguistic knowledge. They need to employ knowledge of words, grammatical rules, and cognitive and social skills in order to understand the text. In addition, Rost (1991) mentions that listening is a coordination of the perception skills, analysis skills, and synthesis skills. Perception skills consist of discriminating sounds and recognizing words. Analysis skills involve identifying grammatical units and pragmatic units while synthesis skills are the ability to connect linguistic and other cues and use background knowledge. When listening, learners are required to integrate these components.

Therefore it can be seen that listening is an interactive process. Learners need to use both top-down and bottom-up processing in order to comprehend the text. They are required to pay an active role in applying their background knowledge together with linguistic knowledge for constructing the meaning of texts. This guides how to promote listening comprehension in the class where learners should be provided with the opportunities to confront with texts in their own ways and

construct their own meanings.

2.4.4 Listening Lesson

A listening lesson often has three parts: pre-listening, listening task, and post-listening. Firstly, pre-listening task aims to warm-up learners' non-native language skills before doing a listening task. It can help learners achieve the balance between top-down and bottom up processing. In many warm-up activities, learners do tasks to activate their schemata—essentially reminding themselves of content related to what they will hear as well as vocabulary and, at times, forms that will carry the content. Secondly, listening task implies that one is listening for a purpose. While listening, learners may try to listen for the main idea. This is called global listening or listening for gist. At other times, they listen to catch very specific information, find more details, and make inferences—making meanings that are implied. This is different from traditional way of teaching listening, that has listeners listen to a text and then answer some comprehension questions following a listening text. With this way, learners may not know what to listen for.

Nunan (2003) points out that when questions are answered after listening to the text and learners get the answers wrong, it is hard to know if it was because they did not understand, they understood but forgot, they were focusing on something else so they understood the wrong part of the text, or if there was some other problems. Having purposes for listening gets one away from these problems. Finally, post-listening task, at times, is to check the answers to comprehension questions, either by the teacher telling the learners what the correct answers are, by eliciting answers from the students themselves, or by having students compare their answers in pairs or small groups. It is useful to note that, although listening is a

separate skill, most skills are not or should not be taught separately. Speaking activities where learners talk to each other require listening as well and, very often, post-listening activities are speaking tasks. The speaking tasks not only help students learn by asking them to use and re-use the language they have heard, but they are motivating the students. That is, the students make the language real.

It is clear that when designing a listening lesson, the activities should be divided into three parts: pre-listening, listening, and post-listening tasks. Before listening, learners should be provided with warm-up activities such as discussion about the listening text, building vocabulary and listening skills, and learning about grammatical structure of the listening text. While listening, learners should have purposes—such as listening for the main idea, listening for specific information, listening for details, and making inferences. After listening, students check their comprehension about the listening text with the help of teachers and peers. Also, the students participate the speaking activities based on the listening text.

2.4.5 Principles for Teaching Listening

For effective teaching listening to happen, Helgesen (2003) proposes the principles for teaching listening as follows.

2.4.5.1 Expose Students to Different Ways of Processing

As aforementioned, the ways to process listening texts consist of top-down, bottom-up, and interactive processes. In the classroom, pre-listening activities are a good way to make sure that the top-down/bottom-up integration happens. Before listening, learners can, for example, brainstorm vocabulary related to a topic or invent a short dialogue relevant to functions such as giving directions or shopping. In the process, the learners base their information on their knowledge of

life (top-down information) as they generate vocabulary and sentences (bottom-up data). They are activating their previous knowledge by the use of top-down and bottom-up data in the interactive process (Peterson, 2001). Buck (1995) also points that pre-listening activities are needed to do two things: provide a context for interpretation and activate the background knowledge which will help interpretation. Teachers give learners enough to do that, and then let them listen.

2.4.5.2 Expose Students to Different Types of Listening

The most common type of listening exercise in many textbooks is listening for specific information (Helgesen and Brown, 1995). This usually involves catching concrete information including names, time, specific language forms, etc. At other times, students try to understand in a more general way (global or gist listening). In the classroom, this often involves tasks such as identifying main ideas, noting a sequence of events and the like. Both listening for specific information and listening for gist are two important types of listening and do not exist in isolation. Another critical type of listening is inference. It is listening between the lines to get the meaning that is implied but not stated directly. Inference is different from gist and specific information listening in that is often occurs at the same time as some other types of listening. The learners' main task might well be to catch specifics or to understand a text generally when they come across information that is not stated directly. Because inference requires somewhat abstract thinking, it is a higher level skill.

2.4.5.3 Teach a Variety of Tasks

To have experience with different types of listening texts, learners need to work with a variety of tasks. The task itself should be suitable for

learners' language level. Some tasks that require too much production may not be done in real times. A summary task based on a story, for example, may not be done by beginners. It may be better to have a task such as choosing the correct summary from two or three choices. Alternatively, the learner could number pictures or event in the order they occurred or identify pictures that match the text. Speaking tasks are also important and should be integrated in the listening task. Haft of the time people are speaking is spent listening. Learners need exposure to a wide range of tasks in order for them to deal with different types of texts and respond in different ways.

2.4.5.4 Consider Text, Difficulty, and Authenticity

The text determines how easy or difficult something is to understand. Spoken language is very different from written language. It is more redundant, full of false starts, rephrasing, and elaborations. Incomplete sentences, pauses, and overlaps are common. Learners need exposure to and practice with natural sounding language. Helgesen (2003) points out that when learners talk about text difficulty, the first thing that they may mention is speed. That can be a problem. A useful solution is to simply put pauses between phrases or sentences. As Rost (2002, p.145) states, "By pausing the spoken input and allowing some quick intervention and response, we in effect slow down the listening process to allow the listeners to monitor their listening more closely."

Speed is not the only variable. Brown (1995) talks about cognitive load and describes six factors that increase or decrease the ease of understanding. They are as follows

1) The number of individuals or objects in a text (e.g., More voices increase difficulty.)

2) How clearly the individuals or objects are distinct from one another (e.g., A recording with a male voice and a female voice is easier than one with two similar male voices or two similar female voices.)

3) Simple, specific spatial relationships are easier to understand than complex ones (e.g., In a recording giving directions, information like turn right at the bank is easier to understand than go a little way on that street.)

4) The order of events (e.g., It is easier when the information given follows the order it happened in, as opposed to a story that includes a flashback about events that happened earlier.)

5) The number of inferences needed (e.g., Fewer are easier than more.)

6) The information is consistent with what the listener already knows (e.g., Hearing someone talk about a film listeners have seen is easier to understand than hearing the same type of conversation about one listeners have not seen.)

In terms of authenticity, everything that students work with should be authentic. Day and Bamford (1998, p. 53) refer to this as the cult of authenticity. The listening text is created only for the realm of real life, not for classroom, but used in language teaching. The text may be adapted or simplified but its meaning is not changed.

2.4.5.5 Teach Listening Strategies

Rost (2002, p.155) identifies the strategies that are used by successful listeners as shown in Table 2.3

Table 2.3 Listening strategies of successful listeners

Strategies	Explanations
Predicting	Effective listeners think about what they will hear. This fits into the ideas about pre-listening mentioned earlier.
Inferring	It is useful for learners to listen between the lines.
Monitoring	Good listeners notice what they do and don't understand.
Clarifying	Efficient learners ask questions (What does ___ mean? You mean ___?) and give feedback (I don't understand yet.) to the speakers.
Responding	Learners react to what they hear.
Evaluating	Learners check on how well they have understood.

It is clear that the five principles—e.g., (1) exposing students to different ways of processing information, (2) exposing students to different types of listening, (3) teaching a variety of tasks, (4) considering text, difficulty, and authenticity, and (5) teaching listening strategies—guide the effective way to teach listening. Teachers can apply these principles in designing a lesson plan or a MALL material for listening in order to help the learners become more skillful listeners.

2.4.6 Assessing Listening

A basic concept of assessment is that it is only fair and useful to test what has been taught. In testing, Bailey (2005) identifies four key concepts including validity, reliability, practicality, and washback.

Validity means that the test is used to measure what one is trying to measure. If, for example, teachers are doing a listening test that requires writing long

answers, they may be testing writing rather than listening. If teachers test in a computer lab and some learners don't know how to use computers, it could be testing their technical ability rather than their listening. Tests should test what has actually been taught.

Reliability means that test results are consistent. A person being evaluated at different times or by different people would get a similar score. If, for example, teachers are doing an interview test and, after a long day, tend to give lower or higher scores, that test is not reliable.

Practicality refers to the demands of giving the test are reasonable. If teachers are interested in CALL (Computer-Assisted Language Learning), but end up teaching in an undeveloped country without technology, computer-based tests would not be practical. If teachers are in a secondary school or university and have hundreds of students, an interview test would probably not be practical.

Washback is the effect that the test has on what is taught and how it is taught. This can happen either by course content being included or excluded. If teachers emphasize listening in a course but only give a paper and pencil test that does not involve listening, they devalue listening as an important part of the course. As Rost (2002, p. 173) points out, "If teaching is not consistent with testing, or if instruction provided does not help them with test performance, students are dissatisfied. As a result, teachers begin teaching for the test even if they believe the test itself is invalid.

Rost (2002) also categorizes the major types of listening tests as shown in Table 2.4

Table 2.4 The major types of listening test

Test Types	Descriptions
1. Discrete-item Tests	- Multiple-choice questions following a listening text (responses scored right or wrong) - Open questions following presentation of a listening text (questions scored on a scale of correctness and completeness) - Standardized test scores (e.g., TOEFL or TOEIC)
2. Integrative Tests	- Open summarizing of a listening text (scored on scales of accuracy and inclusion of facts and ideas) - Cloze summarizing of a text (scored on correct completions of blanks) - Dictation, complete or partial (score based on supplying the correct missing words)
3. Communicative Tests	- Written communicative tasks involving listening (scored on the basis of successful completion of a task, such as writing a complaint letter after hearing a description of a problem)
4. Interview Tests	- Face-to-face performances with the teacher or another student (scored based on a checklist of items, such as appropriate response to questions, appropriate use of clarification questions)

Table 2.4 (Continued)

Test Types	Descriptions
5. Self-assessment	- Learner rates self on given criteria, via questionnaire - Learner provides holistic assessment of own abilities via oral or written journal entries.
6. Portfolio Assessment	- Leaner is observed and evaluated periodically throughout the course on behavior in tasks and other class activities: observation may be audio or videotaped - Portfolio may include any or all of the above types of objective and subjective measures

It can be seen that in assessing listening, teachers should consider the key concepts of testing: validity, reliability, practicality, and washback. The teachers should also select appropriate types of tests, which are suitable for the students and able to prove that they learned what the teachers taught. That is the success of assessment (Helgesen and Brown, 2001).

2.5 Previous MALL Studies

Since this study seeks to investigate an effective way to produce a MALL material by developing a model, the review of rerated studies, which have been published so far, is focused on how the mobile phones are utilized for language learning.

The use of mobile phones in distance language learning is not unique to MALL. Twarog and Pereszlenyi-Pinter (1988) utilized telephones to provide distant language learners with feedback and assistance. In 1996, instructors at Brigham Young University-Hawaii taught a distance-learning English course from Hawaii to Tonga via telephone and computer (Green, Collier, and Evans, 2001). And Dickey (2001) utilized teleconferencing to teach an English conversation course in South Korea.

One of the first projects using mobile phones in language learning was developed by the Stanford Learning Lab, which explored their use in language learning (Brown, 2001). Specifically, they developed Spanish study programs utilizing both voice and email with mobile phones. These programs included vocabulary practice, quizzes, word and phrase translations, and access to live talking tutors. Their results indicated that mobile phones were effective for quiz delivery if delivered in small chunks; they also indicated that automated voice vocabulary lessons and quizzes had great potential. Their tiny screen sizes were deemed "unsuitable for learning new content but effective for review and practice" (Thornton and Houser, 2002, p. 236). Live tutoring was also effective, but poor audio quality was judged to potentially affect comprehension adversely.

Thornton and Houser (2002; 2003; 2005) also developed several innovative projects using mobile phones to teach English at a Japanese university. One focused on providing vocabulary instruction by SMS. Three times a day, they emailed short mini-lessons to students, sent in discrete chunks so as to be easily readable on the tiny screens. Lessons defined five words per week, recycled previous vocabulary, and used the words in various contexts, including episodic stories. Students were tested

biweekly and compared to groups that received identical lessons via the Web and on paper. The authors then explored usability and learning issues. The results indicated that the SMS students learned over twice the number of vocabulary words as the Web students, and that SMS students improved their scores by nearly twice as much as students who had received their lessons on paper. Students' attitudes were also measured. The vast majority preferred the SMS instruction, wished to continue such lessons, and believed it to be a valuable teaching method. The authors theorized that their lessons had been effective due to their having been delivered as push media, which promote frequent rehearsal and spaced study, and utilized recycled vocabulary.

Levy and Kennedy (2005) created a similar program for Italian learners in Australia, sending vocabulary words and idioms, definitions, and example sentences via SMS in a spaced and scheduled pattern of delivery, and requesting feedback in the form of quizzes and follow up questions.

Kiernan and Aizawa (2004) set out to study whether or not mobile phones were useful language learning tools and to explore their use in task-based learning. They argued that second language acquisition is best promoted through the utilization of tasks, which require learners to close some sort of gap, thereby focusing the learner on meaning. In the traditional classroom, however, such activities are easily defeated by the close proximity of students. The use of mobile technologies would be one way to separate learners. In their study, upper and lower level Japanese university students were placed into three groups: PC email users, mobile phone email users, and mobile phone speaking users (due to cost, this latter group became face-to-face speaking users). Then they were given a pre-test, three narrative tasks, three invitation tasks, and a repeated post-test. While all the face-to-face speaking users completed these

tasks in the time provided, only two pairs of PC email users and one pair of mobile phone email users completed the tasks. The face-to-face speaking users had significantly faster performances, and the mobile phone email users had the slowest; however, the latter were not significantly slower than the PC email users. These differences were attributed to relative speed of typing versus speaking, and the relative speed of typing on mobile thumb pads versus keyboards. An interesting side-note was that the fastest mobile phone email user had told the entire story in only a single text-message. In general, fewer words were used by mobile phone email users, yet they were able to communicate effectively. While the upper-level students' performance improved significantly on the post-test, this was likely due to a change in the post-test format for this group (since the pre-test required written translations, but the post–test consisted of multiple choice questions).

A mobile English learning system was conducted by Naraki (2008) at the College of Internet Distance Education (CIDE), Assumption University of Thailand. The researcher developed twelve lessons of speaking and listening for 76 CIDE students. The 12 MALL lessons were published as SWF file format which could be played on the mobile phones and PDAs with Flash Lite Player 2.0 or later installed. The students downloaded three lessons a week through the university website. Each lesson provided English conversations, which were read by two native speakers, in various situations with primary focus on speaking practice. While practicing, students could read the texts on the screen of mobile devices and listen to the native voices. The results were reported that the Flash-based English learning system was effective in assisting students to produce positive outcomes, including positive performances and attitudes. However, this program is not a classroom practice. Since it promotes

self-independent practice, many strategies for teaching speaking and listening might not be enough for language learning to happen when compared to classroom based MALL activities. For example, students might have no chance to practice speaking with peers as an important feature of teaching speaking through conversations. This is an interaction which is a crucial factor for language acquisition (Pica, 1994; Long, 1996). In the classroom based MALL activity, students can practice speaking and listening by making conversations with friends through the concepts or principles as practiced in the MALL application. Outside the classroom, students may be able to keep practicing anytime and anyplace as they need in order to enhance retention (Gané, 1985). In this study, in addition, the mobile learning system consists of 12 SWF lesson files. It may be more interesting if they were combined into one package, comprising 12 lessons, like a general educational computer program. This can provide students with the convenience in the use of the MALL application, since they can immediately go to the section they want to review. In doing this, however, the size of SWF lesson file should be taken into consideration to assure that most of the mobile devices have enough memory space to save and run it.

Palalas (2011) studied students' learning and preferences for activities in mobile-assisted language learning applications designed for promoting out-of-class listening practices at George Brown College in Toronto. The students were provided with an iPod Touch and access to audio and video podcasts, internally produced and from external sources for on-the-go retrieval and listening practice. They were also encouraged to use the mobile devices to communicate by blogging or e-mailing and to record their reflections on the experience. The research revealed that students expressed a high degree of satisfaction with the MALL component of the course,

citing flexibility, portability, access to resources and convenience as the key benefits. Students identified cost and limited connectivity as the primary shortcomings of MALL. It was also found that mobile devices were used primarily as listening devices with minimal interaction and connectivity.

A recent study that examined the effects of written texts on the listening comprehension of students learning through a personal digital assistant (PDA) was conducted by Chen and others (2012). 87 students majoring in Applied Foreign Languages at a technology university in northern Taiwan participated in the study. The results showed that all participants did better on the recall task. The provision of written texts for each listening task in the mobile applications enhance students' comprehension of listening texts.

It can be seen that many studies tend to use mobile phones to deliver language content in various aspects according to the advancement of mobile phone and authoring program technology, since the mobile phone is portable and it is utilized to learn a second language anytime, anyplace. The effective way or model used to design a MALL material continues to be searched for. An interesting issue is that most of the theories that have been found in the computer-assisted language learning (CALL) may also be found in the mobile assisted language learning environment.

In summary, the conceptual framework used for designing a model for producing a mobile phone-assisted English listening application as reviewed in this chapter consisted of (1) mobile assisted language learning, (2) models applied for producing MALL materials, (3) assessing the efficiency of MALL materials, and

(4) how to teach listening. In addition, the whole picture of previous MALL studies published so far were also reviewed.

CHAPTER 3

RESEARCH METHODOLOGY

To achieve the research objectives as specified in Chapter 1, the researcher conducted this research study in accordance with six major phases: (1) developing a conceptual framework, (2) examining the conceptual framework, (3) designing a model, (4) verifying the effectiveness of the model, (5) collecting data, and (6) analyzing data.

Phase 1 Developing a Conceptual Framework

A conceptual framework refers to theories and principles used as a basis for designing a model for producing a mobile phone-assisted English listening application. In so doing, the researcher had reviewed related documents to synthesize theories and principles necessary for the model design as stated in the literature review of Chapter 2.

The conceptual framework consists of theories and principles regarding the mobile assisted language learning (MALL), models applied for producing MALL materials, assessing the efficiency of MALL materials, and how to teach listening as categorized below.

1. Mobile Assisted Language Learning

   1.1 What Is Mobile Assisted Language Learning?

   1.2 Mobile Phone and Language Learning

1.3 Categories of MALL Applications

2. Models Applied for Producing MALL Materials

2.1 Gané's Instructional Model

2.2 Alessi and Trollip Model for Design and Development

3. Assessing the Efficiency of MALL Materials

3.1 Efficiency Criteria for MALL Materials

3.2 Calculation for Efficiency of MALL Materials

4. How to Teach Listening

4.1 What is Listening?

4.2 Approaches to Listening

4.3 Listening Process

4.4 Listening Lesson

4.5 Principles for Teaching Listening

4.6 Assessing Listening

In addition to the mentioned category, the researcher also reviewed previous studies related to mobile assisted language learning to see the whole picture of utilizing MALL materials in teaching a second language and to use as a basis for developing a MALL material in this study.

Moreover, the researcher conducted a need survey with 19 students of third-year English program in the first semester of the Academic Year 2010. In so doing, the researcher developed a questionnaire on student needs in the development of English language skill through the use of MALL materials. The questionnaire reviewed by the advisor was administered to the student in a regular class time on the first week of semester 1/2010; it asks about student's background information,

needs in the development of their English language skills through mobile application, and suggestions on the development of English language skills through the MALL materials. The data collected from the questionnaire were analyzed using descriptive statistics and a content analysis.

The following tables show the results of need analysis.

Table 3.1 Students' background information

Students' background information	n	%
1. Age		
20-24	8	42.11
25-29	7	36.48
30-34	2	10.53
35-39	1	5.26
40 up	1	5.26
2. Education		
M. 6 (High School)	17	89.47
Equivalent	2	10.53
3. Self-Evaluation of English Language Skills		
Poor	3	15.79
Fair	14	73.68
Good	2	10.53

Table 3.1 (Continued)

Students' background information	n	%
4. Source of English Language Skill Development		
Textbooks	19	100.00
Textbooks + Audio	18	94.74
Video for English language learning	17	89.47
Web-based English language learning	15	78.95
CALL materials	10	52.63
5. Frequency of English Language Skill Development		
Everyday	8	42.11
2-3 times/week	11	57.89
6. Owning of Touch-screen Mobile Phones		
No	2	10.53
Yes	17	89.47
7. Mobile Phone's Operating System		
Android	10	52.63
Symbian	7	36.84

From Table 3.1, it was found that most students were 20 to 29 years old and graduated from a high school (with Matthayomsuksa 6). The students mostly

viewed that their English language skills were on the fair level indicating that they could listen, speak, read, and write a little. More than half of the students practiced English language skills through textbooks, textbooks with audio, English learning video, English learning websites, and computer-assisted language learning (CALL) materials around 2 to 3 times a week. Seventeen of the students had a touch-screen mobile phones with Android and Symbian operating systems, while the other two used a cellphone without a touch-screen.

Table 3.2 Interest in English language skill development through MALL materials

Level of interest	n	%
High	15	78.95
Moderate	2	10.53
Low	2	10.53

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From Table 3.2, it was revealed that most of the students were very interested in English language skill development through MALL materials, while there were two students with moderate interest and two with low interest.

Table 3.3 English language skills needed to be developed

Skills needed to be developed	$\overline{X}$	SD
Listening	3.50	0.99
Speaking	2.50	0.92
Reading	2.28	0.96
Writing	1.72	0.89

From Table 3.3, it was shown that the English language skill which the students needed to be developed the most was a listening. The other skills—speaking, reading, and writing—were needed in order.

In addition, the students suggested that English movies, everyday conversations, vocabulary, and pronunciation of native speakers should be put in the MALL materials.

After reviewing theories and principles and analyzing student needs, the researcher utilized the obtained data to draft a primary conceptual framework in relation to the design and development of the model for producing a mobile phone-assisted English listening application.

Phase 2 Examining the Conceptual Framework

This phase aims to examine the appropriateness of the conceptual framework of the model for producing a mobile phone-assisted English listening application according to the experts' reviews. To achieve this, the researcher conducted the following.

2.1 Prepare documents

The researcher prepared the documents related to the conceptual framework derived from the literature review in Chapter 2 and constructed an evaluation form for the conceptual framework. The evaluation form aims to assess the appropriateness of the theories and principles in the conceptual framework.

2.2 Have experts examine the conceptual framework

The researcher submitted the documents of conceptual framework and evaluation form to the experts consisting of three educators from three areas of studies: educational technology, English language teaching and learning, and technology-enhanced language learning (TELL).

2.3 Analyze data from the evaluation form

After one month, the researcher gained data from the three experts, then conducted a data analysis with a particular focus on the items with "needs work" and comments given by the experts. In analyzing, the items in the evaluation form were divided into two groups: "acceptable" and "needs work". The items which were considered "acceptable" by all the three experts would be put in the acceptable group, while the items which at least one expert checked "needs work" and gave comments would be put in the "needs work" group.

In addition, the experts' comments were analyzed using a content analysis in order to find out the issues for revisions of the conceptual framework.

2.4 Make revisions

The results from data analysis in the previous step (2.3) showed that all the four items were acceptable; that was, the theories and principles were appropriate for being used as a conceptual framework of the model for producing a mobile

phone-assisted English listening application. However, with regard to assessing the efficiency of MALL materials, an expert suggested that the contents about trying out and accepting the efficiency of MALL materials should be added to the related topics. While the others gave general comments on correction of language use and spelling, as well as citation and references.

The results from data analysis in this step had been used to revise the conceptual framework of the model. The researcher made revisions by adding contents in regard to accepting the efficiency of MALL materials to the topic of Efficiency Criteria for MALL Materials. Furthermore, the researcher explained more about the efficiency criteria for MALL Materials and adjusted language, citation, and references.

In addition, the researcher had drawn a diagram of the conceptual framework in relation to other parts of this study as shown in Figure 3.1 on the next page.

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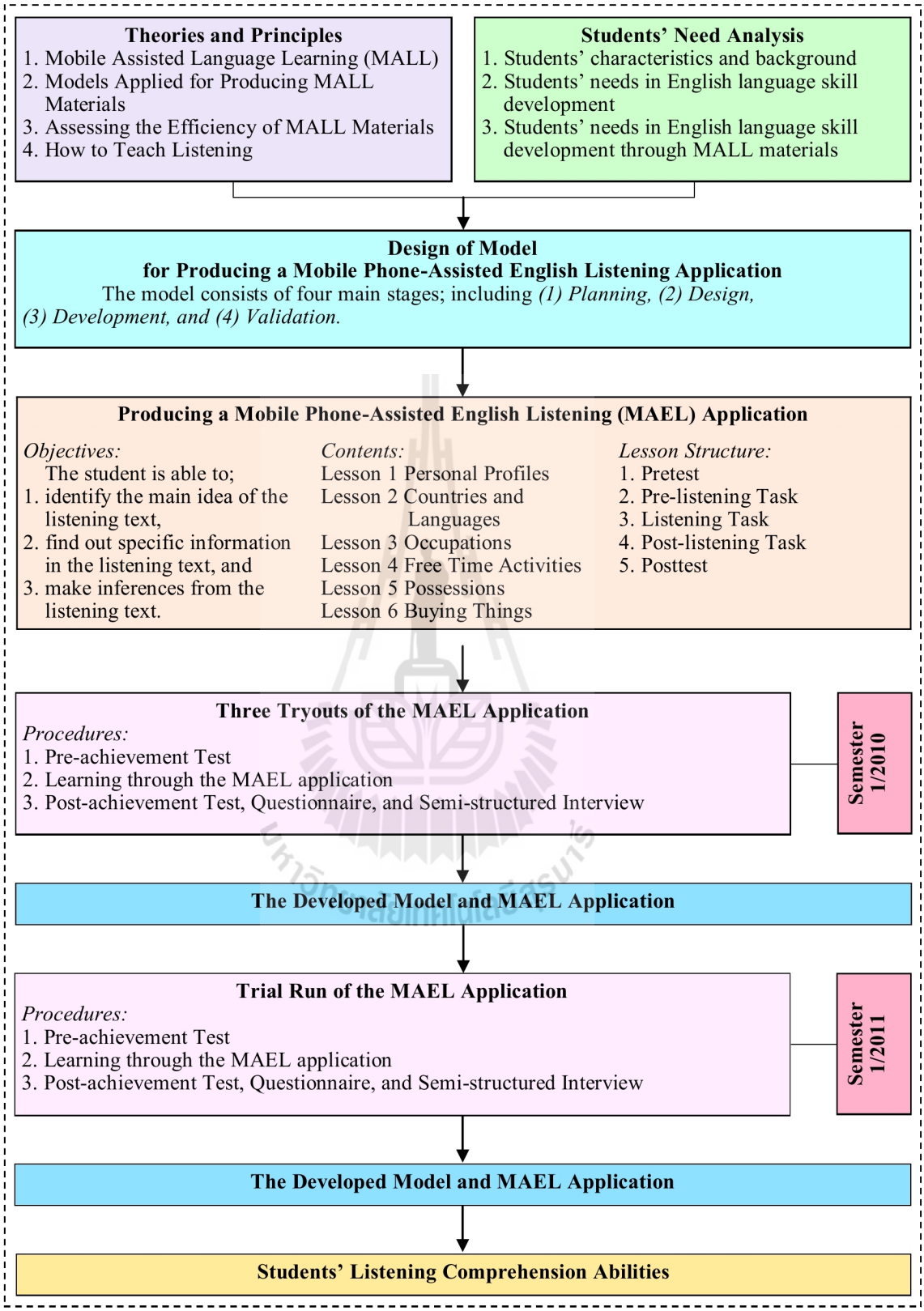

Figure 3.1 The relationship between the developed conceptual framework and other parts in this study

Phase 3 Designing a Model

Based on the developed conceptual framework and student needs, the research designed and developed a model for producing a mobile phone-assisted English listening application as follows.

3.1 Draft a model

The researcher drafted a model for producing a mobile phone-assisted English listening application with a particular focus on four stages: (1) planning, (2) design, (3) development, and (4) validation. The model comprises 24 logical steps and is an ongoing evaluation—that is, feedback resulting from the validation stage would be utilized to make revisions of the model.

3.2 Have experts review

The researcher submitted the drafted model and evaluation form approved by the advisor to three experts from three areas of studies, including educational technology, English language teaching and learning, and technology-enhanced language learning.

The results of model evaluation were shown in Table 3.4 on the next page.

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Table 3.4 Model evaluation of the experts

Items	Strongly agree		Agree		Uncertain		Disagree		Strongly disagree		$\bar{X}$	S.D.
	N	%	N	%	N	%	N	%	N	%		
1. The model for producing a mobile phone-assisted English listening application is in accordance with the Instructional System Design (ISD) approach.	3	60	2	40							4.60	0.55
2. The model for producing a mobile phone-assisted English listening application consists of appropriate stages.	5	100									5.00	0.00
3. The model for producing a mobile phone-assisted English listening application comprises appropriate logical steps.	4	80	1	20							4.80	0.45
4. The steps in the model for producing a mobile phone-assisted English listening application are practical.	2	40	3	60							4.40	0.55

Table 3.4 (Continued)

Items	Strongly agree		Agree		Uncertain		Disagree		Strongly disagree		$\bar{X}$	S.D.
	N	%	N	%	N	%	N	%	N	%		
5. The model for producing a mobile phone-assisted English listening application would lead to the efficient application.			5	100							4.00	0.00

From Table 3.4, it was revealed that all the experts agreed and strongly agreed with the following statements:

1. The model for producing a mobile phone-assisted English listening application is in accordance with the Instructional System Design (ISD) approach.

2. The model for producing a mobile phone-assisted English listening application consists of appropriate stages.

3. The model for producing a mobile phone-assisted English listening application comprises appropriate logical steps.

4. The steps in the model for producing a mobile phone-assisted English listening application are practical.

5. The model for producing a mobile phone-assisted English listening application would lead to the efficient application.

In addition, some experts suggested about the appropriate terms used in the model and the researcher had revised the model according to those suggestions as illustrated in Figure 3.2 on the next page.

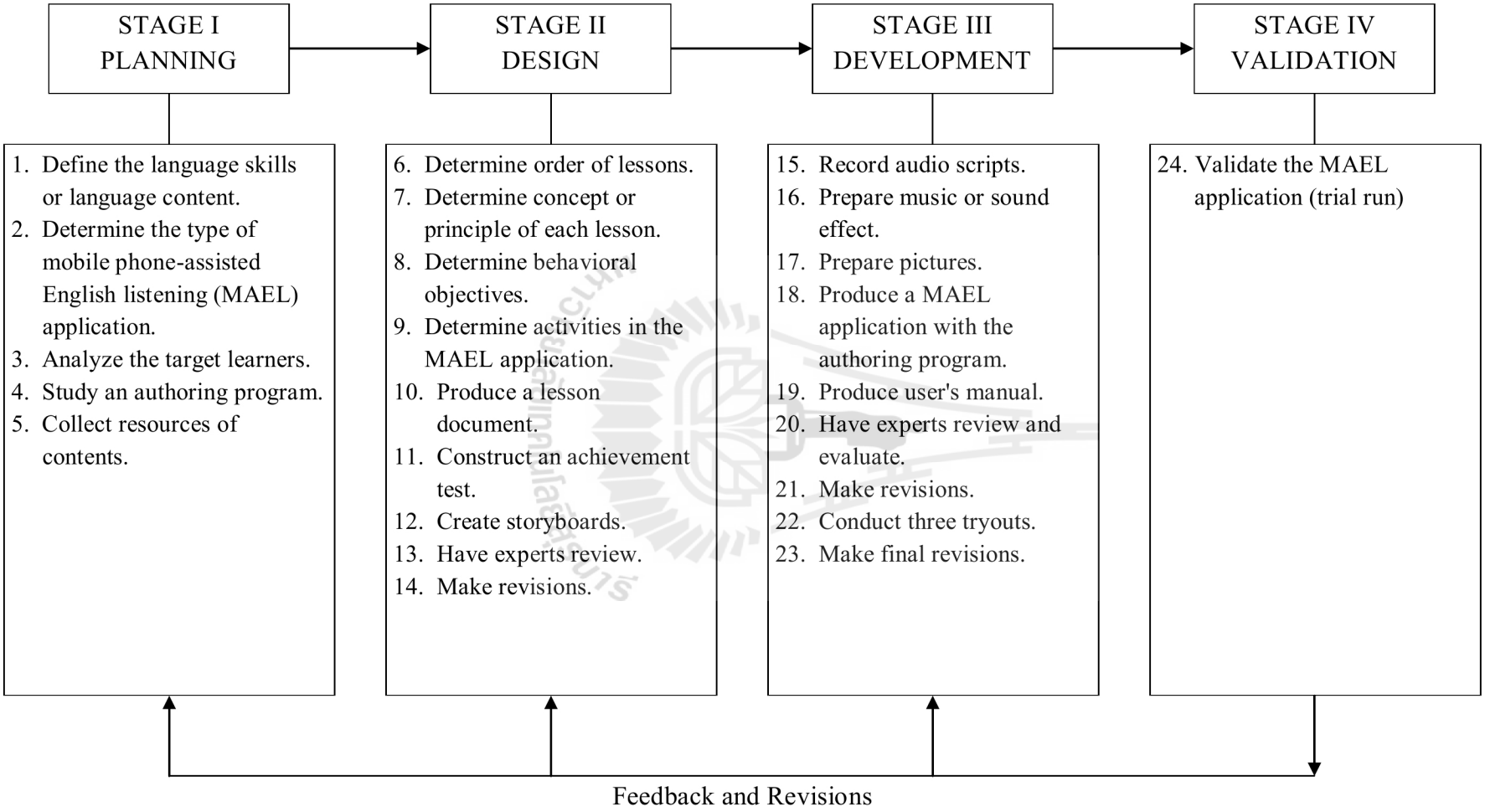


Figure 3.2 The developed model for producing a mobile phone-assisted English listening application

Phase 4 Verifying the Effectiveness of the Model

In this study, the effectiveness of the model for producing a mobile phone-assisted English listening application can be verified from:

1) the efficiency of the mobile phone-assisted English listening (MAEL) application,
2) students' learning achievement after learning through the MAEL application, and
3) students' opinions towards learning through the MAEL application.

This phase is to verify the effectiveness of the model during the tryouts of MAEL application. The MAEL application that is developed and efficient according to the prescribed efficiency criterion can reflect the effectiveness of the model. While the data from the achievement test, questionnaire, and semi-structured interview will only be analyzed in order to find out the quality of such instruments.

In this phase, the researcher had carried out the following:

4.1 Produce a mobile phone-assisted English listening application in accordance with the developed model

The researcher followed the steps stated in the developed model for producing a mobile phone-assisted English listening application as follows.

Stage I Planning

1) Define the language skills or language content

Listening was selected as the main skill of the mobile phone-assisted English listening application. The application was entitled "mListening", which aimed to provide students with English listening practices through mobile phones in order to improve their listening comprehension abilities.

2) Determine the type of mobile phone-assisted English listening application

The application was a type of practice. Both short and long conversations were used as listening texts and the students would respond to the comprehension questions after listening to the texts made by native speakers.

3) Analyze the target learners

The researcher conducted a learner analysis in the issues, including age, educational level, language proficiency level, prerequisite knowledge, prerequisite language skills, the mobile phones used and facility with a mobile phone. These data were obtained from the questionnaire on student needs .

4) Study an authoring program

The researcher studied the authoring program, Adobe Flash Professional by Adobe Inc., in terms of creating an application for mobile devices from www.adobe.com. The Adobe Flash Professional allows language teachers to produce a multimedia language learning material that can be played on computers, Internet, and mobile devices in the form of applications or apps named “Adobe Air”. Adobe Air applications can run across platforms including Microsoft Windows, Mac, and Linux for computers and iOS and Android for mobile devices.

5) Collect resources of content

The researcher collected texts and vocabulary from internet-based resources, including www.fifty-fifty-series.com, www.bangkokpost.com, www.cnn.com, www.englishlistening.com, and www.englishclub.com.

Stage II Design

6) Determine order of lessons

The data collected from the previous step had been adapted to make a listening lesson. The contents consisted of listening texts which were English conversations in various daily situations and were divided into six lessons as follows.

Lesson 1 Personal Profiles

Lesson 2 Countries and Languages

Lesson 3 Occupations

Lesson 4 Free Time Activities

Lesson 5 Possessions

Lesson 6 Buying Things

7) Determine concept and principle

The researcher determined concepts of listening texts in each lesson and listening principles as well. The concepts indicate what the listening texts are about and the principles tell how to listen in order to comprehend the texts.

8) Determine behavioral objectives

The researcher identified the learners' behaviors that would happen after the MAEL activities. Behavioral objectives of each lesson are based the three major purposes of listening—i.e., students are able to identify the main idea (global listening or listening for gist), find out specific information, and make inferences.

9) Determine activities in MAEL application

The practice had been selected as the main activity type of the MAEL application. The content of each lesson comprises the title page, pretest,

pre-listening task, while-listening task, post-listening task, and posttest. The researcher also generated ideas about MAEL activities such as multiple choices, matching, short answers, true/false, and so on without regard to whether they were useful. The ideas included the use of a particular medium (text, sound, picture, or moving picture), and a type of learner interaction (e.g. tapping, typing, dragging, speaking or recording, etc.). To do this, the researcher studied other educational software packages of language learning and used them as samples to help in a brainstorming process of application design. However, the researcher selected only media and interaction types appropriate for playing on a touch-screen phone. The media that had been put in the application consisted of text, sound, and still picture; and only tapping on the touch-screen had been selected as a learner-mobile phone interaction because it was convenient for learners learning through mobile phone devices.

10) Produce a lesson document

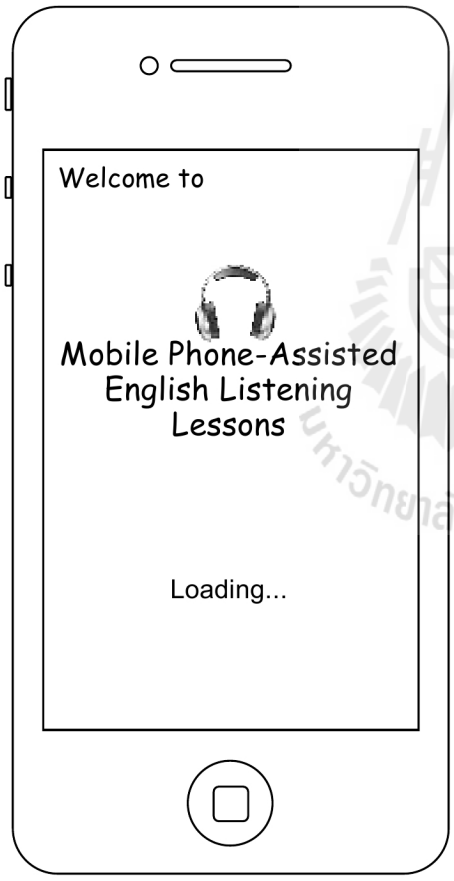
The researcher produced documents for each lesson. The document is a text- based content of MAEL application. Each lesson consists of lesson title, objectives, concepts and principles, pretest, pre-listening task, while-listening task, post-listening task and posttest.

11) Construct an achievement test

The researcher constructed an achievement test of listening comprehension to measure students' listening comprehension abilities after the MAEL activities. The test will be administered to the students before and after the MAEL activities. Details about the test construction will be stated in the next section.

12) Create storyboards

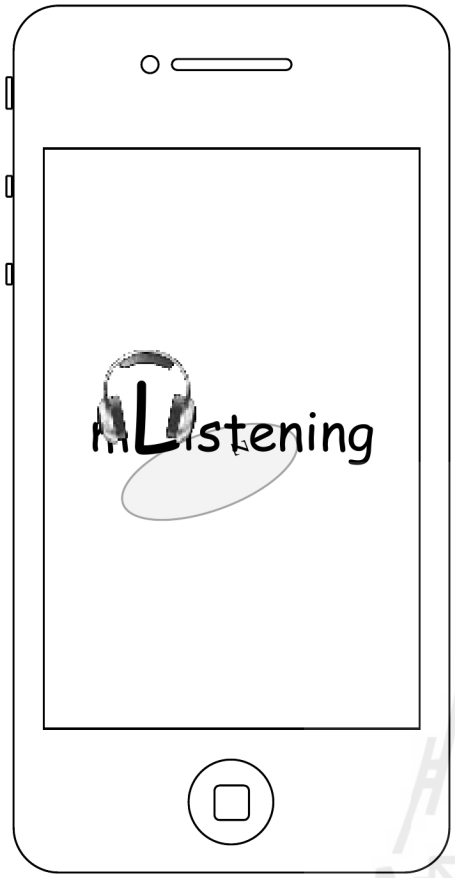
The contents in lesson documents were divided to accommodate the mobile phone capacity. In a draft form of storyboards, the researcher drew graphics including simple line drawings, position of texts, images, and buttons (see the samples below). For other outputs, the sound was the most frequent and important. The researcher wrote comments regarding voices or sound effects needed and also wrote the audio scripts.



Note:

Splash Screen

Size	= 320 x 480 px
Resolution	= 72 px
File	= Default.png
Text	= on the screen
Sound	= no
Image	= on the screen
Techniques	= no



Note:

Title Animation

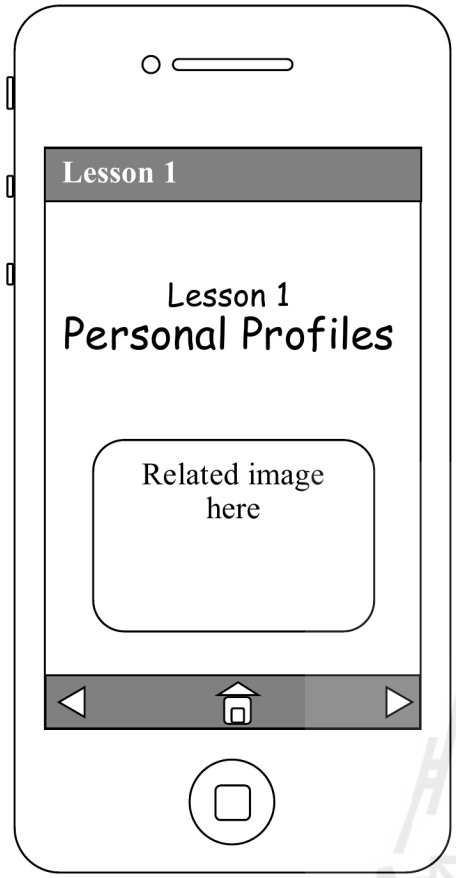
Text = mListening
Sound = no
Image = Headphone, see samples of clip arts at www.microsoft.com
Techniques = Classic tween for highlighting colors with mask



Note:

Main Menu

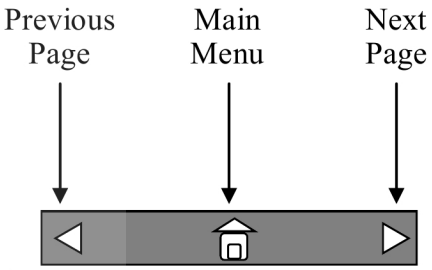
Size = 320 x 480 px
File = mListening.fla
Text = on the screen
Sound = no
Image = nature
Techniques = Create menu buttons and write an Action Script 3.0 to link to the contents of each lesson.
Navigation = on the screen
? = Help button links to help page.
= When clicking this home button, it returns to main menu.
Script = Action Script 3.0 (AS3)

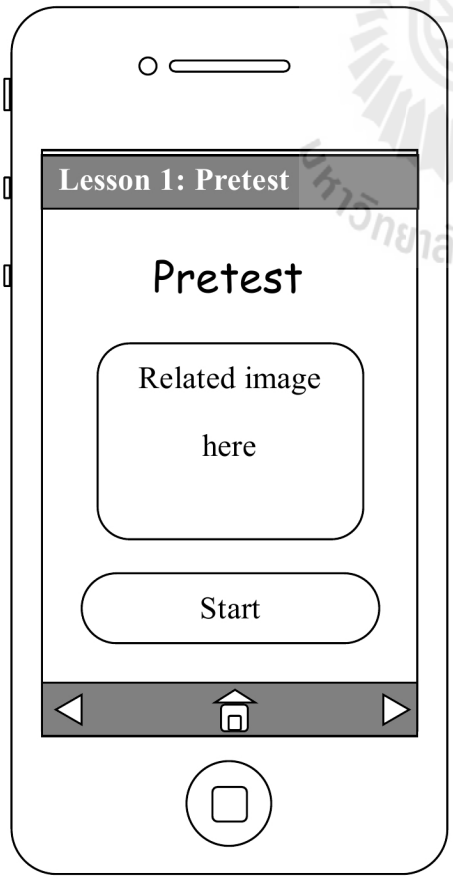


Note:

Lesson Title

Title Bar = Lesson 1
Text = on the screen
Sound = no
Image = about persons
Techniques = This page appears for 5 seconds and automatically goes to next page. Write AS3 to link the navigation below.

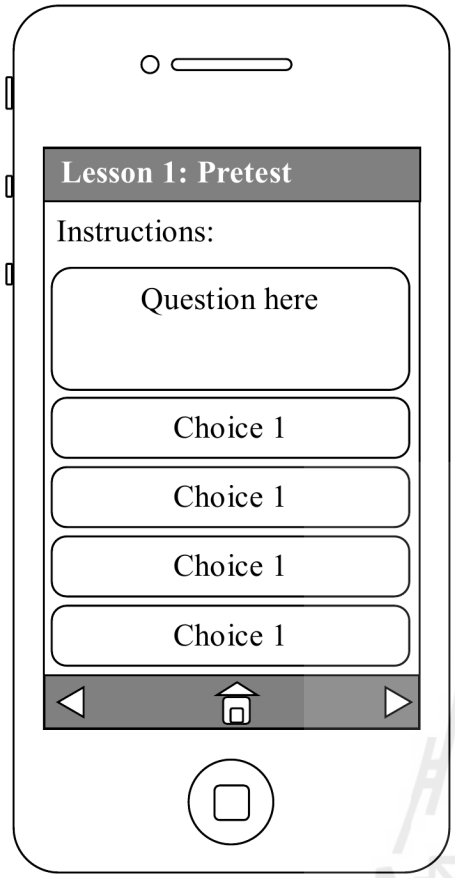




Note:

Pretest Title

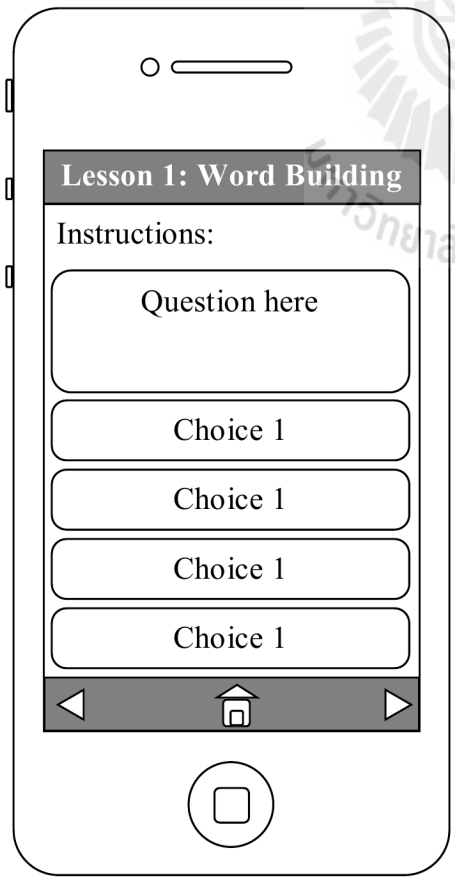
Title Bar = Lesson 1: Pretest
Text = on the screen
Sound = no
Image = about students
Techniques = When tapping Start button, enter the pretest to answer question 1-10.



Note:

Test Template

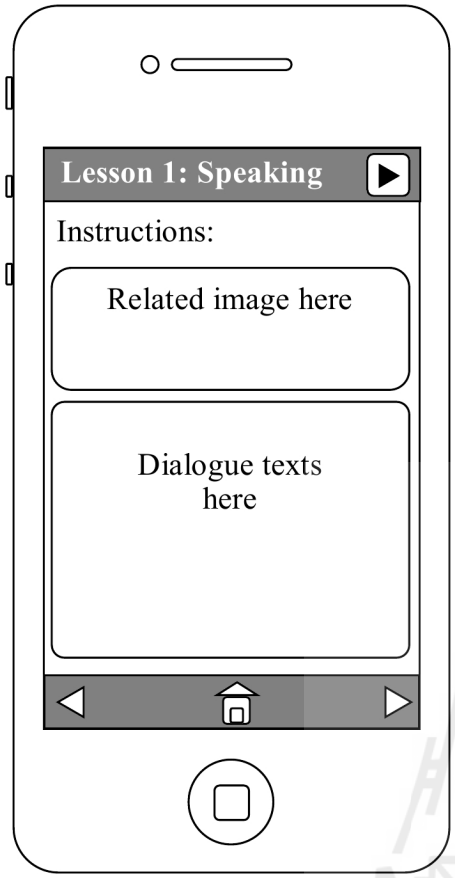
Title Bar = Lesson 1
Text = on the screen
Sound = no
Image = no
Techniques = Listen to the recordings twice, then answer. After tapping to select the choice, automatically go to the next question. Report score at the end.



Note:

Word Building Template

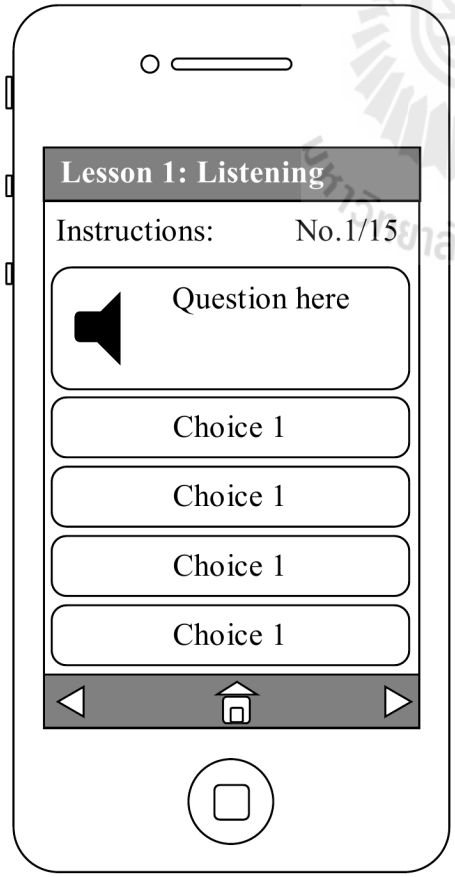
Title Bar = Lesson 1: Word Building
Text = questions about vocabulary
Sound = no
Image = no
Techniques = Tap to select the correct choice. Allow "try again" until selecting the correct choice. After selecting the correct choice, show correct feedback and automatically go to the next question.
Feedback = Correct: Right animation with the right sound effect
Wrong: Wrong animation with the wrong sound effect



Note:

Speaking Template

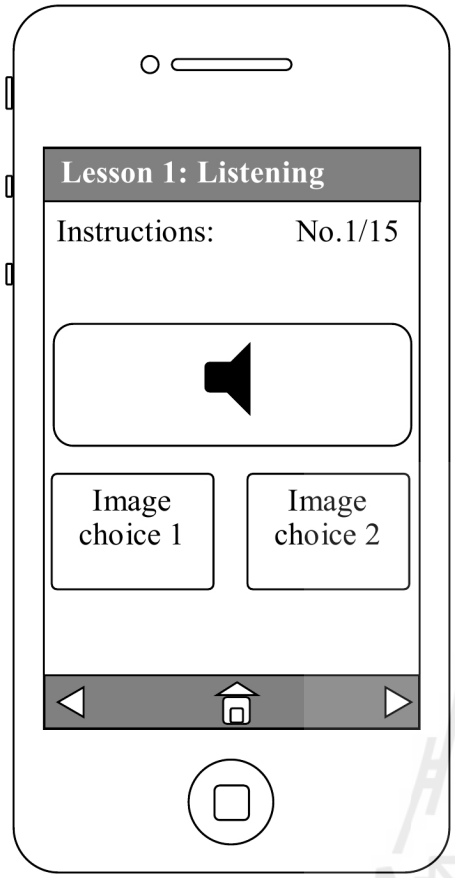
Title Bar = Lesson 1: Speaking
Text = dialogue texts
Sound = voices of dialogue texts
Image = people
Techniques = Tap Play button to play the recordings or Pause button to pause. Highlight the line where the recording is being played (like karaoke).
Button = Play and Pause buttons for controlling the conversation.



Note:

Listening Template 1

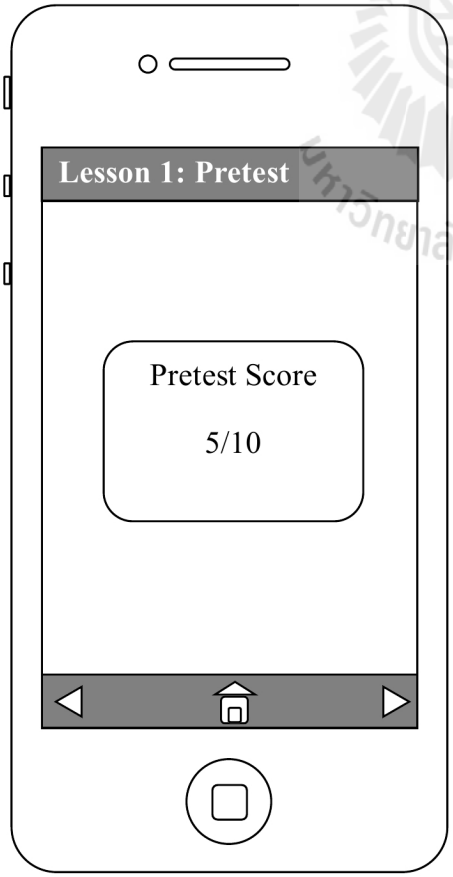
Title Bar = Lesson 1: Listening
Text = comprehension questions
Sound = voices
Image = no
Techniques = Show current exercise number. Tap to select the choice only once. Not allow "try again". After selecting the choice, show feedback and automatically go to the next question. At the end, report score.
Button = Speaker button for tapping to listen to the listening text again.



Note:

Listening Template 2

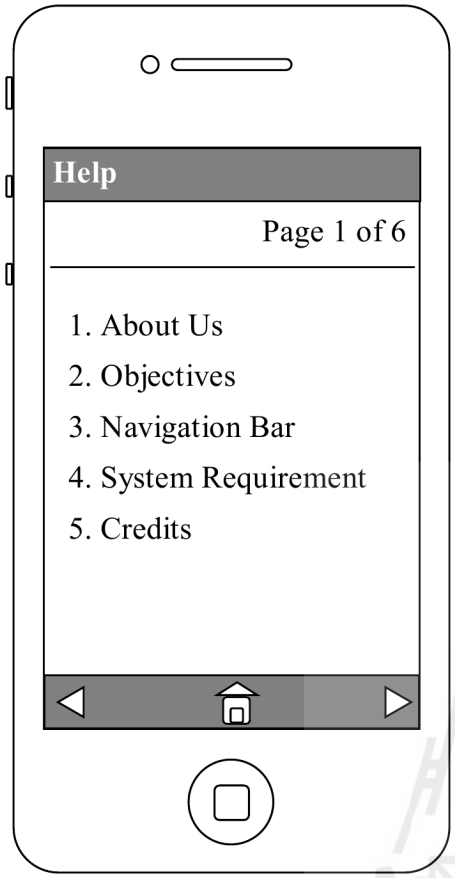
Title Bar	= Lesson 1: Listening
Text	= dialogue texts
Sound	= voices of dialogue texts
Image	= image choice according to the listening text.
Techniques	= Show current exercise number. Tap to select the image choice only once. Not allow "try again". After selecting the image choice, show feedback and automatically go to the next question. At the end, report score.
Button	= Speaker button for tapping to listen to the listening text again.



Note:

Score Report

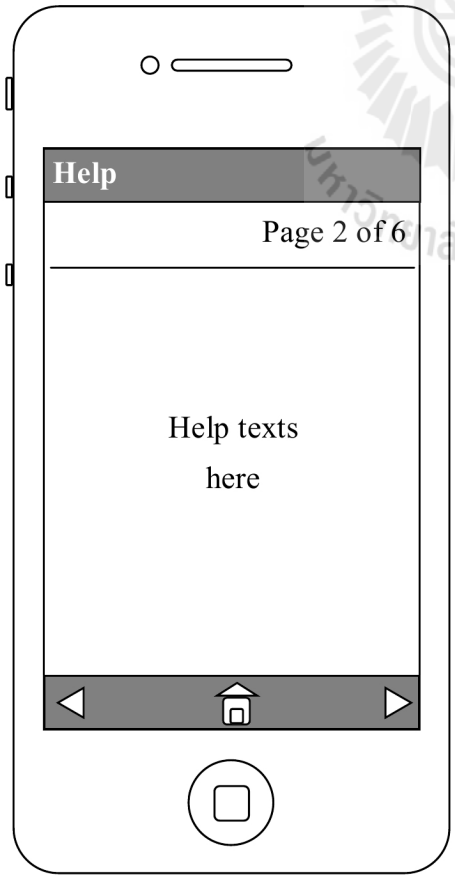
Title Bar	= Lesson 1: Pretest
Text	= on the screen
Sound	= music to show score
Image	= no
Techniques	= Summation of correct score
Button	= Highlight the home button to guide learners to the main menu.



Note:

Help

Title Bar = Help
Icon = help icon
Text = Table of contents on the screen
Sound = no
Image = no
Techniques = Show texts frame by frame. Tapping the next/previous buttons to read the texts. On The page 1, show the Table of contents and each content is linked to its details. When tapping the title bar (Help), it returns to the first page (Table of contents).



Note:

Help

Title Bar = Help
Icon = help icon
Text = help texts
Sound = no
Image = no
Techniques = Show texts frame by frame.

13) Have experts review

Primary review of the storyboards was conducted by the researcher and advisor, then followed by the experts.

14) Make revisions

After being reviewed by the experts, the researcher revised the storyboards where necessary.

Stage III Development

15) Record audio scripts

The audio scripts were both written and spoken texts read by the native speakers. A digital recorder was used to record.

16) Prepare music or sound effect

The researcher downloaded the music and sound effects from Microsoft website available at http://office.microsoft.com/en-us/clipart.

17) Prepare pictures

The researcher produced pictures using Adobe Illustrator by Adobe inc. and downloaded some clip arts from the Microsoft website. Adobe Photoshop by Adobe Inc. was used to edit pictures.

18) Produce a MAEL application with the authoring program

When the storyboard and pieces of media (audio, music, pictures, and video clips) were ready for producing a MAEL application, the researcher used Adobe Flash Professional to assemble all pieces and created graphics—such as user's interface, buttons, texts, images, moving pictures,—as written on the storyboards. The researcher and peers reviewed and tested the MAEL application at the beginning.

19) Produce a user's manual

The researcher produced the user's manual comprising of system requirements of mobile phones, list of mobile phones compatible with the MAEL application, contents, how to use, and procedures of learning.

20) Have experts review and evaluate

When the MAEL application and its manual were complete, the researcher had three experts examine and evaluate using the evaluation form. The form includes the issues of evaluation. The results showed that all the experts viewed that the MAEL application were good and very good in terms of the presentation of contents, audio and graphics, language use and usage, interface design, and language learning theory-based design.

21) Make revisions

The researcher revised the MAEL application based on comments and recommendations provided by the experts.

22) Conduct three tryouts.

To assure the efficiency of MAEL application in developing stage according to the efficiency criterion determined at E_1/E_2 = 80/80, the researcher conducted three tryouts as follows.

Tryout 1 : Individual Testing

The first tryout or individual testing was conducted with 3 students of the third-year English program in the Faculty of Humanities at the Koraj Education Center of Mahamakut Buddhist University in the semester 1/2010. The students' scores collected from exercises and posttests in the MAEL application

were calculated to investigate the E_1/E_2 efficiency; and the results were also utilized to revise the application.

Tryout 2 : Small Group Testing

The second tryout or small group testing was conducted with 6 students of the third-year English program in the Faculty of Humanities at the Koraj Education Center of Mahamakut Buddhist University in the semester 1/2010. The students' scores collected from exercises and posttests in the MAEL application were analyzed to investigate the E_1/E_2 efficiency; and the results were also utilized to revise the application.

Tryout 3 : Field Testing

The third tryout or field testing was conducted with 19 students of the third-year English program in the Faculty of Humanities at Mahachulalongkornrajavidyalaya University Nakhon Ratchasima Campus in the semester 1/2010. The students' scores collected from exercises and posttests in the MAEL application were analyzed to investigate the E_1/E_2 efficiency; and the results were also utilized to revise the application.

The efficiency of MAEL application in the third tryout met the efficiency criterion determined at E_1/E_2 = 80/80 as shown in Table 3.5.

Table 3.5 The efficiency of MAEL application from three tryouts

Tryouts	n	E_1/E_2
Tryout 1: Individual Testing	3	77.89/75.00
Tryout 2: Small Group Testing	6	78.60/76.67
Tryout 3: Field Testing	19	82.16/81.05

23) Make final revisions

When the MAEL application met the efficiency criterion determined at the beginning (E_1/E_2 = 80/80), the researcher made the final revisions where necessary and produced a complete copy of the MAEL application ready to validate in a trial run. The MAEL application was compiled by Adobe Flash Professional (CS6 version) with an IPA file for iOS installation, APK file for Android, and SWF file for other mobile phones with Flashlite Player (by Adobe Inc.) pre-installed.

Stage IV

24) Validate the MAEL application

When the MAEL application, which was efficient in the tryouts, was complete, it was ready for validating with the population in this study. The validation of MAEL application refers to a trial run of which results was stated in the next chapter (Chapter 4).

Generally, the classroom procedures of MAEL activities are as follows:

1. Pre-MAEL activities
   1.1 Gain attentions of the learners.
   1.2 Arouse the learners' background knowledge about what to listen to.
   1.3 Teach vocabulary of the listening texts.
2. MAEL activities
   2.1 Learners implement the application individually or in group.
   2.2 Learners do activities of a lesson in the MAEL application,

beginning from pretest, pre-listening task, listening task, post-listening task, and posttest.

3. Post-MAEL activities

3.1 Do more exercises or worksheets for retention and transferring of knowledge to the job.

3.2 Teacher and learners make conclusion.

Feedback arising from validation would be used to improve each stage of the model for producing a mobile phone-assisted English listening application, if it was necessary.

4.2 Construct evaluation instruments

The evaluation instruments were used to assess the effectiveness of the developed model in terms of students' learning achievement and opinions towards learning through the MAEL application after the treatment. The instruments include:

1) an achievement test of listening comprehension,

2) a questionnaire, and

3) a semi-structured interview.

The researcher constructed each instrument as follows.

4.2.1 Achievement test of listening comprehension

The Achievement test of listening comprehension was administered before and after the experiment. The test is a paper-based type with multiple choices and consists of 20 items. In testing, the students listened to the texts twice and answered the comprehension questions that follow. To construct the test,

the researcher followed these procedures.

1) Study the literature related to the language test construction and assessing listening as stated in Chapter 2.

2) Prepare listening texts and test audio.

3) Determine the specification of test based on the content and objectives of the MAEL application as shown in Table 3.6.

Table 3.6 Specification of achievement test of listening comprehension

Objectives The student is able to	Number of items	%
1. identify the main idea of the listening text.	4	20
2. find out specific information in the listening texts.	11	55
3. make inferences from the listening texts.	5	25
Total	20	100

4) Write the test with 30 items. Since the researcher would select only 20 items that had quality in terms of accuracy, content validity, item-objective congruence (IOC), difficulty index (p), discrimination power (r), and reliability, the test items needed to be written more than 20.

5) Have experts examine the test in terms of accuracy, content validity, and item-objective congruence (IOC) using the formula below.

$$\text{IOC} = \frac{\sum R}{N}$$

From the aforementioned formula,

IOC = The index of item-objective congruence

$\sum R$ = Total score from the experts' responses.

N = Total number of the experts

The results showed that all the experts agreed that the test was in accordance with the contents of MAEL application and accurate in terms of questions, answers, contents and language use. The IOC value was between 0.8 and 1.0, which was accepted. However, the experts gave a useful comments which the researcher used to improve the test.

6) Conduct three tryouts to examine the quality of the test. This step was done during the tryouts of the MAEL application as aforementioned. The test was administered to 3 and 6 students at the Koraj Education Center of Mahamakut Buddhist University, as well as 19 students at Mahachulalongkornrajavidyalaya University Nakhon Ratchasima Campus. All of the students were in the third year of English program in the first semester of the Academic Year 2010. The data obtained were analyzed with the Item Analysis Software 2006 by Kanit Khaimook to find out the difficulty index, discrimination power, and reliability (KR-20) of the test. Then, the researcher selected only the test items that had quality according to the accepted criteria in terms of the difficulty index, discrimination power, and reliability as shown in Table 3.7.

Table 3.7 Quality of achievement test of listening comprehension

	Number of items	Difficulty index (p)	Discrimination power (r)	Reliability (r_{tt})
Achievement test of listening comprehension	20	0.35-0.65	0.20 – 0.85	0.83

7) Make final revisions of the test.

8) Produce a complete copy of the test.

4.2.2 Questionnaire

The questionnaire was used to explore students' opinions towards learning through the mobile phone-assisted English listening comprehension. It contains two main parts: five-point rating scale questions and open-ended questions. The Likert's rating scale was used to construct the questionnaire form. The scale consists of five categories and two parts including an initial statement and a list of responses categories ranging from "strongly agree" to "strongly disagree". The scale categories were labeled using numbers from 1 to 5. Each number refers to different levels of opinions, for example; 1 means strongly disagree and 5 means strongly agree, etc. (Peterson, 2000).

Using Likert's scale method, the researcher constructed a questionnaire according to the following procedures:

1) Review related literature on how to construct a questionnaire based on Likert's method.

2) Compile possible issues concerning learning through the developed MAEL application.

3) Write 20 items of the questionnaire comprising both positive and negative statements based on the possible issues. Only the items that passed the minimum criteria for accepting the questionnaire quality would be selected as the questionnaire items. The rating scale for the positive statements is as follows:

5 means 'strongly agree'

4 means 'agree'

3 means 'uncertain'

2 means 'disagree'

1 means 'strongly disagree'

While the rating scale for the negative statements is as follows:

1 means 'strongly agree'

2 means 'agree'

3 means 'uncertain'

4 means 'disagree'

5 means 'strongly disagree'

4) Have experts examine the questionnaire in the issues: content validity and congruence between items and research objectives (i.e., IOC). The results showed that all the experts agreed that the questionnaire had content validity and its IOC was more than 0.80, which was accepted.

5) Make revisions according to the experts' suggestions.

6) Conduct three tryouts to examine the efficiency of the questionnaire. This step was also done during the tryouts of the MAEL application as aforementioned. The questionnaire was administered to 3 and 6 students at the Koraj Education Center of Mahamakut Buddhist University, as well as 19 students at Mahachulalongkornrajavidyalaya University Nakhon Ratchasima Campus. All of the students were in the third year of English program in the first semester of the Academic Year 2010. The data obtained were analyzed to find out the discrimination

power (using Corrected Item-Total Correlation) , and reliability (using Cronback's Alpha Coefficient) of the questionnaire. Then, the researcher selected only the items that had quality according to the accepted criteria in terms of the discrimination power and reliability as shown in Table 3.8.

Table 3.8 Quality of the questionnaire

7) Make final revisions of the questionnaire.

	Number of items	Discrimination power (r)	Reliability
Questionnaire	13	0.30 – 0.85	0.82

8) Produce a complete copy of the questionnaire.

4.2.3 Semi-structured interview

Guided questions were performed to help the researcher carry out a semi-structured interview. To do this, the researcher created five questions expanded from the questionnaire. The guided questions contain the topics to be covered and they asked about students' opinions relating to the use of mobile phone-assisted English listening application for improving their English listening skills and all the guided questions were examined by the thesis advisor and experts who agreed that the questions were appropriate and congruent with the research objectives.

4.3 Revise the model

After using the model to produce a mobile phone-assisted English listening application, in this phase, it was found from the tryouts that the MAEL application was efficient according to the efficiency criterion determined at

E_1/E_2 = 80/80. This finding indicated that the developed model was effective for producing a mobile phone-assisted English listening application. However, the researcher had revised the model by refining some terms used in each step of the model in order to make them clearer and easier to taking into practice according to the problems encountered during the production and tryout of the MAEL application.

Phase 5 Collecting Data

This phase was a trial run of the MAEL application with the population which was all the third-year English program students purposively selected from the Faculty of Humanities at Mahachulalongkornrajavidyalaya University Nakhon Ratchasima Campus (MCUNRC) in the first semester of the Academic Year 2011. This study is quasi-experimental research in the form of one group pretest posttest design. Prior to the experiment, the students took a pre-achievement test. Then the researcher provides treatment with the instruction through the MAEL application. After the treatment, the students took a post-achievement test again and responded to the questionnaire and semi-structured interview. Finally, the data collected from the experiment were analyzed in accordance with the research objectives. Figure 3.3 displays the design of this study

Figure 3.3 Design of the study

Experimental Group	O_1	X	O_2

Note: O_1 = Pre-achievement test, X = Treatment, O_2 = Post-achievement test

With regard to the population, all the third-year students (N=18) of English program from the Faculty of Humanities at MCUNRC were purposively selected. They enrolled on Listening and Speaking I course in the semester 1/2011 and all of them were Buddhist monks and novices.

In data collection, the researcher spent 8 weeks (2 hours each) to collect data from the target students according to the procedures shown in Table 3.9

Table 3.9 The procedures of data collection

Week	Procedures
1	- Give a pre-achievement test to the students to examine their existing listening comprehension abilities. - Introduce how to use the MAEL application, entitled "mListening".
2-7	- Give treatment with instruction through the MAEL application based on the developed lesson plans.
8	- Have all students do a post-achievement test and respond to the questionnaire and semi-structured interview.

Figure 3.4 shows the general steps of data collection.

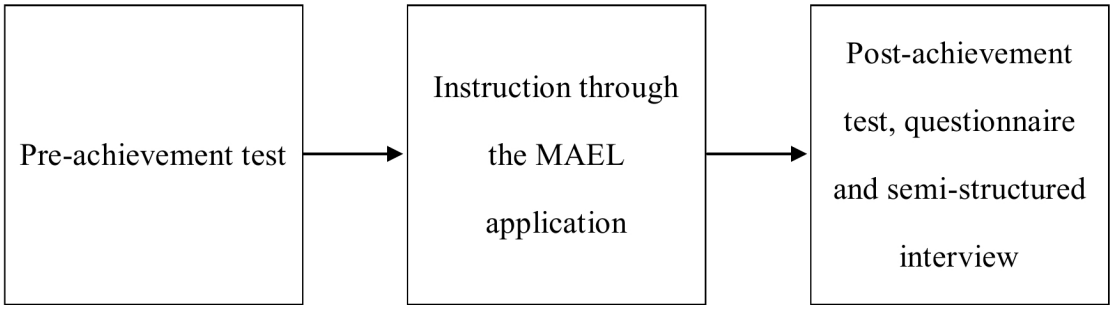


Figure 3.4 The steps of data collection

Phase 6 Analyzing Data

The data analyses were conducted in accordance with the research objectives stated in Chapter 1 as follows.

6.1 Efficiency of the MAEL application

The E_1/E_2 formula was employed to examine the efficiency of the MAEL application based on the efficiency criterion determined at E_1/E_2 = 80/80. For this formula, the data gathered from exercises and posttests in the MAEL application were analyzed to find out the percentage of the students' mean score. The E_1/E_2 formula is as follows (Brahmawong, et al., 1977, p.51).

$$E_1 = \frac{\frac{\sum X}{N}}{A} \times 100$$

E_1 = Efficiency of the process

$\sum X$ = Total scores that students gain from doing exercises in the MAEL application.

N = Number of all the students

A = Total scores of all the exercises

$$E_2 = \frac{\frac{\sum F}{N}}{B} \times 100$$

E_2 = Efficiency of the learning outcomes

$\sum F$ = Total scores that students gain from doing posttests in the MAEL application.

N = Number of all the students

B = Total scores of all the posttests

Since the efficiency criterion in this study was determined at E_1/E_2 = 80/80, the efficiency value that was acceptable (level of error = 2.5%) was shown in Table 3.10.

Table 3.10 Acceptance of the efficiency value in the study

Efficiency Value*	Acceptable Efficiency Value (%)
E_1	77.50 - 82.50
E_2	77.50 - 82.50

*The efficiency criterion was determined at E_1/E_2 = 80/80.

6.2 Comparison of students' learning achievement

The mean scores that the students gained from doing pre-achievement and post-achievement tests were compared using a dependent (paired) sample t-test to investigate whether or not students' learning achievement was higher.

6.3 Students' opinions

Data gained from the questionnaire and semi-structured interview were analyzed to find out the students' views towards the use of mobile phone-assisted language learning application for improving listening comprehension abilities. For Part 1, the data of five-point rating scale were tallied and calculated for frequency, percentage, mean, and standard deviation (S.D.) in order to describe the opinions that the students experienced after the MAEL activities.

To examine the levels of students' opinions, which were divided into "good", "neutral", and "not good", the researcher compared students' questionnaire scores with the score of the neutral level that was obtained from the interval estimate using the following formula (Kijpredarborisuthi, 2003, p. 163).

$$\text{Interval estimate} = \mu \pm z\frac{S.D.}{\sqrt{n}}$$

μ = Total score of the "uncertain" level of opinions in the 13 items of the five-scale questionnaire giving 3 points per item (μ = 39)

n = Number of students (n = 18)

S.D = Standard deviation of the students' questionnaire scores (SD = 1.76)

Z = Z score at the significant level of .05 (Z = 1.96)

The criteria for examining the levels of opinions could be seen in Table 3.11.

Table 3.11 Criteria for examining the levels of students' opinions

Levels of opinions	Criteria
Good	More than $\mu + z\frac{S.D.}{\sqrt{n}}$
Neutral	From $\mu - z\frac{S.D.}{\sqrt{n}}$ to $\mu + z\frac{S.D.}{\sqrt{n}}$
Not good	Less than $\mu - z\frac{S.D.}{\sqrt{n}}$

After calculating, the interval estimate's results were used to determine the criteria for the levels of students' opinions in this study as shown in Table 3.12.

Table 3.12 Criteria for the levels of students' opinions

Levels of opinions	Criteria
Good	More than 39.81
Neutral	From 38.19 to 39.81
Not good	Less than 38.19

In terms of Part 2, the data gathered from the open-ended questions and semi-structured interview were analyzed using a content analysis. To do this, the researcher synthesized the data to investigate the issues and categorized them according to the questions of the questionnaire and interview.

In summary, this chapter proposed six phases for the research and development of the model for producing a mobile phone-assisted English listening application as follows:

Phase 1 Developing a Conceptual Framework

Phase 2 Examining the Conceptual Framework

Phase 3 Designing a Model

Phase 4 Verifying the Effectiveness of the Model

Phase 5 Collecting Data

Phase 6 Analyzing Data

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CHAPTER 4

RESULTS

This chapter presents the research findings resulting from analyzing data obtained from the trial run of the mobile phone-assisted English listening (MAEL) application. The findings were organized around the research objectives specified in Chapter 1 and divided into two main topics: (1) components of the model and (2) effectiveness of the model.

4.1 Components of the Model

The components of the model for producing a mobile phone-assisted English listening application consisted of four main stages, including:

Stage 1 Planning

This stage aimed to prepare resources needed for producing a mobile phone-assisted English listening application.

Stage 2 Design

This stage aimed to design a mobile phone-assisted English listening application by writing storyboards.

Stage 3 Development

This stage aimed to create a mobile phone-assisted English listening application and conduct a tryout to test its efficiency.

Stage 4 Validation

This stage aimed to conduct a trial run of the developed mobile phone-assisted English listening application.

Details about the components of the model were presented in the next chapter (Chapter 5), which divided them into four parts: (1) introduction, (2) the model for producing a mobile phone-assisted English listening application, (3) implementation of the model, and (4) the mobile phone-assisted English listening application.

4.2 Effectiveness of the Model

The effectiveness of the model for producing a mobile phone-assisted English listening application can be found from the results of assessing (1) the efficiency of the MAEL application, (2) students' learning achievement after learning through the MAEL application, and (3) students' opinions towards learning through the MAEL application as fallows.

4.2.1 Efficiency of the MAEL application

The trial run of the MAEL application was conducted with the population (N=18) in this study in the semester 1/2011. The data, which were collected from exercises and posttests the students had done in the application during the field test, were analyzed to assess the efficiency of the MAEL application as shown in Table 4.1.

Table 4.1 Efficiency of the MAEL application

Score	N	Full Score	$\bar{X}$	S.D.	%
Exercises	18	95	78.28	7.74	82.40
Posttests	18	60	48.56	2.73	80.93
E_1/E_2			82.40/80.93		

Note: Efficiency criterion determined at E_1/E_2 = 80/80

From Table 4.1, it was revealed that the E_1/E_2 efficiency of the mobile phone-assisted English listening application produced in accordance with the developed model was 82.40/80.93, which met the efficiency criterion determined at E_1/E_2 = 80/80.

4.2.2 Students' learning achievement

To investigate students' learning achievement after the MAEL activities, the researcher analyzed the students' score data obtained from taking pre-and post-achievement tests of listening comprehension using a dependent sample t-test as presented in Table 4.2.

Table 4.2 Comparison of pre-and post-learning achievement of the students

Score	N	$\bar{X}$	S.D.	$\bar{d}$	t	p
Pre-achievement test	18	8.44	1.65	7.06	18.410	.000
Post-achievement test	18	15.50	1.92			

From Table 4.2, it could be seen that the average score of students' pre-achievement test was 8.44 (S.D. = 1.65), while the average score from the post-achievement test was 15.50 (S.D. = 1.92). When testing the difference with a dependent sample t-test, it was found that the post-achievement test's average score was higher than the pre-achievement test's average score with statistically significant difference at the .05 level.

4.2.3 Students' opinions

The students' opinions towards learning through the mobile phone-assisted English listening application can be found from the questionnaire and semi-structured interview. The results of data analyses from both questionnaire and semi-structured interview were presented as follows.

Section 1: Questionnaire

The data obtained from the questionnaire were divided into two parts: the five -point rating scale and the open-ended questions. For Part 1, the five-point rating scale, the students' questionnaire scores were tallied and calculated to find out the level of students' opinions by comparing to the criteria specified in Chapter 3 as shown in Table 4.3.

Table 4.3 The level of students' opinions

Levels of opinions	Criteria	N	%
Good	More than 39.81	18	100
Neutral	From 38.19 to 39.81		
Not good	Less than 38.19		

Note: Full score = 65, Maximum score = 61, Minimum score = 54,
Mean score = 57.06, S.D. = 1.76

From Table 4.3, it was shown that from the questionnaire's full score of 65, the students' maximum score was 61, minimum score was 54, and mean score was 57.06 (S.D. = 1.76). When comparing to the criteria, it was found that all the students (N = 18) obtained the scores more than 39.81, which was in the "good" level.

When considering each item of the questionnaire, it was found as shown in Table 4.4.

Table 4.4 Students' opinions towards learning through the mobile phone-assisted English listening application

Items	Strongly agree		Agree		Uncertain		Disagree		Strongly disagree		$\overline{X}$	S.D.
	N	%	N	%	N	%	N	%	N	%		
1. The mListening application allows you to know your learning progress immediately.	16	88.90	2	11.10							4.89	0.32
2. The mListening application helps to develop your English listening skills.	15	83.30	3	16.70							4.83	0.38
3. The mListening application raises your interest in practicing English listening skills.	14	77.80	4	22.20							4.78	0.43

Table 4.4 (Continued)

Items	Strongly agree		Agree		Uncertain		Disagree		Strongly disagree		$\bar{X}$	S.D.
	N	%	N	%	N	%	N	%	N	%		
4. The mListening application allows you to practice English listening skills everywhere you need.	12	66.70	6	33.30							4.67	0.49
5. The mListening application allows you to practice English listening skills everytime you need.	9	50.00	9	50.00							4.50	0.51
6. The mListening application makes you inconvenient to practice English listening skills.							9	50.00	9	50.00	4.50	0.51

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Table 4.4 (Continued)

Items	Strongly agree		Agree		Uncertain		Disagree		Strongly disagree		$\bar{X}$	S.D.
	N	%	N	%	N	%	N	%	N	%		
7. The mListening application gives you more chances to review the mListening lessons in order to practice English listening skills.	8	44.40	10	55.60							4.44	0.51
8. Learning a conversation in the pre-listening task named “Speaking” of the mListening application helps you to comprehend the listening text.	3	16.70	15	83.30							4.17	0.38

Table 4.4 (Continued)

Items	Strongly agree		Agree		Uncertain		Disagree		Strongly disagree		$\overline{X}$	S.D.
	N	%	N	%	N	%	N	%	N	%		
9. Using the mListening application, you can practice English listening skills outside of the classroom.	3	16.70	15	83.30							4.17	0.38
10. The mListening application makes you have more attempts to practice English listening skills.	1	5.60	17	94.40							4.06	0.24
11. Learning vocabulary in the pre-listening task named “Word Building” of the mListening application helps	1	5.60	17	94.40							4.06	0.23

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Table 4.4 (Continued)

Items	Strongly agree		Agree		Uncertain		Disagree		Strongly disagree		$\bar{X}$	S.D.
	N	%	N	%	N	%	N	%	N	%		
you to comprehend the listening text.												
12. It is difficult to use the mListening application.					1	5.60	15	83.30	2	11.10	4.06	0.42
13. You feel worried while learning through the mListening application.			1	5.60	4	22.20	8	44.40	5	27.80	3.94	0.87

From Table 4.4, it was revealed that all students (N = 18) agreed and strongly greed with the following statements.

1. The mListening application allows the students to know their learning progress immediately.

2. The mListening application helps to develop students' English listening skills.

3. The mListening application raises the students' interest in practicing English listening skills.

4. The mListening application allows the students to practice English listening skills everywhere they need.

5. The mListening application allows the students to practice English listening skills everytime they need.

6. The mListening application gives the students more chances to review the mListening lessons in order to practice English listening skills.

7. Learning a conversation in the pre-listening task named “Speaking” of the mListening application helps the students to comprehend the listening text.

8. Using the mListening application, the students can practice English listening skills outside of the classroom.

9. The mListening application makes the students have more attempts to practice English listening skills.

10. Learning vocabulary in the pre-listening task named “Word Building” of the mListening application helps the students to comprehend the listening text.

In addition, all the students agreed and strongly agreed that the mListening application made them convenient to practice English listening skills and seventeen students agreed and strongly agreed that it was easy to use the mListening application. While there were thirteen students who agreed and strongly agreed that they did not feel worried as they were learning through the mListening application.

In Part 2, the open-ended question, the data obtained from the four open-ended questions were analyzed using a content analysis to find out emergent issues and categorized them into similar opinions. The results of content analysis for each question were shown in the tables as follows.

Question 1: What do you like in learning through the mobile phone-assisted English listening application? Why?

The students' answers to this question could be categorized as shown in Table 4.5.

Table 4.5 Students' opinions about the likes in the MAEL application

Items	N
1. Convenience and modernity of the MAEL application	11
2. Listening texts read by the native speakers	9
3. Word Building exercises before listening tasks	8
4. Easy-to-use MAEL application	8
5. Listening exercises and test	7
6. Conversations (Speaking) before listening tasks	6
7. Provision of the rewind option to listen again	5
8. Provision of learning control to the students	4
9. Interesting listening texts	2

From Table 4.5, it was found that more than half of the students (N = 11 out of 18) said that they liked the convenience and modernity of the MAEL application because they could practice English listening wherever and whenever they needed, as a student said, “It is convenient to practice listening whenever I want”, and another said, “ The application is very modern and helps me learn a lot everywhere”. Half of the students (N = 9) said that they liked the listening texts narrated by the native speakers, as a student said, “ I like listening to native speakers”. Eight students said that they liked the Word Building exercises before listening tasks because the exercises helped them to learn the words available in the listening texts they were going to listen. The eight students also liked the easy-to-use features of the MAEL application. They said that it was easy to understand how to use the application and they just used a finger to touch or tap a button appeared on the mobile phone’s screen. Seven students liked listening exercises and tests in the MAEL application. They said that they liked to take a test and do exercises in the MAEL application providing them with the immediate feedback. There were six students who liked the conversations of the Speaking, a pre-listening task. They said that the conversations concerned with the listening texts they were going to listen, so the conversations could help them to comprehend the listening texts. The rewind option in the MAEL application was also liked by five students. The students said that they liked the rewind option which allowed them to play the recordings to listen again. In addition, four students said that they liked the students’ control of learning which the MAEL application allowed them to study or review the part they wanted. While two students said that the listening texts were interesting and appropriate for their level of English language proficiency.

Question 2: What do you dislike in learning through the mobile phone-assisted English listening application? Why?

The students' answers to this question were revealed in Table 4.6.

Table 4.6 Students' opinions about the dislikes in the MAEL application

Items	N
1. No provision of answer keys for exercises and tests	3
2. Long listening texts	1

From Table 4.6, it was shown that three students did not like that there were no answer keys for exercises and tests in the MAEL application as a student said, "No answer keys, there should be answer keys for the items with the wrong selection". And a student did not like the long listening texts. He said, "It takes too long time to listen to the long listening text again for finding out the answer of the next question". However, more than half of the students (N = 10 out of 18) could not find what they disliked in the MAEL application, as a student shortly said, "Nothing". And the rest of the students skipped to answer this question.

Question 3: Does the mListening application help you to develop your English listening skills? If yes, how? And if no, why not?

The students' answers to this question were grouped as shown in Table 4.7.

Table 4.7 Students' opinions about how the MAEL application helps them to develop English listening skills

Items	N
1. Developing more English listening skills	12
2. Understanding the meaning of words	3
3. Understanding the main ideas of the listening texts	2
4. Understanding the details of the listening texts	2

From Table 4.7, it was found that most students (N = 12 out of 18) expressed that the MAEL application helped them to develop their English listening skills as a student said, "The application helps me to improve my listening skills very much". In addition, few students expressed how the MAEL application helped them to develop listening skills in terms of understanding the meaning of words, main ideas, and details of the listening texts, as a student said, "The application helps me to develop my listening skills in terms of listening for the main ideas and details" and another said, "The application helps me to know the new words".

Question 4: Do you have any suggestions on learning through the mobile phone-assisted English listening application? If yes, please specify.

The students' answers to this question varied and their suggestions about learning through the mobile phone-assisted English listening application were revealed as follows.

Firstly, more contents of English such as grammar and pronunciation should be added to the MAEL application as a student said, “There should be more contents for practicing listening”. Secondly, the slow and fast options should be provided to control the recordings in the MAEL application as a students said, “Listening texts should have slow and fast speeds, which the learners can choose”. Thirdly, the students said that the MAEL application should provide a glossary option and keys for both exercises and tests as a student said, “The list of important vocabulary of each lesson and the answer keys should be provided”. Finally, the students said that the other skills of English such as reading and writing should be added to the MAEL application because it would help the students develop every skill of English at the same time.

Section 2: Semi-structured interview

In the semi-structured interview, there were five guided questions asking about opinions towards learning through the MAEL application and suggestions. The students’ answers to each question were recorded using an MP3 recorder and transcribed verbatim into the text form. Then the text data were analyzed using a content analysis. The results of semi-structure interview were presented as follows.

Question 1: Do you like learning through the mListening application? Why?

All the students (N = 18) expressed positive ideas to this question. They said that they liked learning though the MAEL application because it was convenient to use the application for practicing listening anytime or anyplace they wanted. The students also said that the MAEL application was interesting and motivated them to learn, since the application contained native speakers’ voices, pictures, and listening tests and exercises as a student said, “I feel excited to practice listening via the

application because I can check my understanding in the text immediately". Besides, the students expressed that they enjoyed learning though the MAEL application, since they were independent to control their own learning in the application according to their needs, as a student said, "I don't get bored, but interested, because the application makes me concentrate on listening". And another said, "I can easily replay the recordings, review the lessons as I want, and redo tests and exercises to practice as much as I want".

In addition, the students also expressed different ideas on what they liked in learning through the MAEL application, more than half of the students (N = 12 out of 18) said that they liked the overall feature of the application because it was easy to use and easily understandable. However, few students expressed what they disliked in learning through the MAEL application. They said that some listening texts were too long, since they had to listen for long to find out the answer of a question.

Question 2: Does the mListening application make you convenient for practicing English listening skills? How?

All the students positively responded to this question. They said that the MAEL application was very convenient for practicing listening, since they could play and replay the recordings easily and conveniently when comparing to the other devices such as CD players or MP3 players, as a student said, "It's very convenient to play and touch to replay when I want". The students also said that they could go to the parts of the application easily using just a finger to tap. In addition, the students said that it was convenient for them to carry the mobile phone to anywhere and used the MAEL application when they needed, as a student said, "It's very convenient because I can carry the phone to practice listening in my free time at many places in

the temple such as the pool, garden, and ordination hall". And another said, "It's convenient for me to use it outside of the classroom at the University or temple when I'm free because I can immediately open the application to practice listening."

Question 3: Is the mListening application beneficial for developing English listening skills? How?

All students responded with positive ideas to this question. They said that the MAEL application was beneficial for developing their English listening skills. They also said that the application improved their abilities to comprehend the listening text as a student said, "The application helps me practice listening a lot. I can know myself how well I understand the text." And another said, "It helps me understand the listening text, I can answer most of the questions asking about the texts and understand the main ideas of the texts as well". In addition, few students stated that they used knowledge of vocabulary and conversations about the texts from the pre-listening activities to help them comprehend the listening texts as a student said, "After learning some words and conversations, they help me better comprehend the texts".

Question 4: Are the aspects of listening activities in the mListening application interesting? How?

Most students stated positively to this question. They said that the aspects of the listening activities were interesting and made them pay more attention to learning. They also said that there were various texts for listening and the listening activities were organized for step-by-step listening, which helped the students better comprehend the texts. Moreover, the students said that listening exercises were very

interesting, since they provided the students with comprehension questions and immediate feedback for both right and wrong answers. This motivated the students to practice more and make more efforts to listen for comprehension as a student said, “I enjoy using the application. It’s interesting. When I do the listening exercises, it gives me the score and makes me know my progress”.

Question 5: Do you have any suggestions for revising and developing the mListening application? How?

For this question, the students gave many suggestions useful for developing the MAEL application. They said that the application should have glossary for each lesson and the tests and exercises should have answer keys. Few students also said that some grammatical rules in each lesson should be explained and other skills such as reading and pronouncing some words should be included in the application. In addition, most students suggested that this kind of mobile application should be developed more for other courses to enhance English language learning, since they wanted to study more. And the mobile application for the tablet should be developed because it might be more convenient for learning via the device with a bigger screen size.

In summary, the results of this study as presented in this chapter were revealed as follows.

1. The components of the model for producing a mobile phone-assisted English listening application consist of four main stages: (1) planning, (2) design, (3) development, and (4) validation.

2. The developed model for producing a mobile phone-assisted English listening application was effective, since it could be seen from the following:

2.1 The efficiency of the mobile phone-assisted English listening application produced in accordance with the developed model was 82.40/80.93, which corresponded to the efficiency criterion determined at $E_1/E_2 = 80/80$.

2.2 The students' learning achievement after learning through the mobile phone-assisted English listening application was significantly higher at the .05 level.

2.3 The students' opinions towards learning through the mobile phone-assisted English listening application were in the "good" level.

CHAPTER 5

THE MODEL FOR PRODUCING A MOBILE PHONE-ASSISTED ENGLISH LISTENING APPLICATION: SURIYAWUTH MODEL

This chapter presents the model for producing a mobile phone-assisted English listening application entitled Suriyawuth Model. The mobile phone-assisted English listening application produced in accordance with the model and entitled mListening is also illustrated with the screen shorts. This chapter, thus, covers four topics: (1) introduction, (2) the model for producing a mobile phone-assisted English listening application: Suriyawuth Model, (3) implementation of the model, and (4) the mobile phone-assisted English listening application: mListening

5.1 Introduction

The model for producing a mobile phone-assisted English listening application or Suriyawuth Model aims to be used as an effective way to produce a mobile application for practicing English listening via the mobile phone with a touch-screen. According to Brahmawong's perspectives, this model was derived from the research and development consisting of six phases: (1) developing a conceptual framework, (2) examining the conceptual framework, (3) designing a model, (4) verifying the effectiveness of the model (5) collecting data, and (6) analyzing data.

The model is also based on the conceptual framework, including (1) the mobile assisted language learning (MALL), (2) models applied for producing MALL materials (Gané, 1985; Alessi and Trollip, 2001), (3) assessing the efficiency of MALL materials (Brahmawong et al., 1977), and (4) how to teach listening.

5.2 The Model for Producing a Mobile Phone-Assisted English Listening Application: Suriyawuth Model

The model is an ongoing evaluation—that is, feedback resulting from validation stage is utilized to make revisions or improve some parts of the model as illustrated in Figure 5.1 on the next page.

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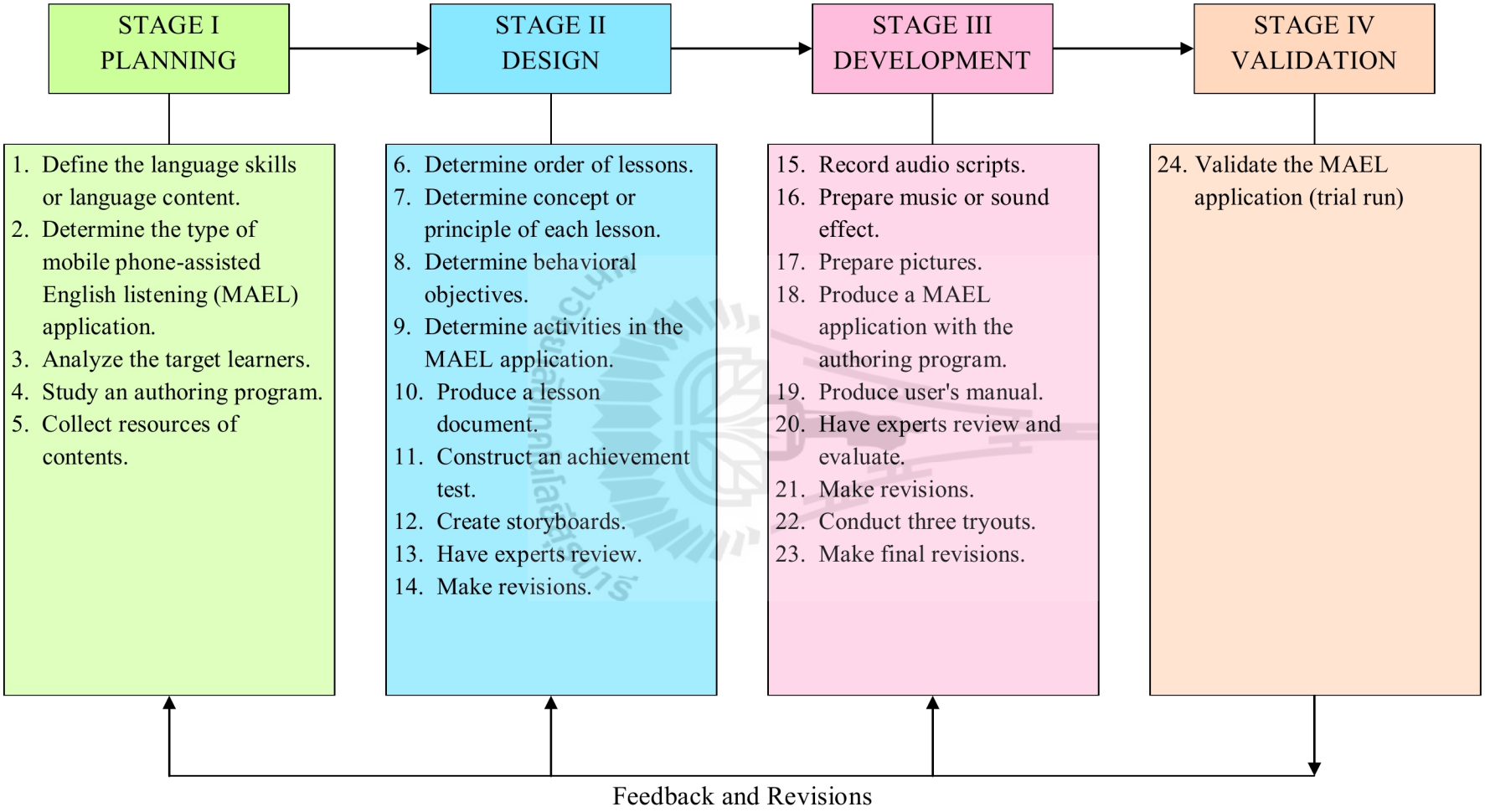


Figure 5.1 The model for producing a mobile phone-assisted English listening application: Suriyawuth Model

From Figure 5.1, it can be seen that the model for producing a mobile phone-assisted English listening application or Suriyawuth Model comprises four major stages with twenty-four steps as follows:

Stage I Planning

Step 1 Define the language skills or language content

This step aims to define what to be instructed. It may begin with language skills: listening, speaking, reading, and writing. Then, consider language contents such as grammar, pronunciation, etc. The selected skill or contents will become the title of the application for learning. Very often in the studies, the title or what to be taught derives from the problems found in the classroom through observation or classroom research. In this study, listening is selected as the main skill of the mobile application, which is entitled “mListening”.

Step 2 Determine the type of mobile phone-assisted English listening (MAEL) application

The types of MAEL application consist of tutorial, drill and practice, simulation and game. Each type has different features and is suitable for some language contents. A developer may select one or mix them.

Step 3 Analyze the target learners

It is very important to know the target group using the MAEL application. The developer, then, conducts a learner analysis in the issues such as level of language proficiency, learner needs, learner characteristics, and mobile phones they used. This helps the developer design the look and feel of the MAEL application.

Step 4 Study an authoring program

The developer as a teacher who is going to design the MAEL application

should be able to use the authoring program such as Adobe Flash Professional by Adobe Incorporation. He or she should know what the program can create for mobile learning. This helps the developer design the MAEL application when writing storyboards.

Step 5 Collect resources of contents

Resources refer to textbooks, documents, or other materials related to the title of the application and what to be instructed. These data may be found on the internet using search engines such as Google, Bing, and Yahoo. The developer should find out the data that are true, academic, and suitable for the learner's language proficiency level.

Stage II Design

Step 6 Determine order of lessons

After gaining the data, they will be analyzed and synthesized to make the contents of MAEL application. These contents, then, are divided in to units of learning such as lessons and chapters. It has no criteria to determine the number of lesson, depending upon the developer's judgment.

Step 7 Determine concept and principle of each lesson

General concept or principle of each lesson should be stated. It tells the learners the short descriptions of what they are going to study.

Step 8 Determine behavioral objectives

This step is to identify the learners' behaviors that will happen after the MAEL activities. Behavioral objectives of each lesson should consist of behaviors, conditions, and standard. When writing, action words should be used to specify the

behaviors to be measured after learning.

Step 9 Determine activities in MAEL application

Activities to be put in MAEL application should be congruent with the selected type of MAEL application, instructional models, and language learning theory. A practice application, for example, may comprise a word-building activity, speaking activity, listening activity, post-listening exercises in the form of true/false, matching, and multiple choices.

Step 10 Produce a lesson document

The developer produces documents for each lesson. The document is a text- based content of the MAEL application. For each lesson, it may consist of lesson title, objectives, concept/principle, pre-test, pre-listening tasks, listening texts, and post-listening exercises, and posttest.

Step 11 Construct an achievement test

To measure the learner's progress after using the MAEL application, the achievement test is needed. The test will be administered to the learners before and after the MAEL activity. It covers all objectives and contents of the MAEL application. Sometimes the developer needs to construct worksheets to enhance the learner's fluency, retention, and ability to transfer to the job as well.

Step 12 Create Storyboards

Actually storyboards are created by drawing graphics of text, picture, cartoon, scene, and other things that will appear on the screen of mobile phone. But some developers' ability to draw those graphics may be limited. To do this, they may just draw a line or simple symbols with descriptions as guidelines for creating with the aid of tools available in the authoring program like Adobe Flash Professional.

The contents in prepared lesson documents will be put in storyboards. The storyboards will show the section of content, scene, frame, user's interface, screen size of mobile phone, graphics with descriptions, techniques of an authoring program, and audio scripts. All sheets of storyboards will be arranged in the order of presentation.

Step 13 Have experts review

The developer has the advisor or experts review the storyboards including the test, main menu, help menu, navigations, lesson controls, lesson title, objectives, concept/principle, pretests, pre-listening tasks, listening tasks, post-listening exercises, posttests, providing feedback, graphics, and audio scripts. The issues to be examined and evaluated are accuracy, appropriateness, content validity, and item-objective congruence (IOC).

Step 14 Make revisions

The developer considers the experts' comments on the storyboards and revises where necessary. After revisions, he or she will have complete storyboards ready for producing a MAEL application.

Stage III Development

Step 15 Record audio scripts

Sometimes the developer may need to find the people who are considered suitable for being narrators in the MAEL programs. They may be native speakers, boys, girls, teenagers, adults, elders and so on. In general, the narrators will read scripts for recording. Recorders, basically, should provide a clear sound, no noises.

Step 16 Prepare music or sound effect

For language teacher, producing music may be difficult. Another way is to

search for free sounds available on the internet, like Microsoft website (http:// office.microsoft.com/en-us/clipart). Even though the downloadable sounds are free, they should be used for educational purpose. Use a sound editor, like Sony Sound Forge, to edit the sounds.

Step 17 Prepare pictures

Like audio, the developer may produce pictures or moving pictures on one's own using camera and video camera. Use a photo editor, like Adobe Photoshop, to edit the picture; and video editor like Microsoft Movie Maker to create and edit video clips. Some picture and video may be difficult to be produced by the developer, searching thought internet such as www.youtube.com is another choice. The use of them should be under permission or for the educational purpose.

Step 18 Produce a MAEL application with the authoring program

This step is to take all prepared pieces of media (audio, music, pictures, and video clips) into producing of MAEL application. An authoring program, like Adobe Flash Professional, is used to assemble the pieces and create graphics—such as user's interface, buttons, text, image, animation, animated cartoon—as written on the storyboards. The developer and peers will review and test the MAEL program in the beginning.

Step 19 Produce user's manual

The contents of user's manual consist of how to install, system requirement of the mobile phones, list of mobile phones compatible with the MAEL application, application content, how to use, procedures of learning, achievement test, worksheets, and answer keys.

Step 20 Have experts review and evaluate

When the MAEL application and its manual are complete, the developer has the experts examine and evaluate using the evaluation form. The form includes the issues of evaluation, namely presentation of contents, audio and graphics, language use and usage, interface design, learning theory-based design, and so on.

Step 21 Make revisions

The developer revises the MAEL application based on the comments or recommendations provided by the experts.

Step 22 Conduct three tryouts.

Tryouts are conducted three times to assure the efficiency of MAEL application in the developing stage. The three tryouts consist of individuals (3 learners), small group (6-10 learners), and field test (One class or 30 learners). The accepted efficiency from each tryout is based on the E_1/E_2 efficiency criterion (Brahmawong et al., 1977, p. 51). E_1 refers to the efficiency of process; E_2 is the efficiency of output. The efficiency of process (E_1) indicates the percentage of mean scores that the learners gain from doing exercises of each lesson in the MAEL application. While, the efficiency of output (E_2) shows the percentage of mean scores that the learners gain from doing a posttest in the MAEL application. The criteria for examining the efficiency of the application (E_1/E_2) may set at 80/80 or 90/90, depending upon the type of subject content. Generally, it is set at 80/80. After the field test, if the efficiency of MAEL program does not meet the determined efficiency criterion—for example, it is lower than 80/80, the developer needs to improve the MAEL application where necessary and conduct a tryout again until the program meets the prescribed criterion. The level of learners and the period of application

use should be similar to those that will do with the target learners.

Step 23 Make final revisions

When the MAEL application meets the prescribed efficiency criterion, the developer makes the final revisions where necessary and produces a complete copy of the MAEL application, which is ready to validate.

Stage IV Validation

Step 24 Validate the complete MAEL application

When the MAEL application is complete, now it is time to validate with the target group of learners. Generally, the procedures of a MAEL activity in the classroom comprise introduction, MAEL activities, conclusion and doing more exercises as stated below.

1. Pre-MAEL activities

   1.1 Gain attentions of the learners.

   1.2 Arouse the learners' background knowledge about what to listen.

   1.3 Build vocabulary of the listening texts.

2. MAEL activities

   2.1 Learners implement the MAEL application individually or in group.

   2.2 Learners use the application by starting from pretest, pre-listening task, listening task, post-listening task, and posttest.

3. Post-MAEL activities

   Produce a language by speaking or do more worksheets for retention and transferring of knowledge to the job.

4. Conclusion

   It is to conclude concepts and principles that the learners have learned.

5.3 Implementation of the Model

Although Suriyawuth Model was developed specifically for producing a mobile phone-assisted English listening (MAEL) application, it may be applied to other skills or language contents. To implement this model, there are suggestions as follows.

1. The developer should study the model components comprising four major stages with twenty-four steps.

2. For some steps, it may be better to carry in the form of teamwork responsible for writing contents, designing graphics, recording sounds or video, and writing computer codes.

3. In each stage, there should be experts who examine the quality of the piece of work. And the experts should be from the related areas such as educational technology, technology-enhanced language learning, and English language instruction.

4. The feedback resulting from the development of the MAEL application and the use of the application for language learning and teaching should be utilized to make revisions of the model.

With regard to the effectiveness, the model can be considered effective when the three conditions happen. These conditions include the following.

1. The efficiency of the MAEL application produced in accordance with the model meets the efficiency criterion determined at $E_1/E_2 = 80/80$.

2. The students' learning achievement is significantly higher after the MAEL activities.

3. The students' opinions towards learning through the MAEL application

are in the “good” level.

5.4 The Mobile Phone-Assisted English Listening Application: mListening

The mobile phone-assisted English listening (MAEL) application or mListening was produced in accordance with Suriyawuth Model and it was created with Adobe Flash Professional CS6. The application aims to enhance English listening skills of the third-year English program students at Mahachulalongkornrajavidyalaya University Nakhon Ratchasima Campus and it is compatible with the smartphones that are certified by Adobe incorporation (http:// www.adobe.com/devnet-apps/flashruntimes/certified-devices.html) and have one of two operating systems: iOS 4.3 or later by Apple incorporation and Android 2.3 or later by Google incorporation.

The MAEL application consists of six lessons, including:

Lesson 1 Personal Profiles

Lesson 2 Countries and Languages

Lesson 3 Occupations

Lesson 4 Free Time Activities

Lesson 5 Possessions

Lesson 6 Buying Things

In terms of the learning objectives of the MAEL application, there are three main objectives as follows:

1. The student is able to identify the main idea of the listening text.

2. The student is able to find out specific information in the listening text.

3. The student is able to make inferences from the listening text.

With regard to the components, the MAEL application consists of the title page, main menu, help page, and six lessons as illustrated in Figure 5.2.

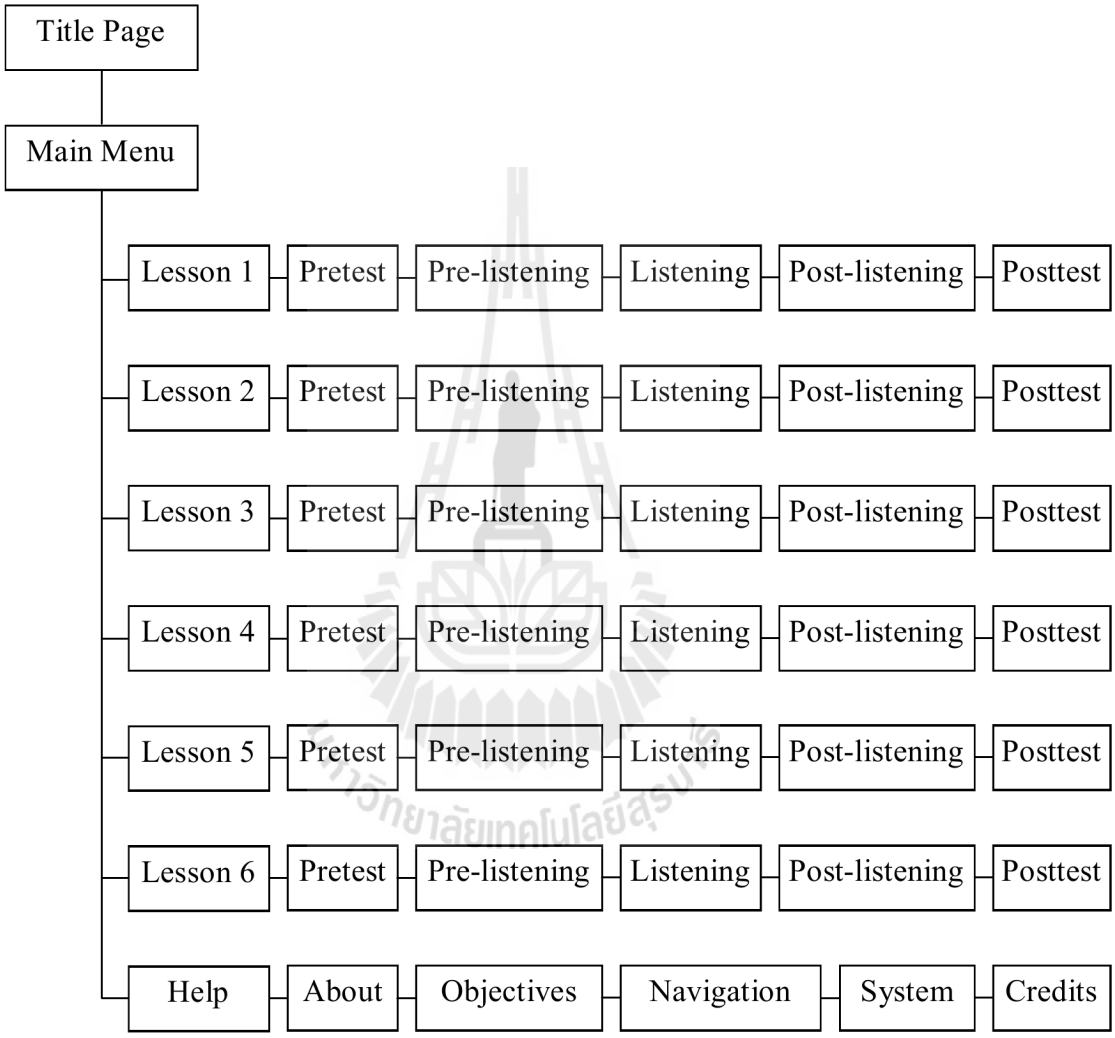


Figure 5.2 Components of the MAEL application

Details about each component of the MAEL application can be seen from the screen shots which were presented as examples and arranged from the left to the right as shown in Figure 5.3.

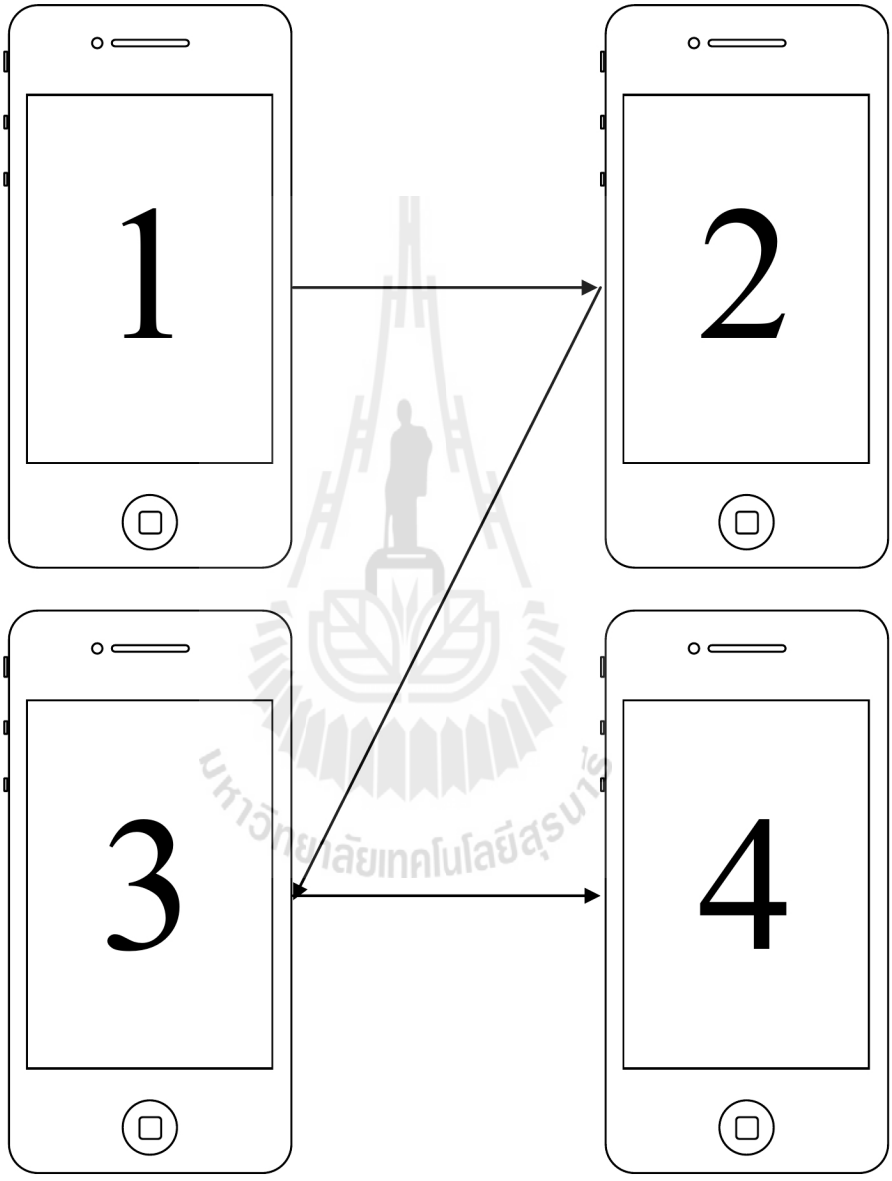


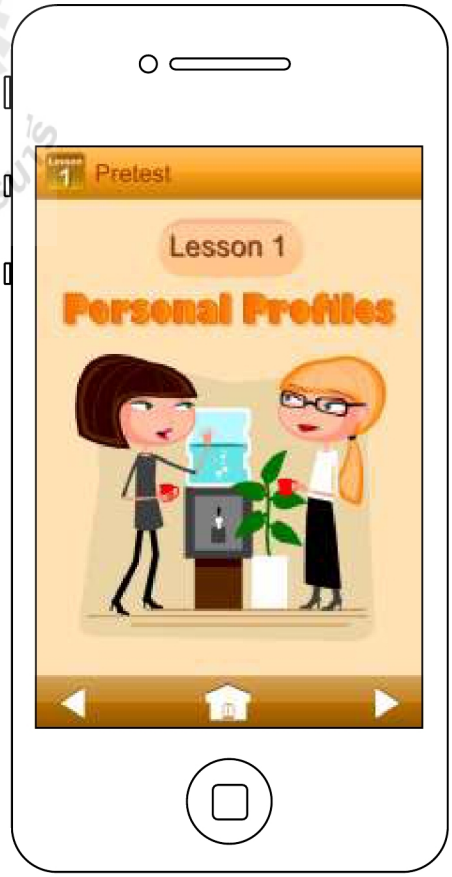
Figure 5.3 Arrangement of screen shots of the MAEL application

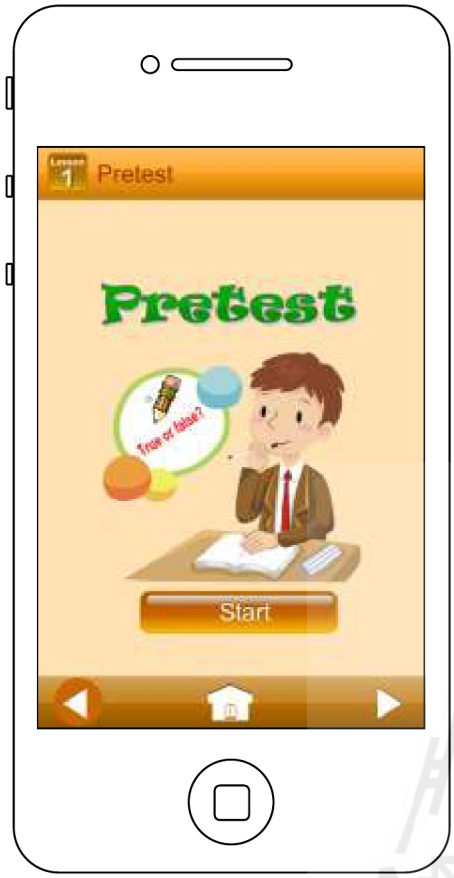
The screen shots of the mobile phone-assisted English listening application or mListening are illustrated as follows.

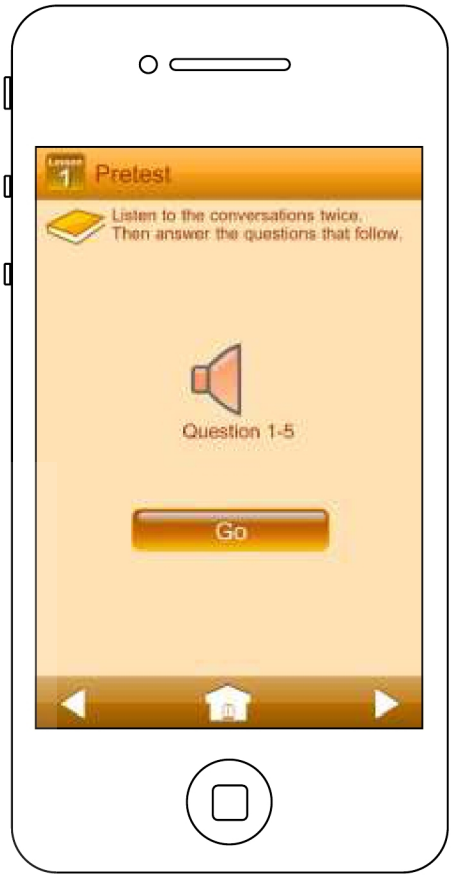

Welcome to
Mobile Phone-Assisted
English Listening
Lessons

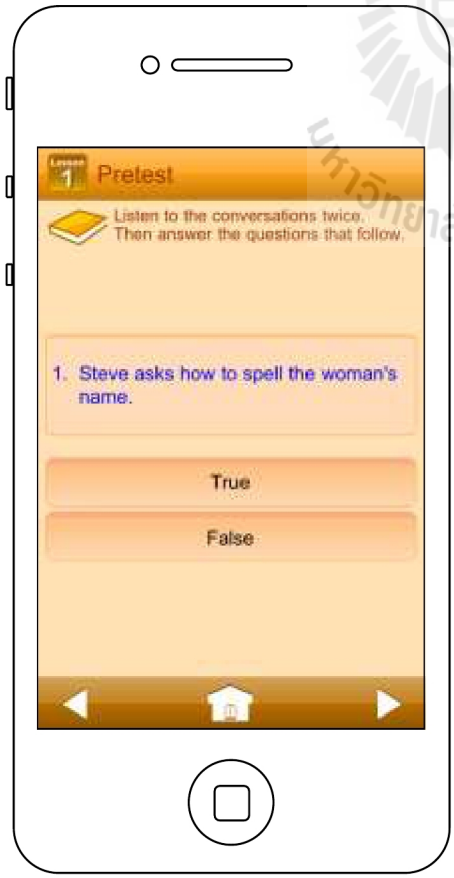

mListening

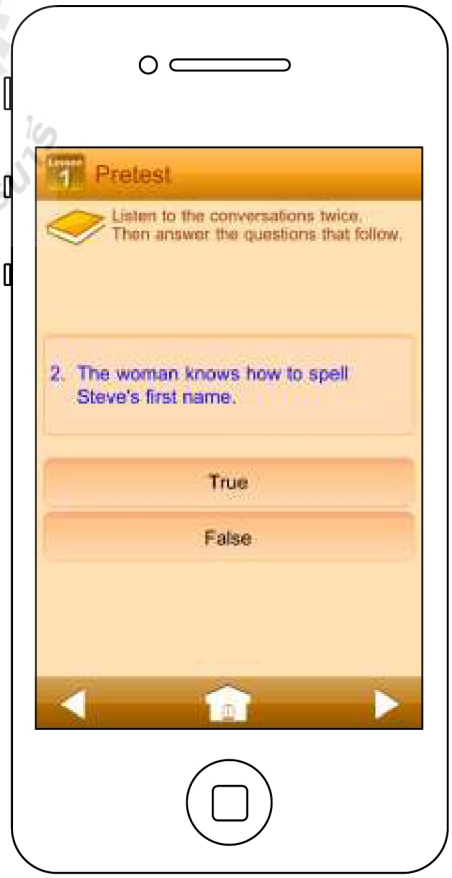

mListening
1 Personal Profiles
2 Countries and Languages
3 Occupations
4 Free Time Activities
5 Possessions
6 Buying Things


Pretest
Lesson 1
Personal Profiles









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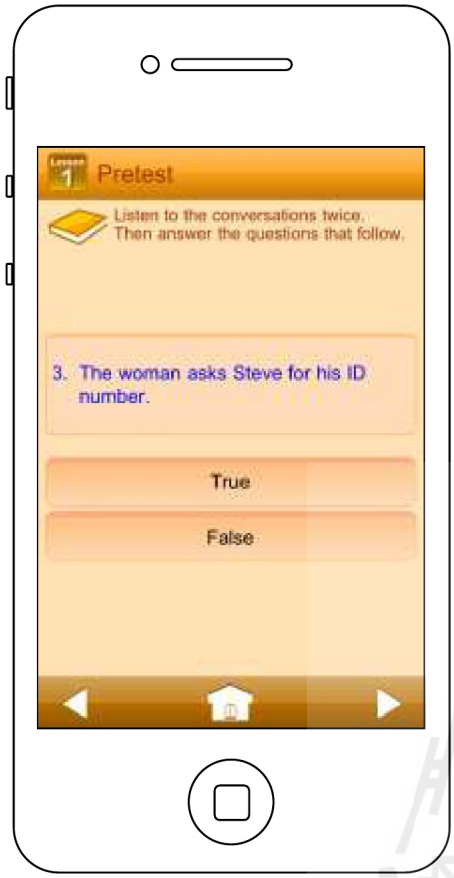

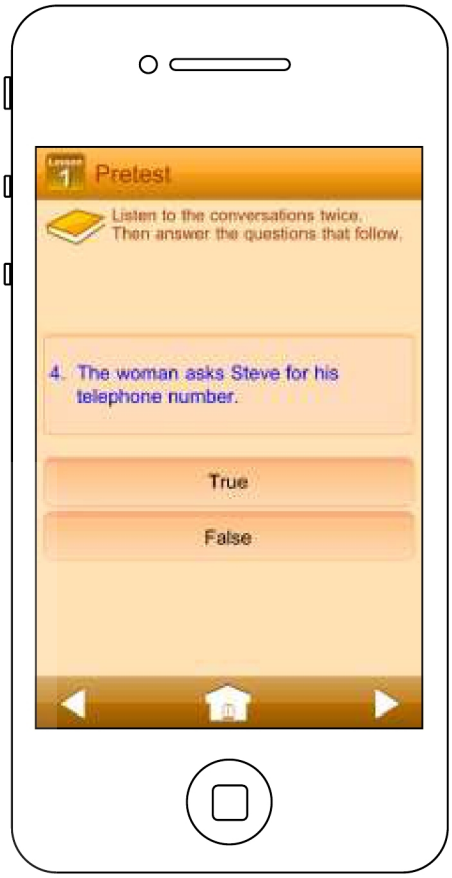

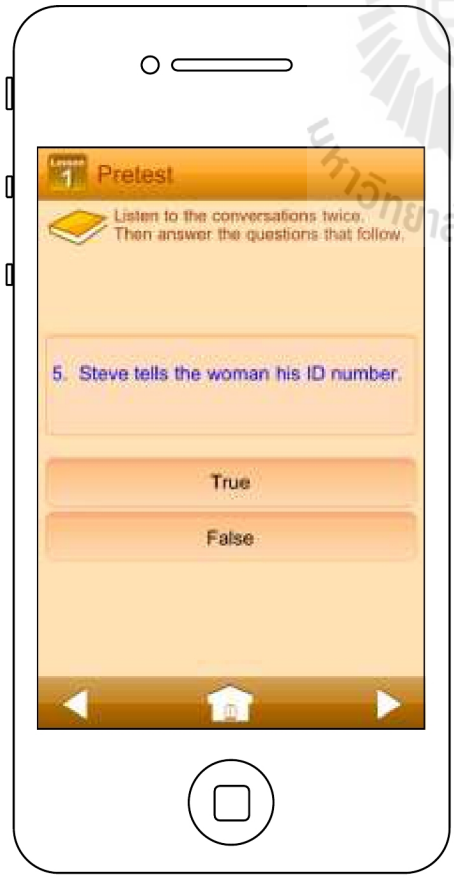

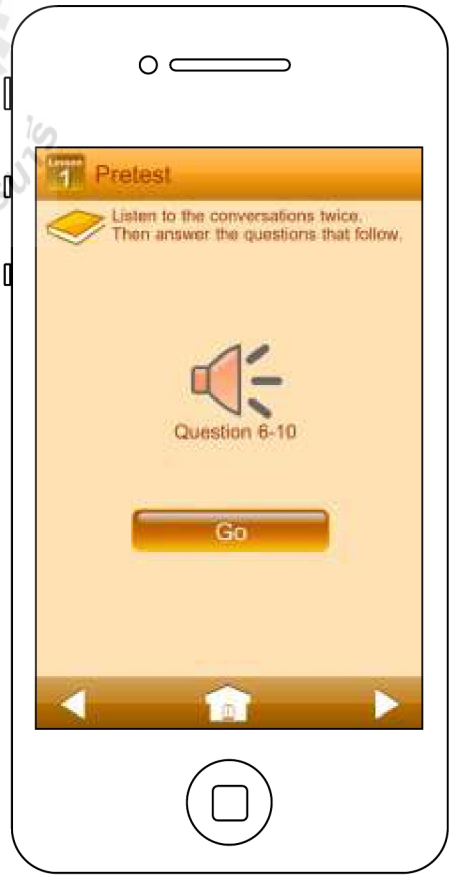

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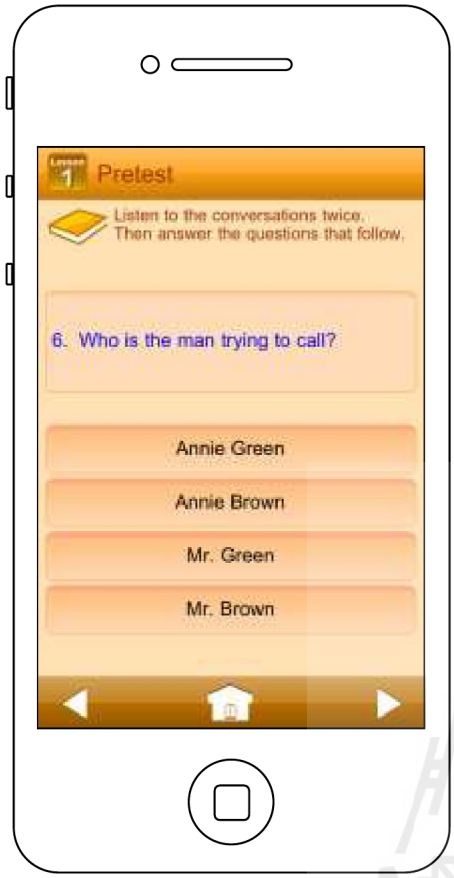

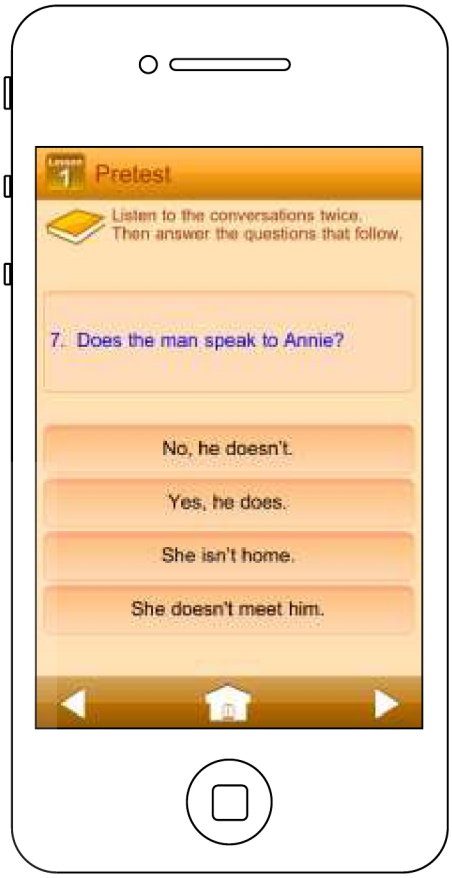

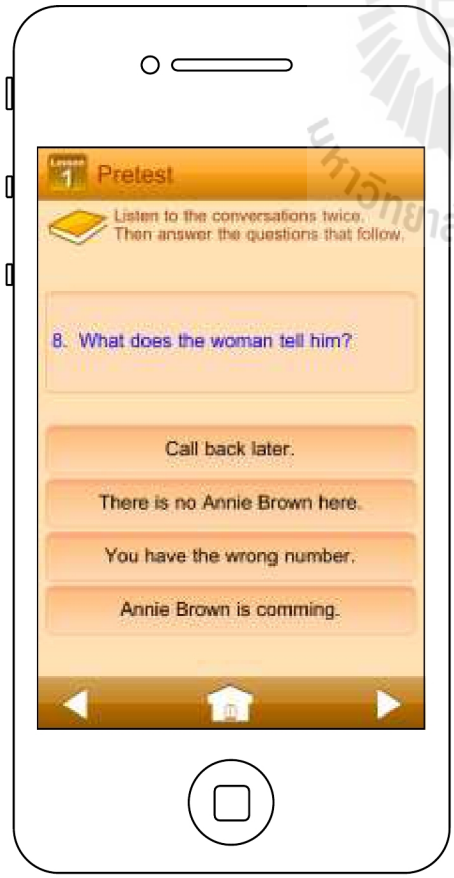

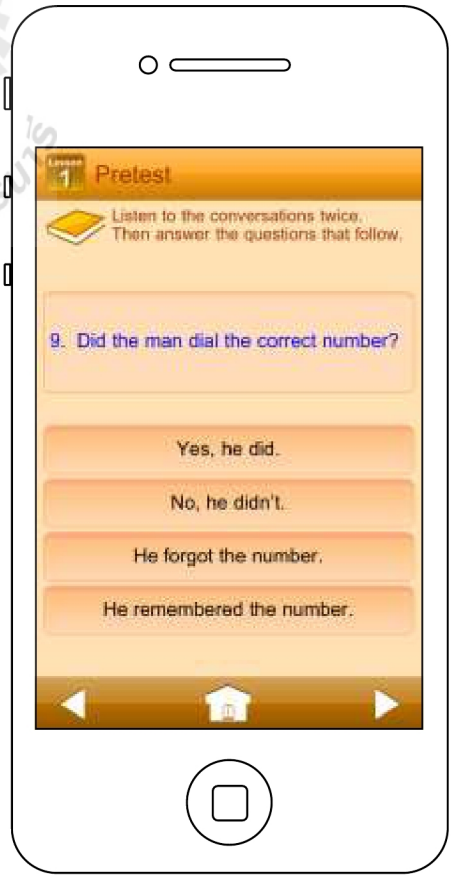

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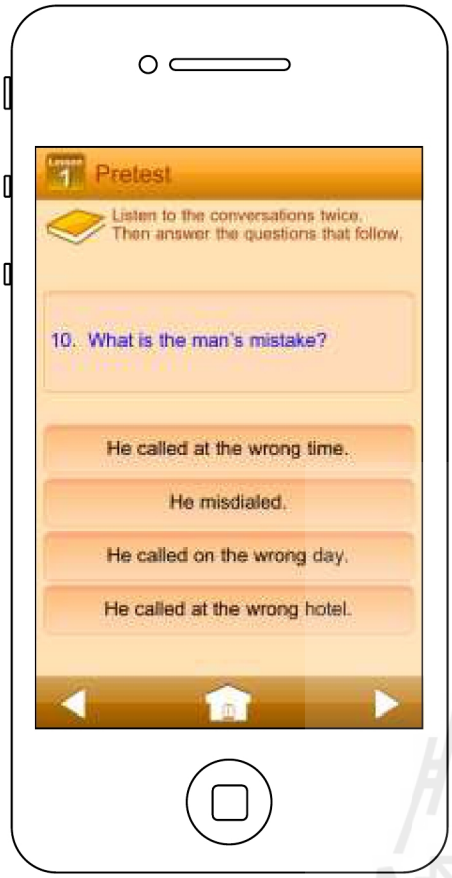

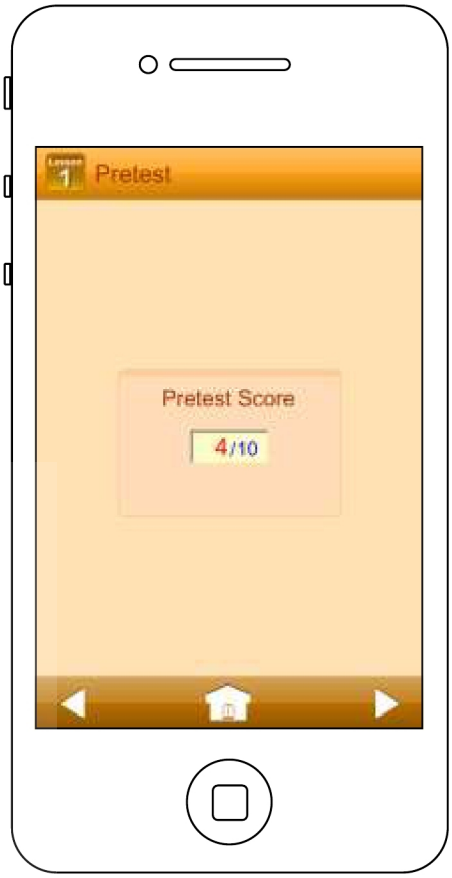

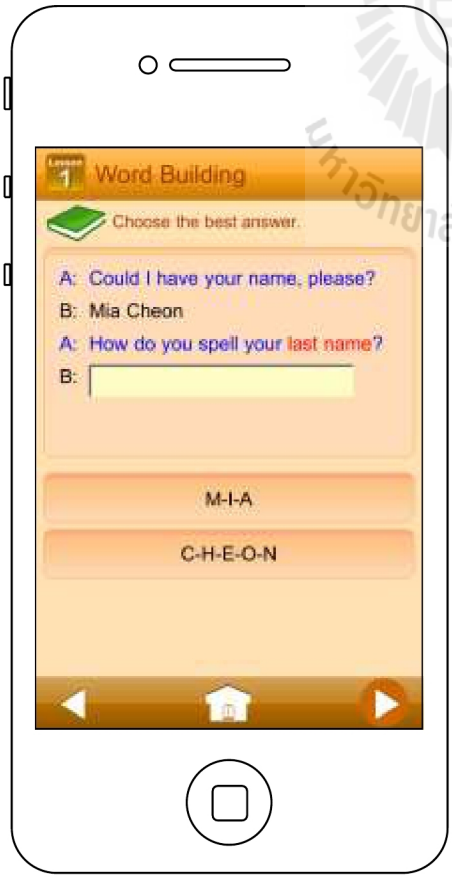

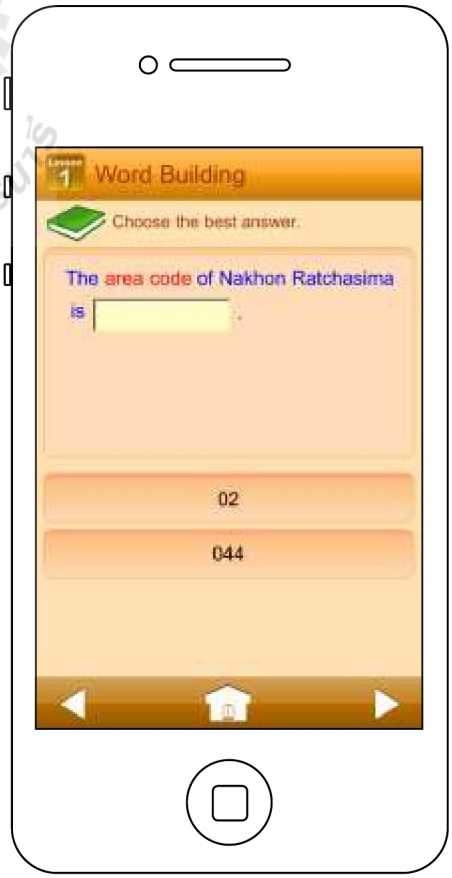

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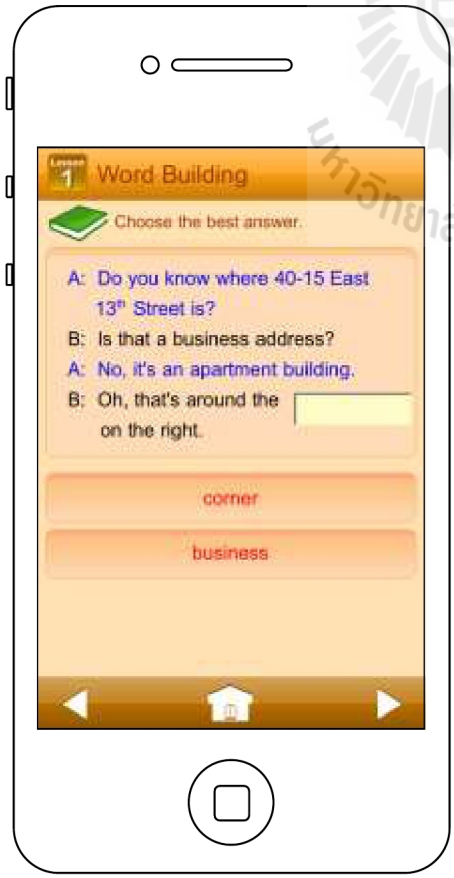
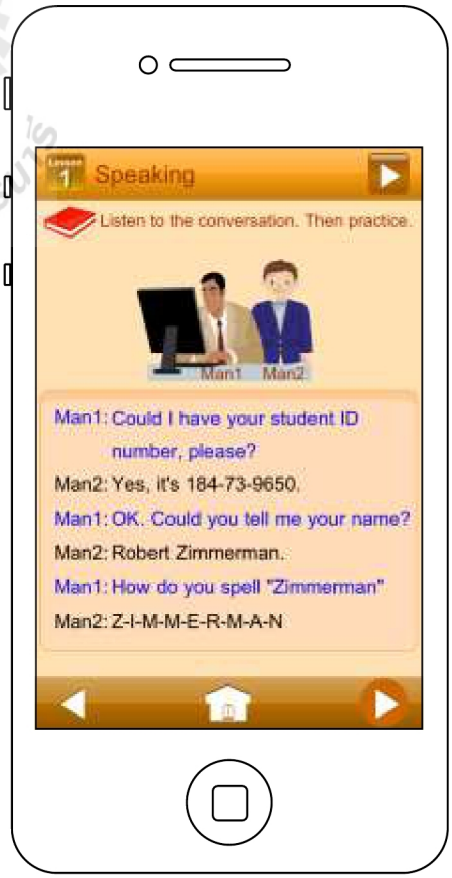
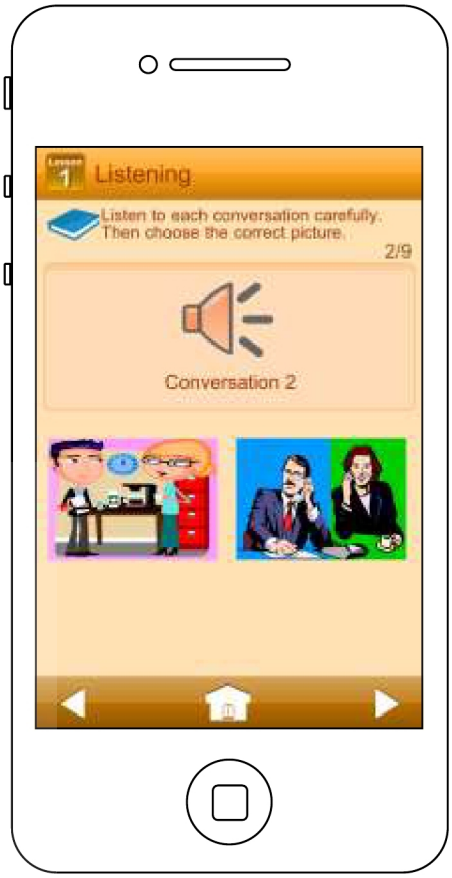
Word Building
Choose the best answer.
A: You have the wrong number.
B: Oh, sorry. I .
misdialed
misunderstood

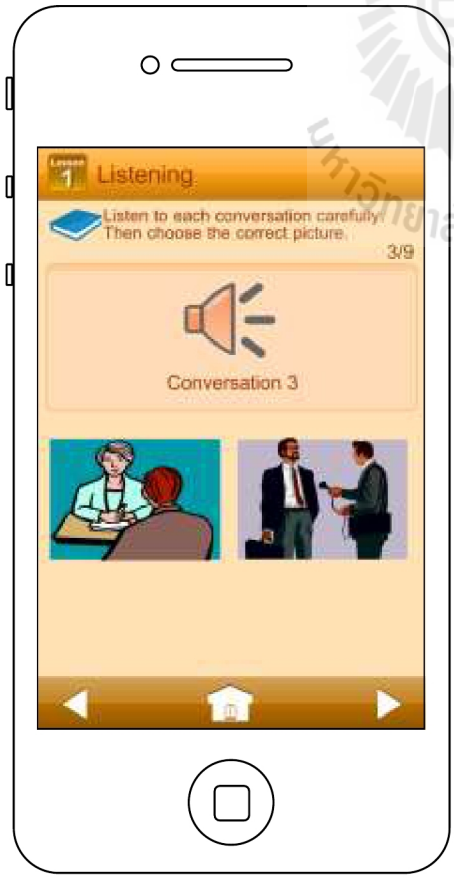

Word Building
Choose the best answer.
A: Could you tell me your social security number?
B: .
096-82-8489
667/6


Word Building
Choose the best answer.
A: Do you know where 40-15 East 13th Street is?
B: Is that a business address?
A: No, it's an apartment building.
B: Oh, that's around the on the right.
corner
business


Speaking
Listen to the conversation. Then practice.
Man1
Man2
Man1: Could I have your student ID number, please?
Man2: Yes, it's 184-73-9650.
Man1: OK. Could you tell me your name?
Man2: Robert Zimmerman.
Man1: How do you spell "Zimmerman"
Man2: Z-I-M-M-E-R-M-A-N









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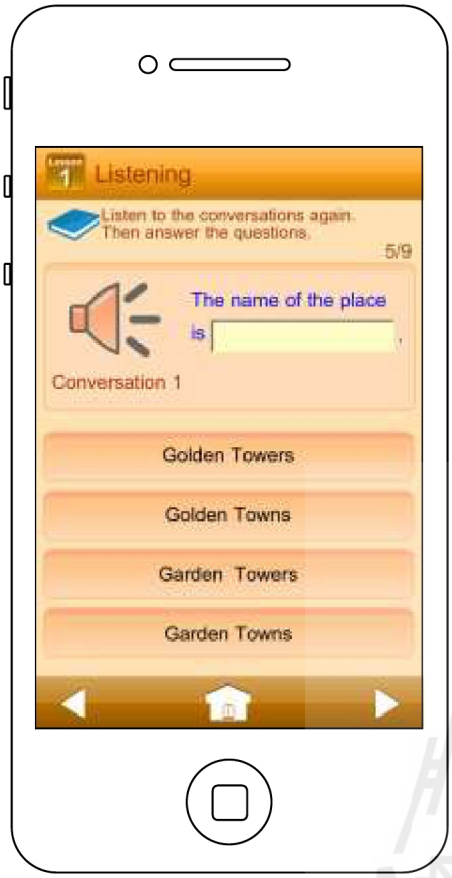



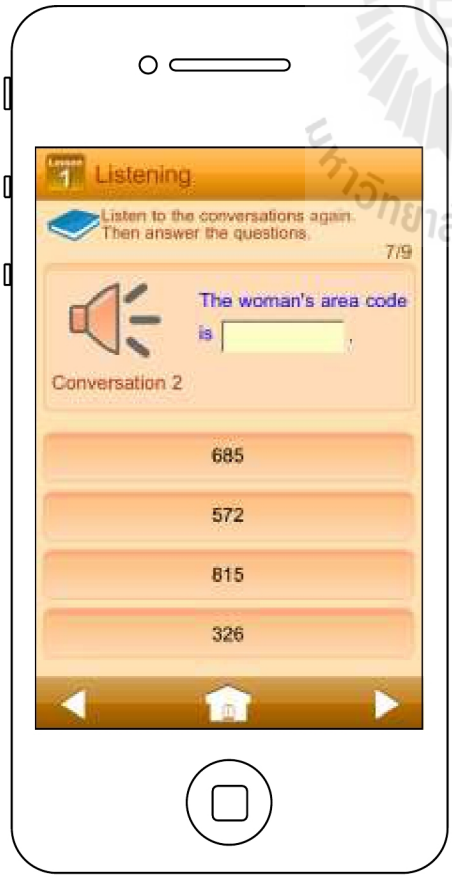



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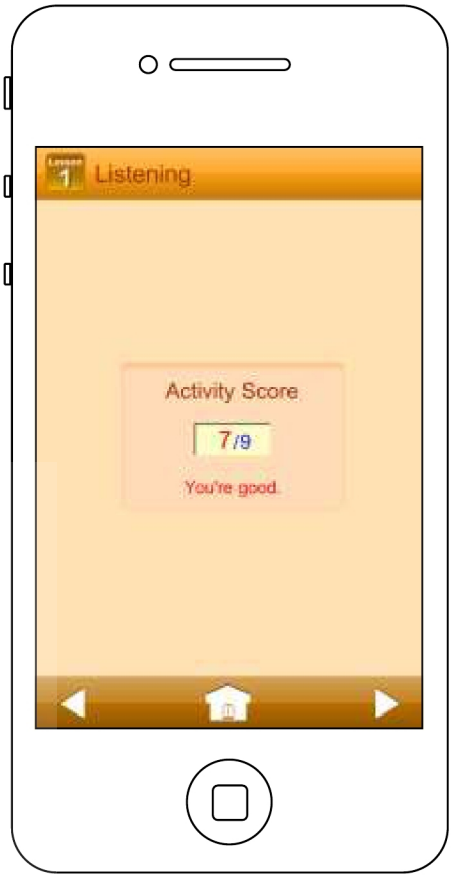
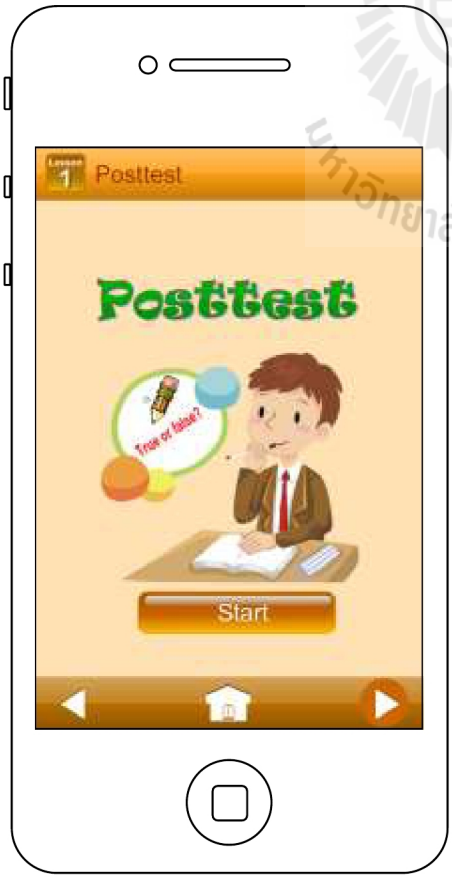
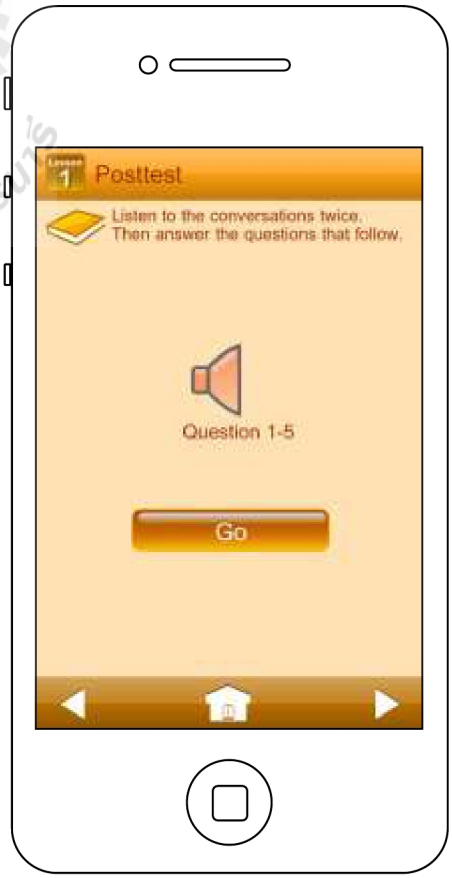
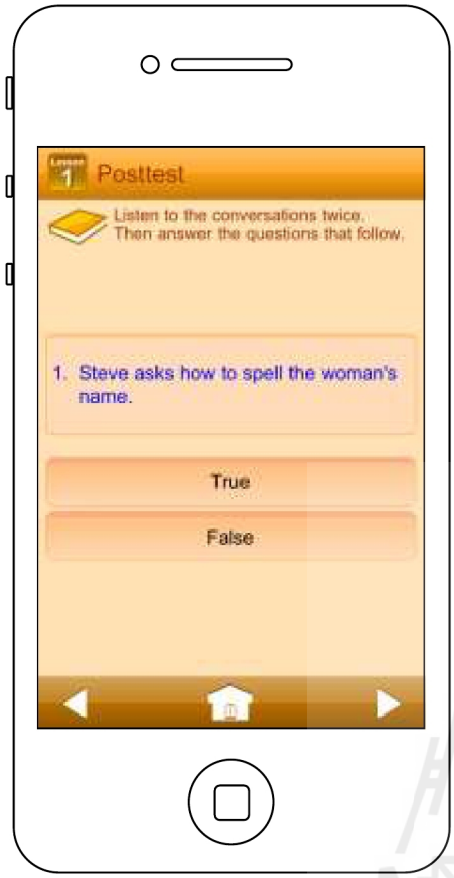
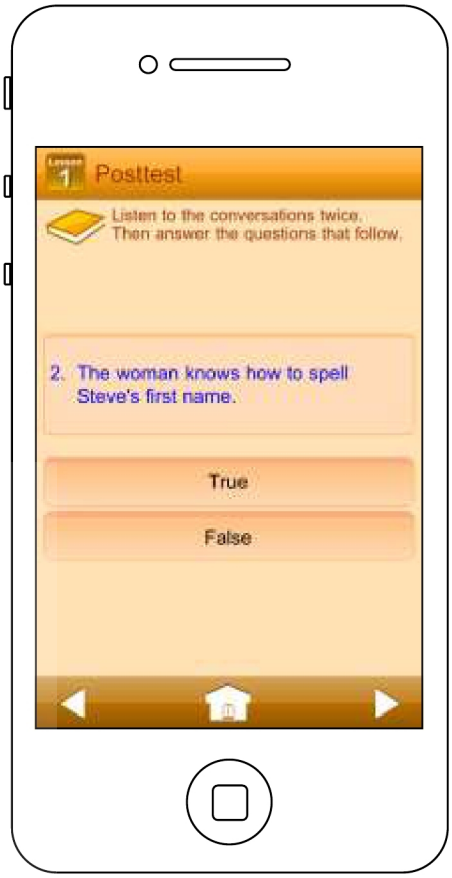
Listening
Listen to the conversations again.
Then answer the questions.
9/9
The girl's social securiy
number is
Conversation 3
096-82-8489
169-28-4898
496-37-8582
928-58-4886

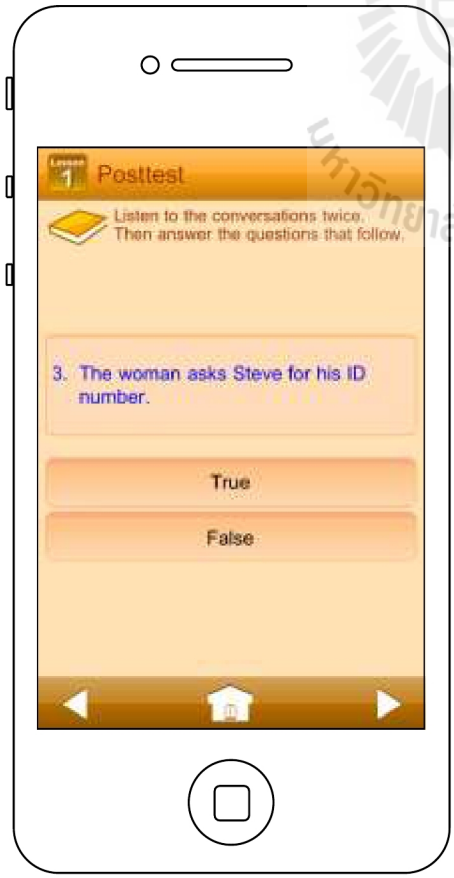

Listening
Activity Score
7/9
You're good.

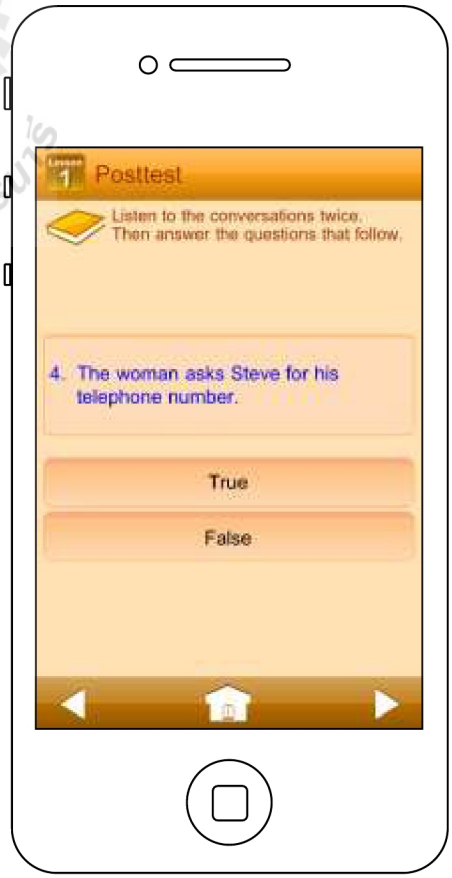

Posttest
Posttest
Start


Posttest
Listen to the conversations twice.
Then answer the questions that follow.
Question 1-5
Go









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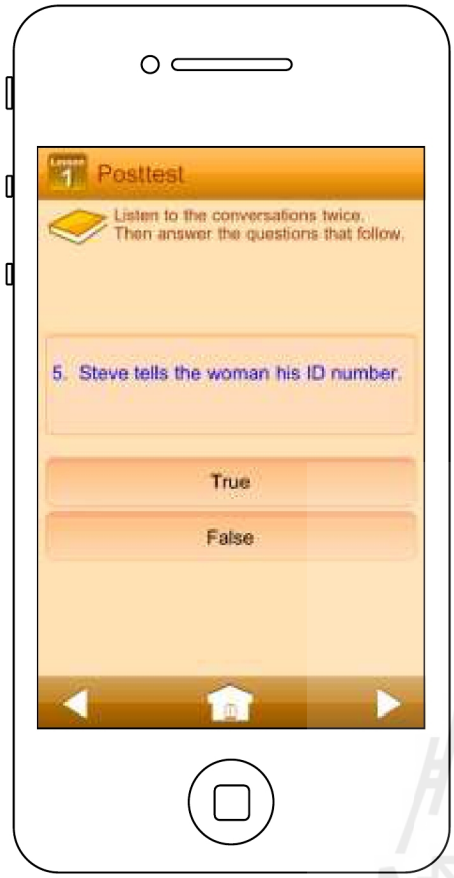

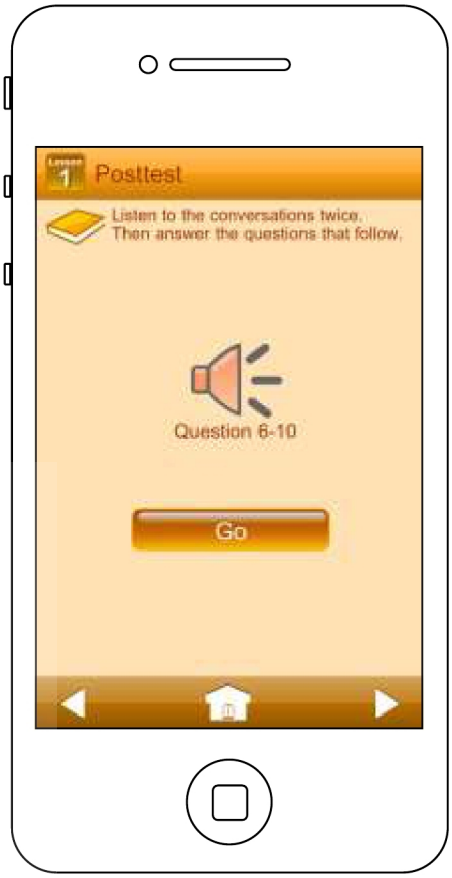

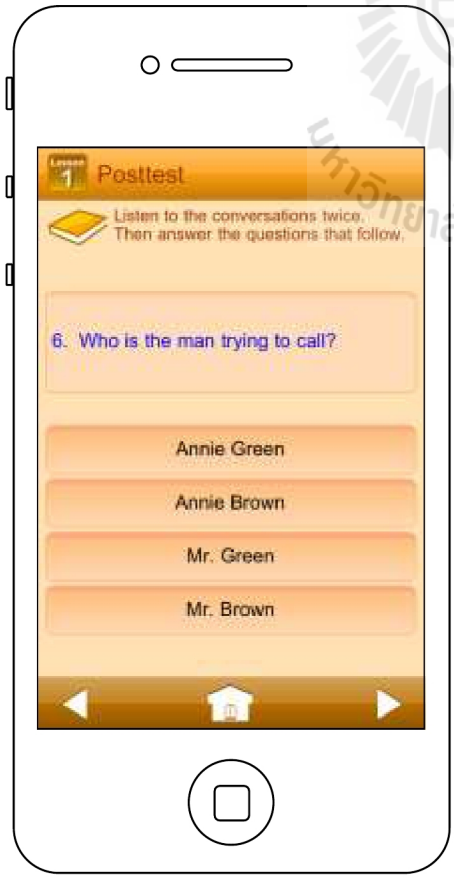

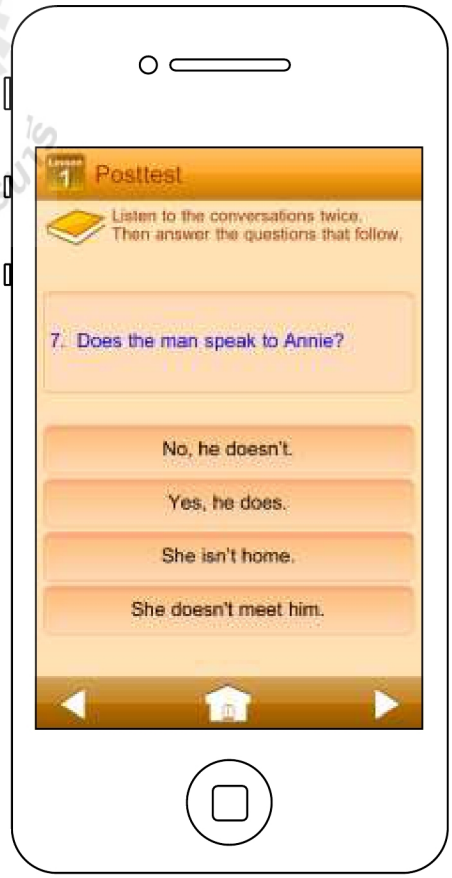

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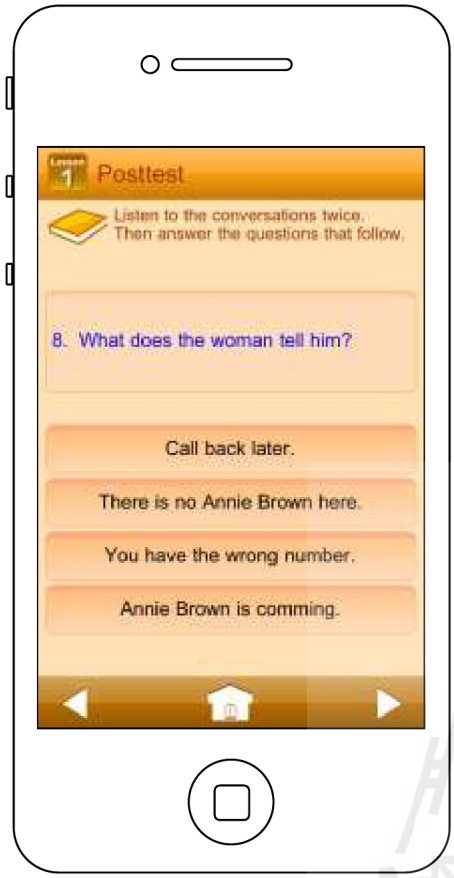

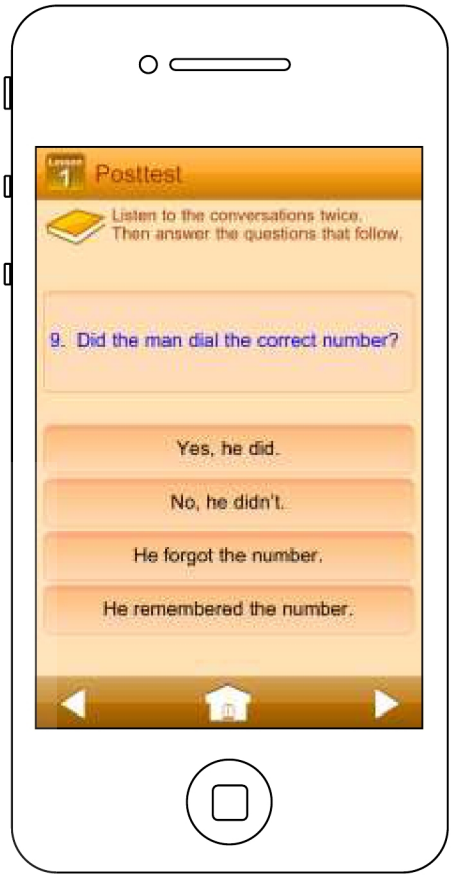

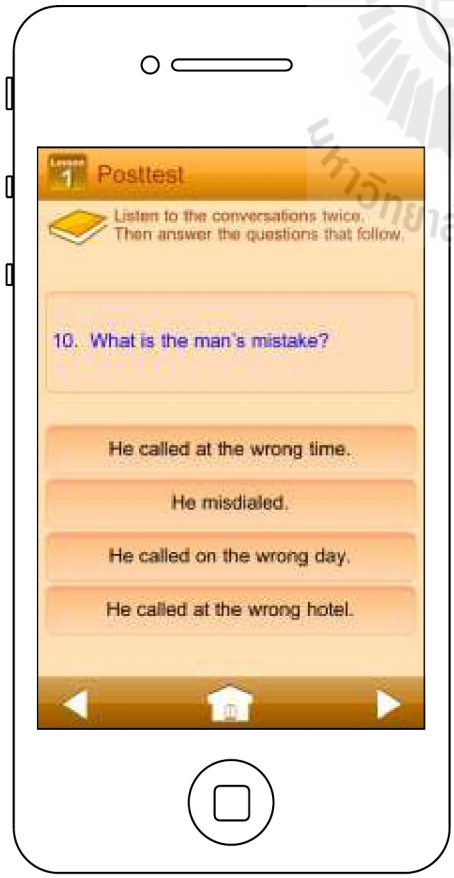

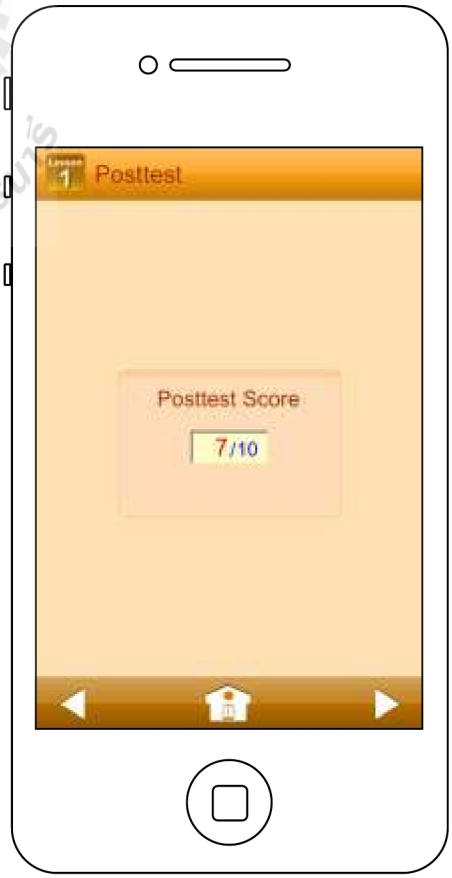

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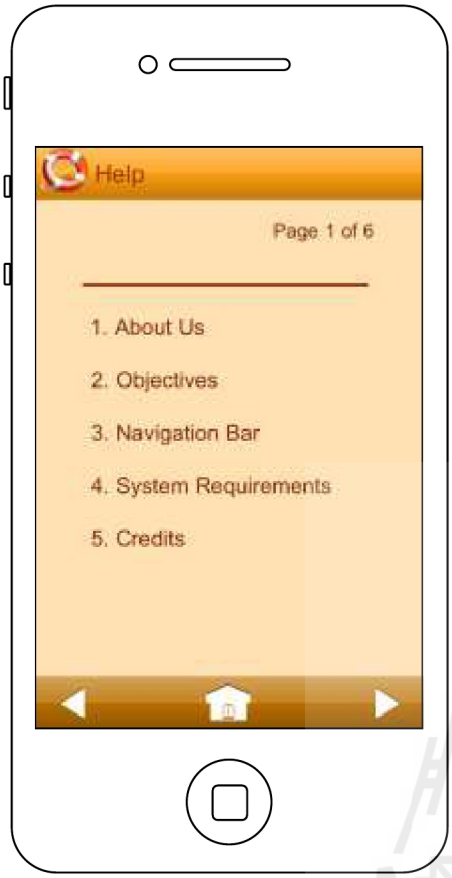

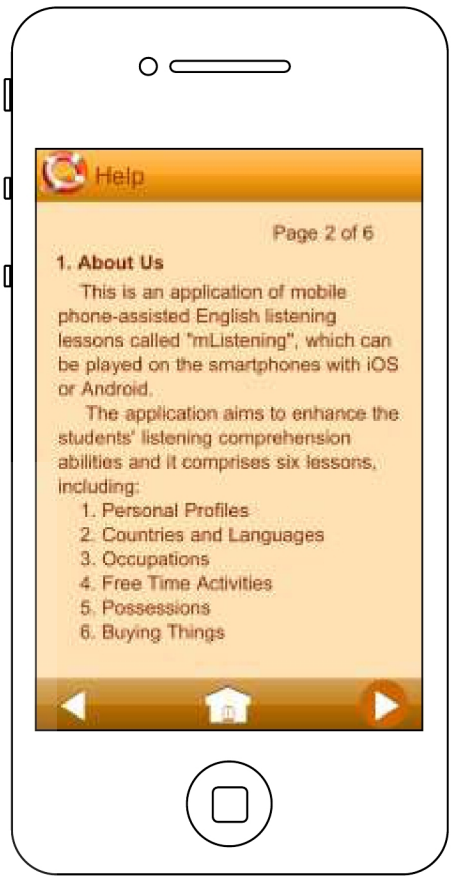

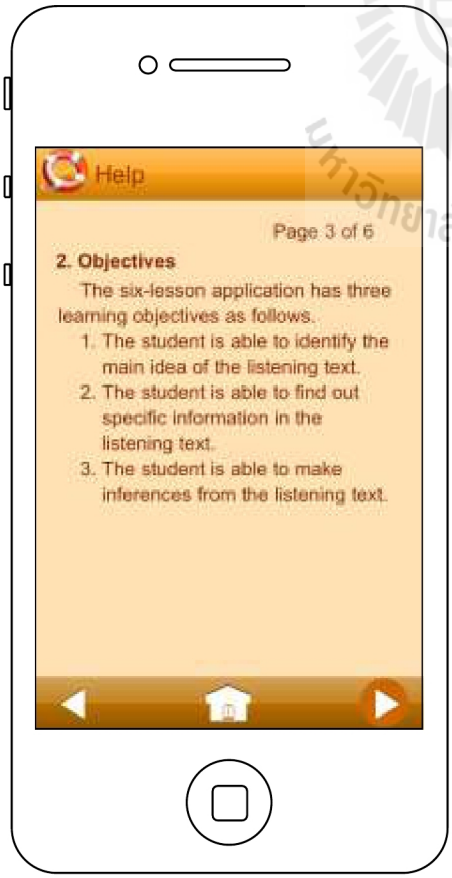

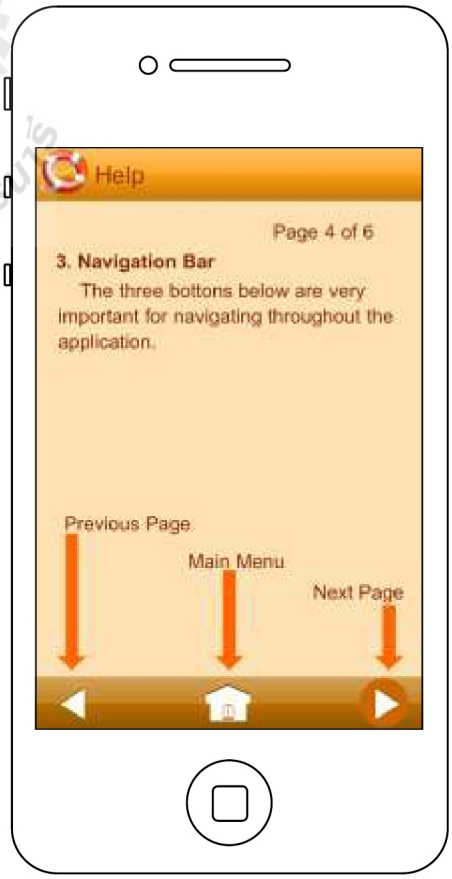

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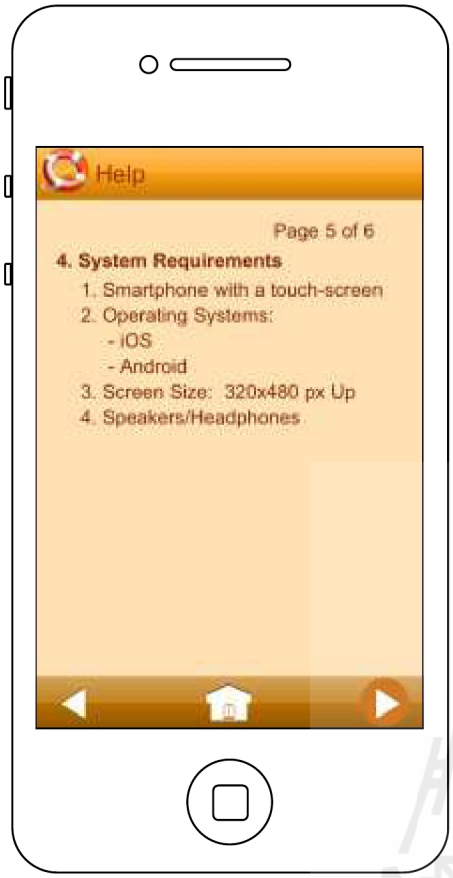

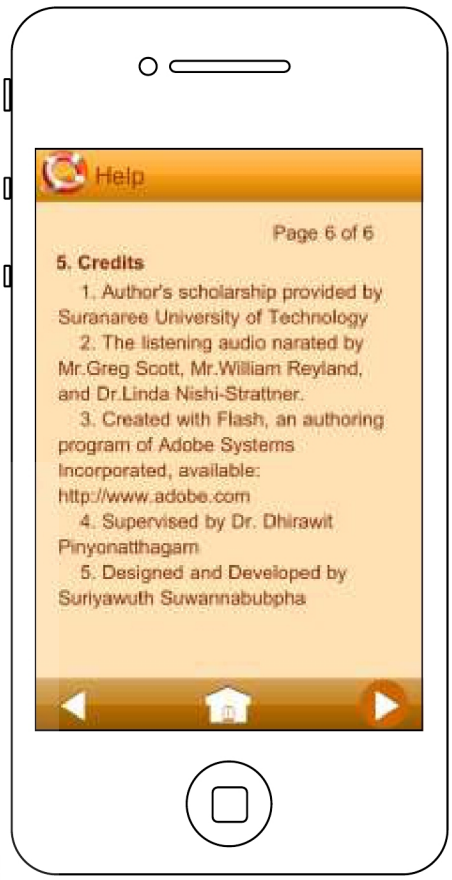

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CHAPTER 6

CONCLUSIONS, DISCUSSIONS, AND RECCOMMENDATIONS

This chapter summarizes the findings of the present study, discusses the interesting issues from the findings, and provides recommendations for further research. In the section of conclusions , the purposes of the study, population, instrumentation, procedures, and results of the study are presented and followed by the discussions. Then the recommendations are made in the final section.

6.1 Conclusions

The present study has been conducted in order to develop a model for producing a mobile phone-assisted English listening application and examine the effectiveness of the developed model for producing a mobile phone-assisted English listening application by assessing (1) the efficiency of the mobile phone-assisted English listening application—produced in accordance with the developed model, (2) the student's learning achievement after learning through the mobile phone-assisted English listening application, and (3) the students' opinions towards learning through the mobile phone-assisted English listening application.

The population was 18 third-year English program students purposively selected from the Faculty of Humanities at Mahachulalongkornrajayidyalaya

University Nakhon Ratchasima Campus. These students enrolled on Listening and Speaking I course in the first semester of the Academic Year 2011.

The research procedures were divided into two main parts: (1) the development of the model for producing a mobile phone-assisted English listening application and (2) the examination of the model effectiveness . In the first part, the model for producing a mobile phone-assisted English listening application was created in accordance with the developed conceptual framework and the results of students' need analysis and examined by the experts. Then the model was used as a guideline for producing a mobile phone-assisted English listening (MAEL) application. When the MAEL application was constructed, it was tried out to examine the efficiency based on the efficiency criterion determined at E_1/E_2 = 80/80. The application was tried out with three students in the individual testing, six students in the small group testing, and nineteen students in the field testing. The results from the three tryouts of the MAEL application were also utilized to make revisions of the model. In the second part, there was an examination of the effectiveness of the model by assessing the efficiency of the MAEL application after the trial run, comparing student's learning achievement, and exploring students' opinions towards learning through the MAEL application. In the trial run or experiment, the students took a pre-achievement test before learning through the MAEL application. Then they learned through the MAEL application. After that, the students took a post-achievement test and responded to the questionnaire and semi-structured interview.

The research instruments consisted of the mobile phone-assisted English listening application, an achievement test, a questionnaire, and a semi-structured interview. The data obtained from different instruments were analyzed in two main

ways; quantitative data analysis and qualitative data analysis. The frequency, percentage, mean, standard deviation (S.D.) and dependent sample t-test were used to analyze the quantitative data and the content analysis was used to analyze the qualitative data.

The results of the research can be summarized as follows.

1. The components of the model for producing a mobile phone-assisted English listening application consist of four main stages: (1) planning, (2) design, (3) development, and (4) validation.

2. The developed model for producing a mobile phone-assisted English listening application was effective, since it could be seen from the following:

2.1 The efficiency of the mobile phone-assisted English listening application produced in accordance with the developed model was 82.40/80.93, which corresponded to the efficiency criterion determined at $E_1/E_2 = 80/80$.

2.2 The students' learning achievement after learning through the mobile phone-assisted English listening application was significantly higher at the .05 level.

2.3 The students' opinions towards learning through the mobile phone-assisted English listening application were in the "good" level.

6.2 Discussions

Based on the research findings, the Suriyawuth Model consisting of four major stages (planning, design, development, and validation) including twenty-four logical steps was an effective way for producing a mobile phone-assisted English listening application due to the interesting issues discussed as follows.

Firstly, The efficiency of the mobile phone-assisted English listening application produced in accordance with the developed model was 82.40/80.93, which corresponded to the efficiency criterion determined at E_1/E_2 = 80/80. It was so because the developed model or Suriyawuth Model used as a guideline for producing a mobile phone-assisted English listening (MAEL) application comprised four stages: (1) planning, (2) design, (3) development, and (4) validation, including twenty-four logical steps. In the development stage, the MAEL application was completely developed in three tryouts: an individual testing, a small group testing, and a field testing. For each step, the researcher could find both good and bad points given by experts and students and the data obtained from each step were utilized to revise the MAEL application in order to develop an efficient application. Therefore, when the MAEL application was validated by the students of this study in the trial run, it was possible that the efficiency of the MAEL application corresponded to the efficiency criterion set at E_1/E_2 = 80/80.

In addition, from the efficiency of the MAEL application (E_1/E_2 = 82.40/80.93), it could be seen that the efficiency of the process (E_1 = 82.40) was higher than the efficiency of the outcomes (E_2 = 80.93). The reason might be that students were motivated to pay more attention to doing exercises aiming to practice learning. The MAEL application allowed students to do exercises and check answers immediately. It also allowed them to do listening exercises as much as they needed for getting more practices, so most students reviewed what they had learned and tried to do exercises again in order to achieve higher scores. Besides, it might be that the posttest was a kind of a delayed recall test which students did after they had

learnt the contents of each lesson. The posttests might be more difficult than

the exercises. Thus, the efficiency of the outcome (E_2) was lower than the efficiency of the process (E_1).

Secondly, the students' learning achievement after learning through the mobile phone-assisted English listening application was significantly higher at the .05 level. This might be due to the fact that the listening activities in the MAEL application were divided into pre-listening, listening, and post-listening. In the pre-listening, students were provided with the Word-Building, and Speaking activities which helped them to learn vocabulary and a language use related to the listening texts. This was to prepare students for listening to the texts and arouse their background knowledge in terms of English words, language use and usage, and contents concerning the texts they were going to listen. Thus, the MAEL application activated students' schematic knowledge and contextual knowledge, which helped the students better comprehend the listening texts (Grabe, 1991; Mendelsohn, 1998; Celce-Murcia and Olshtein, 2000; Jung, 2003). This finding corresponded to the study of Chen and others (2012) who reported that after the MALL activities, the students did better on the recall task.

In addition, it might be because the MAEL application promoted the practice of listening with various listening exercises providing immediate feedback and self-pacing and the students also had more chances to practice listening via the MAEL application in their own mobile phones outside of the classroom. This might help them to be more fluent in the listening skill and lead to better performance (Higgins and Johns, 1984; Price, 1991).

Finally, the students' opinions towards learning through the mobile phone-

assisted English listening application were in the “good” level. This was because the students enjoy practicing listening through the MAEL application that allowed them to know their learning progress by providing immediate feedback. This raised students’ interest and attempts to practice English listening as much as possible. The students also felt independent to use the MAEL application for practicing listening. They learned in the context that was free from anxiety and they could learn at their own pace and choose what they wanted to study in the application. In addition, learning though the MAEL application was convenient for the students, since the application was easy to use by touching the buttons on the mobile phone’s screen to control the lessons and the mobile phone could be carried for using the application anytime and anyplace the students needed. Thus, this learning atmosphere was good for creating a good view on language learning (Heathington & Alexander, 1994). This finding also corresponded to the study of Palalas (2011) who revealed that students expressed a high degree of satisfaction with the MALL component of the course.

In conclusion, Suriyawuth Model developed in this study was an effective way to produce a mobile phone-assisted English listening application for enhancing students listening comprehension abilities. This kind of the educational technology was an convenient tool that provided the appropriate conditions for the success of English language learning and increased students’ motivation to learn English as well.

6.3 Recommendations

6.3.1 Pedagogical Implications

The pedagogical implications based on this research may be given as

follows.

1) The model, Suriyawuth Model, should be used as a guideline for developing other mobile assisted language learning (MALL) materials by the teachers of English or other subjects.

2) There should be the templates of MALL applications developed for the teachers of English or other subjects who have limited abilities about using an authoring program and writing computer codes. The templates should be easy to be edited and published as a MALL application for smartphones spending a short period of time, so that the teachers can create a lot of MALL materials that correspond to students' needs.

3) In learning through the MALL application via a touch-screen smartphone, students need to have basic skills such as touching, tapping to drag, and swiping. These skills enhance learning through the application and make the learning more convenient.

4) The contents of MALL materials should be various and have a variety of activity types such as dragging to match, typing short answers, tapping true/ false options, and so on. In addition, the contents should be divided into levels (such as level 1, level 2, level 3, etc.). Each level has different difficulty in order to meet the needs of students who have individual differences in terms of the language proficiency, learning style, and pace of learning.

5) Help options such as glossary, slow/fast speed of movie control, audio scripts, and answer keys should be provided in the MALL application in order to facilitate students' language learning.

6.3.2 Recommendations for Further Research

According to the results of the present study, the following recommendations are proposed for further research.

1) The development of the model for producing other mobile assisted language learning (MALL) materials should be carried out.

2) Similar research should be conducted with other groups of students who may have differences in terms of language proficiency, language problems, and language needs.

3) Similar research should be conducted with other mobile devices, especially the tablets which have bigger screen size than the mobile phones. This may be more convenient for the students to use the MALL application.

4) A process-oriented study should be conducted to investigate how the MALL materials assist students to learn a language according the principles of second language acquisition (SLA).

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มหาวิทยาลัยเทคโนโลยีสุรนารี

APPENDICES

มหาวิทยาลัยเทคโนโลยีสุรนารี

Appendix A

Results of Tryouts

The Individual Testing of the Mobile Phone-Assisted English Listening Application

Student	Pretest (60)	Exercises (95)	Posttest (60)
1	25	65	42
2	26	72	45
3	30	85	48
Mean	27.00	74.00	45.00
S.D.	2.65	10.15	3.00
%	45.00	77.89	75.00
E_1/E_2		77.89/75.00	

The Small Group Testing of The Mobile Phone-Assisted English Listening Application

Student	Pretest (60)	Exercises (95)	Posttest (60)
1	31	80	52
2	22	75	50
3	26	72	47
4	24	79	42
5	29	74	46
6	27	68	39
Mean	26.50	74.67	46.00
S.D.	3.27	4.46	4.86
%	44.17	78.60	76.67
E_1/E_2		78.60/76.67	

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The Field Testing of The Mobile Phone-Assisted English Listening Application

Student	Pretest (60)	Exercises (95)	Posttest (60)
1	29	80	47
2	30	72	49
3	26	81	53
4	29	76	47
5	32	79	52
6	30	76	46
7	25	82	48
8	24	83	49
9	26	76	46
10	25	69	51
11	31	87	49
12	25	71	53
13	31	63	48
14	27	84	50
15	32	76	49
16	30	81	46
17	28	87	48

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Student	Pretest (60)	Exercises (95)	Posttest (60)
18	25	79	51
19	29	81	42
Mean	28.11	78.05	48.63
S.D.	2.64	6.14	2.73
%	46.84	82.16	81.05
E_1/E_2		82.16/81.05	

มหาวิทยาลัยเทคโนโลยีสุรนารี

Appendix B

The Quality of Tests in the Mobile Phone-Assisted English Listening Application

Item Objective Congruence (IOC) of Tests in the Mobile Phone-Assisted English Listening Application

Lesson 1

Item	Expert			Total	IOC
	1	2	3		
1	1	1	1	3	1.00
2	1	1	1	3	1.00
3	1	1	1	3	1.00
4	1	1	1	3	1.00
5	1	1	1	3	1.00
6	1	1	1	3	1.00
7	1	1	1	3	1.00
8	1	1	1	3	1.00
9	1	1	1	3	1.00

Item	Expert			Total	IOC
	1	2	3		
10	1	1	1	3	1.00

Lesson 2

Item	Expert			Total	IOC
	1	2	3		
1	1	1	1	3	1.00
2	1	1	1	3	1.00
3	1	1	1	3	1.00
4	1	1	1	3	1.00
5	1	1	1	3	1.00
6	1	0	1	2	0.67
7	1	1	1	3	1.00
8	1	1	1	3	1.00
9	1	1	1	3	1.00
10	1	1	1	3	1.00

มหาวิทยาลัยเทคโนโลยีสุรนารี

Lesson 3

Item	Expert			Total	IOC
	1	2	3		
1	1	1	1	3	1.00
2	1	1	1	3	1.00
3	1	1	1	3	1.00
4	1	1	1	3	1.00
5	1	1	1	3	1.00
6	1	1	1	3	1.00
7	1	1	1	3	1.00
8	1	1	1	3	1.00
9	0	1	1	2	0.67
10	1	1	1	3	1.00

มหาวิทยาลัยเทคโนโลยีสุรนารี

Lesson 4

Item	Expert			Total	IOC
	1	2	3		
1	1	1	1	3	1.00
2	1	1	1	3	1.00
3	1	1	1	3	1.00
4	1	1	1	3	1.00
5	1	1	1	3	1.00
6	1	1	1	3	1.00
7	1	1	1	3	1.00
8	1	1	1	3	1.00
9	1	1	1	3	1.00
10	1	1	1	3	1.00

มหาวิทยาลัยเทคโนโลยีสุรนารี

Lesson 5

Item	Expert			Total	IOC
	1	2	3		
1	1	1	1	3	1.00
2	1	1	1	3	1.00
3	1	1	1	3	1.00
4	1	1	1	3	1.00
5	1	1	1	3	1.00
6	1	1	1	3	1.00
7	1	1	1	3	1.00
8	1	1	1	3	1.00
9	1	1	1	3	1.00
10	1	1	1	3	1.00

มหาวิทยาลัยเทคโนโลยีสุรนารี

Lesson 6

Item	Expert			Total	IOC
	1	2	3		
1	1	1	1	3	1.00
2	1	1	1	3	1.00
3	1	1	1	3	1.00
4	1	1	1	3	1.00
5	1	1	1	3	1.00
6	1	1	1	3	1.00
7	1	1	1	3	1.00
8	1	1	1	3	1.00
9	1	1	1	3	1.00
10	1	1	1	3	1.00

มหาวิทยาลัยเทคโนโลยีสุรนารี

Difficulty Index, Discrimination Power, and Reliability of Tests in the Mobile Phone-Assisted English Listening Application

Lesson 1

Item	Difficulty Index (p)	Discrimination Power (r)	Reliability (r_{tt})
1	0.23	0.25	0.81
2	0.68	0.25	
3	0.3	0.4	
4	0.35	0.4	
5	0.33	0.35	
6	0.5	0.5	
7	0.23	0.25	
8	0.48	0.55	
9	0.23	0.25	
10	0.68	0.25	

มหาวิทยาลัยเทคโนโลยีสุรนารี

Lesson 2

Item	Difficulty Index (p)	Discrimination Power (r)	Reliability (r_{tt})
1	0.58	0.25	0.82
2	0.30	0.40	
3	0.65	0.30	
4	0.23	0.25	
5	0.63	0.25	
6	0.30	0.30	
7	0.58	0.25	
8	0.30	0.40	
9	0.65	0.30	
10	0.20	0.30	

มหาวิทยาลัยเทคโนโลยีสุรนารี

Lesson 3

Item	Difficulty Index (p)	Discrimination Power (r)	Reliability (r_{tt})
1	0.60	0.20	0.85
2	0.30	0.20	
3	0.50	0.50	
4	0.23	0.25	
5	0.63	0.25	
6	0.48	0.55	
7	0.35	0.60	
8	0.38	0.75	
9	0.45	0.70	
10	0.50	0.30	

มหาวิทยาลัยเทคโนโลยีสุรนารี

Lesson 4

Item	Difficulty Index (p)	Discrimination Power (r)	Reliability (r_{tt})
1	0.38	0.75	0.83
2	0.45	0.70	
3	0.50	0.30	
4	0.35	0.60	
5	0.45	0.20	
6	0.35	0.60	
7	0.45	0.20	
8	0.50	0.30	
9	0.43	0.25	
10	0.55	0.50	

มหาวิทยาลัยเทคโนโลยีสุรนารี

Lesson 5

Item	Difficulty Index (p)	Discrimination Power (r)	Reliability (r_{tt})
1	0.43	0.45	0.88
2	0.48	0.45	
3	0.50	0.50	
4	0.50	0.30	
5	0.60	0.40	
6	0.43	0.45	
7	0.55	0.60	
8	0.40	0.30	
9	0.55	0.50	
10	0.50	0.50	

มหาวิทยาลัยเทคโนโลยีสุรนารี

Lesson 6

Item	Difficulty Index (p)	Discrimination Power (r)	Reliability (r_{tt})
1	0.50	0.50	0.85
2	0.50	0.30	
3	0.60	0.40	
4	0.43	0.45	
5	0.55	0.60	
6	0.40	0.30	
7	0.60	0.20	
8	0.35	0.40	
9	0.35	0.40	
10	0.43	0.35	

มหาวิทยาลัยเทคโนโลยีสุรนารี

Appendix C

The Quality of Achievement Test

Item Objective Congruence (IOC) of Achievement Test

Item	Expert			Total	IOC
	1	2	3		
1	1	1	1	3	1.00
2	1	1	0	2	0.67
3	1	1	1	3	1.00
4	1	1	1	3	1.00
5	1	1	1	3	1.00
6	1	1	1	3	1.00
7	1	1	1	3	1.00
8	1	1	1	3	1.00
9	1	1	1	3	1.00
10	1	1	1	3	1.00
11	1	1	1	3	1.00
12	1	1	1	3	1.00

มหาวิทยาลัยเทคโนโลยีสุรนารี

Item	Expert			Total	IOC
	1	2	3		
13	1	1	0	2	0.67
14	1	1	1	3	1.00
15	1	1	1	3	1.00
16	1	1	1	3	1.00
17	1	1	1	3	1.00
18	1	1	1	3	1.00
19	1	1	1	3	1.00
20	1	1	1	3	1.00

มหาวิทยาลัยเทคโนโลยีสุรนารี

Difficulty Index, Discrimination Power, and Reliability of Achievement Test

Item	Difficulty Index (p)	Discrimination Power (r)	Reliability (r_{tt})
1	0.48	0.30	0.83
2	0.35	0.20	
3	0.35	0.85	
4	0.50	0.60	
5	0.53	0.65	
6	0.38	0.65	
7	0.48	0.65	
8	0.50	0.65	
9	0.55	0.50	
10	0.50	0.50	
11	0.35	0.85	
12	0.48	0.30	
13	0.35	0.20	
14	0.35	0.85	
15	0.50	0.60	
16	0.53	0.65	
17	0.65	0.65	

มหาวิทยาลัยเทคโนโลยีสุรนารี

Item	Difficulty Index (p)	Discrimination Power (r)	Reliability (r_{tt})
18	0.48	0.65	
19	0.50	0.65	
20	0.50	0.65	

มหาวิทยาลัยเทคโนโลยีสุรนารี

Appendix D

The Quality of Questionnaire

Item Objective Congruence (IOC) of Questionnaire

Item	Expert			Total	IOC
	1	2	3		
1	1	1	1	3	1.00
2	1	1	1	3	1.00
3	1	1	1	3	1.00
4	1	1	1	3	1.00
5	1	1	1	3	1.00
6	1	1	1	3	1.00
7	1	1	1	3	1.00
8	1	1	1	3	1.00
9	1	1	1	3	1.00
10	1	1	1	3	1.00
11	1	1	1	3	1.00
12	1	1	1	3	1.00

มหาวิทยาลัยเทคโนโลยีสุรนารี

Item	Expert			Total	IOC
	1	2	3		
13	1	1	1	3	1.00

มหาวิทยาลัยเทคโนโลยีสุรนารี

Discrimination Power and Reliability of Questionnaire

Item	Discrimination Power (r)	Reliability (r_{tt})
1	0.65	Cronback's Alpha Correlation
2	0.85	Number of Cases = 19
3	0.50	Number of Items = 13
4	0.38	Alpha = 0.82
5	0.65	
6	0.50	
7	0.85	
8	0.65	
9	0.30	
10	0.65	
11	0.85	
12	0.65	
13	0.85	

มหาวิทยาลัยเทคโนโลยีสุรนารี

Appendix E

Item Objective Congruence (IOC) of the Guided Questions for Semi-Structured Interview

Item	Expert			Total	IOC
	1	2	3		
1	1	1	1	3	1.00
2	1	1	1	3	1.00
3	1	1	1	3	1.00
4	1	1	1	3	1.00
5	1	1	1	3	1.00

มหาวิทยาลัยเทคโนโลยีสุรนารี

Appendix F

Students' Scores

Student	Pre-achievement (20)	Post-achievement (20)	Pretests (60)	Exercises (95)	Posttests (60)
1	9	13	31	90	48
2	10	18	28	85	52
3	7	15	32	82	51
4	8	14	35	86	50
5	6	16	29	74	49
6	7	15	25	78	50
7	9	12	24	75	53
8	11	18	26	72	47
9	9	16	24	82	50
10	8	15	27	70	49
11	7	14	34	68	46
12	9	18	26	65	50
13	12	19	34	67	45
14	6	14	25	83	46
15	9	15	35	89	52

มหาวิทยาลัยเทคโนโลยีสุรนารี

Student	Pre-achievement (20)	Post-achievement (20)	Pretests (60)	Exercises (95)	Posttests (60)
16	8	16	29	76	46
17	10	17	34	85	47
18	7	14	27	82	43
Mean	8.44	15.50	29.17	78.28	48.56
S.D.	1.65	1.92	3.97	7.74	2.73
%	42.22	77.50	48.61	82.40	80.93

มหาวิทยาลัยเทคโนโลยีสุรนารี

Appendix G

List of Experts

Name	Position	What to be Examined
1. Prof. Dr. Chaiyong Brahmawong	Chief Technology Officer in the College of Internet Distance Education, Assumption University, Bangkok	- Suriyawuth Model - MAEL Application
2. Assoc. Prof. Dr. Kanit Khaimook	A lecturer at Suranaree University of Technology, Nakhon Ratchasima	- MAEL Application - Storyboards - Achievement Test - Questionnaires
3. Dr. Sarit Srikhao	A lecturer at Suranaree University of Technology, Nakhon Ratchasima	- Suriyawuth Model - Conceptual Framework
4. Dr. Suksan Suppasetseree	A lecturer at Suranaree University of Technology, Nakhon Ratchasima	- Suriyawuth Model

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Name	Position	What to be Examined
4. Dr. Dhirawit Pinyonatthagarn	A lecturer at Suranaree University of Technology, Nakhon Ratchasima	- Suriyawuth Model - MAEL Application - Storyboards - Conceptual Framework - Achievement Test - Questionnaires - Guided Questions for Semi-structured Interview - Lesson Plan
6. Asst. Prof. Dr. Surapong Kongsat	A lecturer at Mahachulalongkorn -rajavidyalaya University Nakhon Ratchasima Campus	- MAEL Application - Storyboards - Conceptual Framework - Achievement Test - Questionnaires - Guided Questions for Semi-structured Interview - Lesson Plan

Name	Position	What to be Examined
7. Mr. Chamnong Puphala	Chair, School of Foreign Languages, Mahachulalongkorn-rajavidyalaya University Nakhon Ratchasima Campus	- Storyboards - Conceptual Framework - Achievement Test - Questionnaires - Guided Questions for Semi-structured Interview - Lesson Plan

มหาวิทยาลัยเทคโนโลยีสุรนารี

Appendix H

Evaluation Forms

Evaluation Form for the Conceptual Framework of The Model for Producing a Mobile Phone-Assisted English Listening Application

Instructions

Please study the documents about the conceptual framework of the model for producing a mobile phone-assisted English listening application. Then check (✓) in the space corresponding to your opinions.

Item	Acceptable	Needs work	Comments
1. Mobile Assisted Language Learning (MALL)			
1.1 What Is Mobile Assisted Language Learning?			
1.2 Mobile Phone and Language Learning			
1.3 Categories of MALL Applications			

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Item	Acceptable	Needs work	Comments
2. Models for Producing MALL Materials			
2.1 Gané's Instructional Model			
2.2 Alessi and Trollip Model for Design and Development			
3. Assessing the Efficiency of MALL Materials			
3.1 Efficiency Criteria for MALL Materials			
3.2 Calculation for Efficiency of MALL Materials			
4. How to Teach Listening			
4.1 What is Listening?			
4.2 Approaches to Listening			
4.3 Listening Process			
4.4 Listening Lesson			
4.5 Principles for Teaching Listening			
4.6 Assessing Listening			

มหาวิทยาลัยเทคโนโลยีสุรนารี

Other Suggestions (Please specify.):

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Signature.....Expert

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Evaluation Form for the Model for Producing a Mobile Phone-Assisted English Listening Application

Instructions:

Please check (✓) in the space corresponding to the level of your opinions as follows.

Level 5 Strongly agree
Level 4 Agree
Level 3 Uncertain
Level 2 Disagree
Level 1 Strongly disagree

Item	Level of Opinions				
	5	4	3	2	1
1. The model for producing a mobile phone-assisted English listening application is in accordance with the Instructional System Design (ISD) approach.					
2. The model for producing a mobile phone-assisted English listening application consists of appropriate stages.					
3. The model for producing a mobile phone-assisted English listening application comprises appropriate logical steps.					
4. The steps in the model for producing a mobile phone-assisted English listening application are practical.					
5. The model for producing a mobile phone-assisted English listening application would lead to the efficient application.					

Other Suggestions (Please specify.):

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Signature.....Expert

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แบบประเมินแบบจำลองการสร้างโปรแกรมประยุกต์ สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย (Thai)

คำชี้แจง กรุณาทำเครื่องหมาย ✓ ลงในช่องว่างที่ตรงกับระดับความคิดเห็นของผู้เชี่ยวชาญ ซึ่งกำหนดเป็น 5 ระดับ ดังนี้

ระดับที่ 5 เห็นด้วยอย่างยิ่ง ระดับที่ 2 ไม่เห็นด้วย

ระดับที่ 4 เห็นด้วย ระดับที่ 1 ไม่เห็นด้วยอย่างยิ่ง

ระดับที่ 3 ไม่แน่ใจ

รายการประเมิน	ระดับความคิดเห็นของผู้เชี่ยวชาญ				
	5	4	3	2	1
1. แบบจำลองการสร้างโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย มีความสอดคล้องกับหลักการออกแบบระบบการเรียนการสอน (ISD)					
2. แบบจำลองการสร้างบทเรียนภาษาใช้โทรศัพท์เคลื่อนที่ช่วย มีการจัดลำดับขั้นตอนที่เหมาะสม					
3. ขั้นตอนการสร้างโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย สามารถปฏิบัติตามได้					
4. แบบจำลองการสร้างโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วยมีขั้นตอนย่อยที่เหมาะสม					
5. แบบจำลองการสร้างโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย จะนำไปสู่การสร้างบทเรียนภาษาใช้โทรศัพท์เคลื่อนที่ช่วยที่มีคุณภาพได้					

มหาวิทยาลัยเทคโนโลยีสุรนารี

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Evaluation Form for the Mobile Phone-Assisted English Listening Application

Instructions:

Please check (✓) in the space corresponding to the level of your opinions as follows.

Level 5 Very good
Level 4 Good
Level 3 Fair
Level 2 Poor
Level 1 Very poor

Item	Level				
	5	4	3	2	1
Part A: Presentation of Contents					
1. Content appropriateness					
2. Content structure					
3. Contents divided into pre-listening, listening, and post-listening					
4. Content accuracy					
5. Contents appropriate for students' level of language proficiency					
6. Interest level of contents					
7. Contents arranged from ease to difficulty					
Part B: Audio, Graphics, and Language Use					
8. Graphics and contents					
9. size of graphics					
10. Images and contents					
11. Motivation with sounds					
12. Clarity of sounds					
13. Grammar and spelling					

Next Page ➡

Item	Level				
	5	4	3	2	1
Part C: Interface Design					
14. Clarity of fonts					
15. Size of fonts					
16. Colors of fonts					
17. Contrast between fonts and background					
18. Colors of background					
19. Highlights of texts with colors					
20. Navigations					
Part D: Language Learning Theory-Based Design					
21. Directions or instructions					
22. Leaner control					
23. Interactivity					
24. Feedback					
25. Questions					
26. Answering questions					
27. Listening activities					
28. Providing learners with language exposures					
29. Providing learners with self-learning of language					

Other Suggestions: (Please specify)

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Next Page ➡

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แบบประเมินโปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษ ใช้โทรศัพท์เคลื่อนที่ช่วย (Thai)

คำชี้แจง : โปรดแสดงความคิดเห็นของท่าน โดยทำเครื่องหมาย ✓ ลงในช่องระดับความคิดเห็น ซึ่งกำหนดเกณฑ์ตัดสินคุณภาพเป็น 5 ระดับ ดังนี้

5 หมายถึง ดีมาก *4 หมายถึง ดี* *3 หมายถึง พอใช้*

2 หมายถึง ควรปรับปรุง *1 หมายถึง ไม่เหมาะสม*

รายการประเมิน	ระดับคุณภาพ				
	5	4	3	2	1
ก. ด้านเนื้อหาและการนำเสนอ					
1. เนื้อหาบทเรียนเหมาะแก่กิจกรรมฝึกการฟังเพื่อความเข้าใจ					
2. การแยกย่อยเนื้อหามีความเหมาะสม					
3. เนื้อหานำเสนอในรูปแบบกิจกรรมก่อนฟัง ขณะฟัง และหลังฟัง					
4. ความถูกต้องของเนื้อหา					
5. เนื้อหาเหมาะสมกับระดับความสามารถทางภาษาของผู้เรียน					
6. ความน่าสนใจของเนื้อหา					
7. เนื้อหานำเสนอจากง่ายไปหายาก					
ข. ด้านภาพ เสียง และการใช้ภาษา					
8. ความตรงตามเนื้อหาหรือกิจกรรมของภาพที่นำเสนอ					
9. ขนาดภาพที่ใช้ประกอบบทเรียนเหมาะสม					
10. การสื่อความหมายของภาพประกอบบทเรียน					
11. การเร้าความสนใจด้วยเสียงประกอบบทเรียน					
12. ความชัดเจนของเสียงบรรยายประกอบบทเรียน					
13. ความถูกต้องของเนื้อหาตามหลักไวยากรณ์และการสะกด					
ค. ด้านการออกแบบจอภาพ					
14. แบบอักษรที่ใช้นำเสนอเนื้อหาอ่านได้ชัดเจน					
15. ขนาดตัวอักษรในการนำเสนอเนื้อหาเหมาะสม					

มหาวิทยาลัยเทคโนโลยีสุรนารี

รายการประเมิน	ระดับคุณภาพ				
	5	4	3	2	1
ค. ด้านการออกแบบจอภาพ (ต่อ)					
16. ความเหมาะสมของการเลือกใช้สีตัวอักษร					
17. ความชัดเจนของตัวอักษรบนพื้นหลังสีต่างๆ					
18. ความเหมาะสมของการเลือกใช้สีพื้นจอภาพ					
19. การเน้นข้อความโดยใช้อักษรสีต่างๆ					
20. ปุ่มเชื่อมโยงไปยังส่วนต่างๆ ของบทเรียนมีความเหมาะสม					
ง. ด้านการจัดการเรียนรู้ในบทเรียน					
21. คำสั่งหรือคำชี้แจงมีความชัดเจน					
22. การเปิดโอกาสให้ผู้เรียนควบคุมบทเรียน เช่น การคลิกเลือกไปยังส่วนต่างๆ					
23. รูปแบบการปฏิสัมพันธ์ระหว่างผู้เรียนกับบทเรียน					
24. รูปแบบการให้ข้อมูลย้อนกลับ					
25. รูปแบบโจทย์หรือคำถามในบทเรียน					
26. รูปแบบการให้ตอบคำถามในบทเรียน					
27. กิจกรรมมุ่งฝึกทักษะการฟังภาษาอังกฤษเพื่อความเข้าใจ					
28. บทเรียนเปิดโอกาสให้ผู้เรียนมีประสบการณ์ทางภาษาอย่างสร้างสรรค์					
29. บทเรียนเปิดโอกาสให้ผู้เรียนได้เรียนรู้ด้วยตนเอง					

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Appendix I

User's Manual

mListening:

A Mobile Phone-Assisted English Listening Application

มหาวิทยาลัยเทคโนโลยีสุรนารี

Suriyawuth Suwannabubpha

Preface

This manual was written for guiding how to use the mListening, a mobile phone-assisted English listening application.

The manual consists of the following:

1. Introduction
2. How to Use
3. Procedures of Learning
4. System Requirements
5. List of Certified Mobile Phones

This manual is also expected to help the language teachers to apply the mListening in their language classroom and bring effective learning of English listening to the students.

Suriyawuth Suwannabubpha

มหาวิทยาลัยเทคโนโลยีสุรนารี

Table of Contents

1. Introduction
2. How to Use
3. Procedures of Learning
4. System Requirements
5. List of Certified Mobile Phones

มหาวิทยาลัยเทคโนโลยีสุรนารี

1. Introduction



“mListening” is a mobile phone-assisted English listening application, which can be played on the smartphone running iOS or Android operating system. It is also a mobile assisted language learning (MALL) material aiming to enhance the listening comprehension abilities of students.

This application has three learning objectives as follows.

1. The student is able to identify the main idea of the listening text.
2. The student is able to find out the specific information in the listening text.
3. The student is able to make inferences from the listening text.

The application comprises six lessons, including:

Lesson 1 Personal Profiles

Lesson 2 Countries and Languages

Lesson 3 Occupations

Lesson 4 Free Time Activities

Lesson 5 Possessions

Lesson 6 Buying Things

The important components of the application are illustrated as follows.

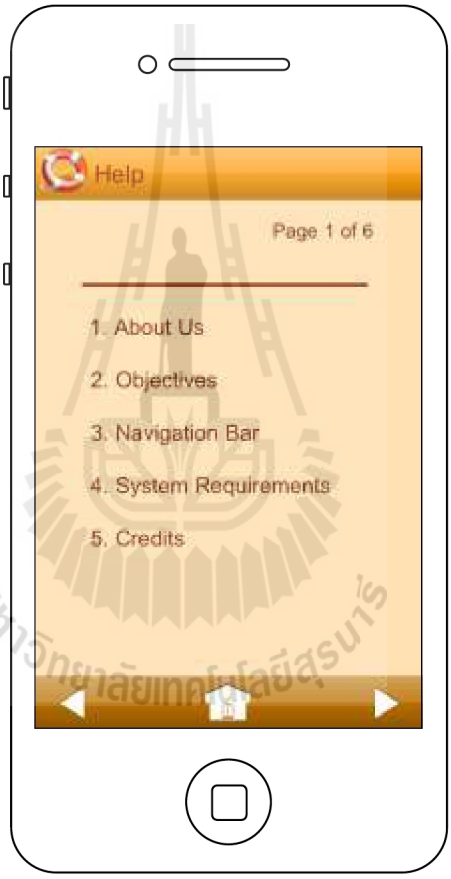
1. Main Menu

At the Main Menu or Home, students can choose a lesson to study by touching or tapping the buttons on the screen of the mobile phone. They also can tap to go to Help for learning more information about the application.



2. Help

At the Help, students can learn basic information about the application such as introduction, objectives, navigation bar, and so on.



3. Pretest / Posttest

The Pretest or Posttest is a multiple choice test. Students will listen to the texts or recordings twice, then answer the comprehension questions that follow.



4. Pre-Listening Activities

The pre-listening activities are the warm-up activities for preparing the students to listen. There are two main pre-listening activities: Word Building and Speaking.



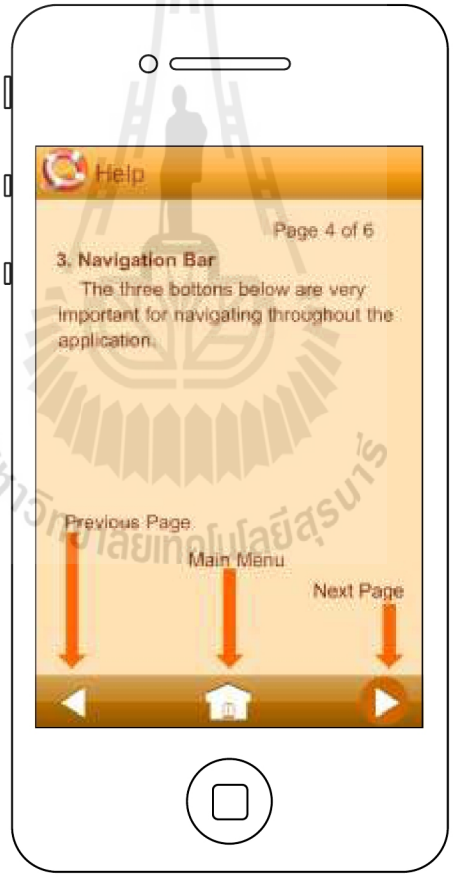
5. Listening and Post-listening Activities

This part is a listening practice. Students are provided with exercises consisting of listening texts and comprehension questions.



2. How to Use

With the touch-screen smartphones, students can use their finger to touch or tap a button on the screen to interact, choose the answers, or go to parts of the application via the three buttons on the navigation bar.



3. Procedures of Learning

Mobile phone-assisted English listening (MAEL) or mListening activities in the classroom should be divided into three main stages as follows.

1. Pre-MAEL activities
   1.1 Gain attentions of the learners.
   1.2 Arouse the learners' background knowledge about what to listen to.
   1.3 Teach vocabulary, sentences, grammar of the listening texts.
2. MAEL activities
   2.1 Learners implement the application individually or in group.
   2.2 Learners do activities of a lesson in the MAEL application, beginning from the pretest, pre-listening task, listening task, post-listening task, and posttest.
3. Post-MAEL activities
   3.1 Do more exercises or worksheets for retention or produce a language by speaking and writing.
   3.2 Teacher and learners make conclusion.

For the teachers, they pay an important role as an assistant to the students while learning through the mListening.

In terms of the students, they should firstly understand that the mListening aims to enhance their listening comprehension abilities and they should follow these steps.

1. Study the Help in the application.
2. Do a pretest of each lesson.
3. Do listening activities of each lesson.

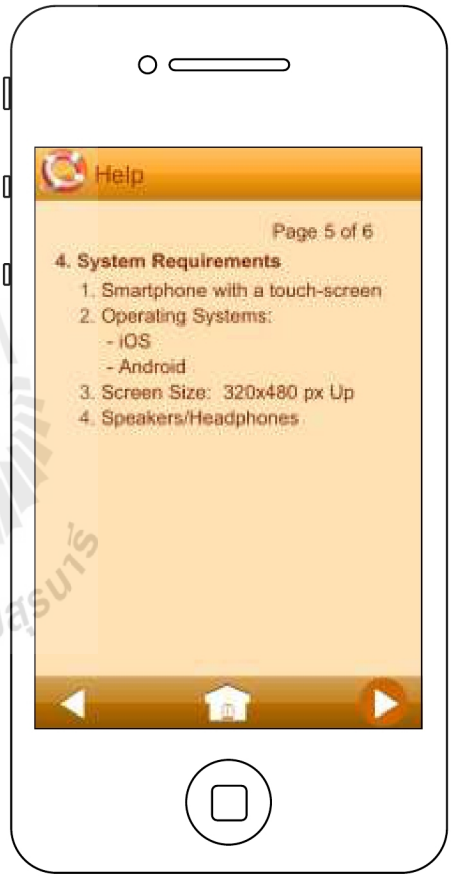
4. Do a posttest of each lesson.

5. Review a lesson both inside and outside of the classroom to practice listening as much as possible.

3. System Requirements

Mobile phones with the following system requirements can play the mListening.

1. Devices:
   Smartphones with a touch-screen
2. Operating systems:
   - iOS 4.3 or later by Apple
   - Android 2.2 or later by Google
3. Screen Size:
   320x480 px
4. Speakers / Headphones



4. List of Certified Mobile Phones

This is the list of mobile phones certified by Adobe Inc. to run an Air application. This list is available at http://www.adobe.com/devnet-apps/flashruntimes/certified-devices.html.

Manufacturer	Mobile Phone Name	Operating System
Apple	iPhone 3GS, 4, 4S, 5	iOS 4.3, 5.1, 6.0
Acer	Liquid Stream	Android 2.2
	Liquid Metal	Android 2.2
	Liquid Metal	Android 2.3
	Liquid Express E320	Android 2.3
	Liquid A1	Android 2.2
	Iconia Smart A5	Android 2.3
	Acer Liquid E	Android 2.2
Dell	Thunder	Android 2.3
	Thunder 4	Android 2.2
	Streak Pro	Android 2.3
	Streak 5	Android 2.2
	Streak 5	Android 2.3

Manufacturer	Mobile Phone Name	Operating System
Foxxconn	Sharp SH8188U	Android 2.2
Fujitsu	REGZA Phone T-01D, DoCoMo	Android 2.3
	F-10C (Docomo, Prime Series)	Symbian OS 2
	F-09C (Docomo, Prime Series)	Symbian OS 2
	F-06D (Docomo, Style Series)	Symbian OS 3
	F-04D (Docomo, Style Series)	Symbian OS 3
	F-02D (Docomo, Style Series)	Symbian OS 3
	F-08D Disney Phone	Android 2.3
Fujitsu Toshiba Mobile Communications	AU Regza Phone IS04	Android 2.2
	AU Arrows Z ISW11F	Android 2.3
	AU Arrows ES IS12F	Android 2.3
	Arrows X LTE F-05D	Android 2.3
	Arrows Kiss F-03D	Android 2.3
HTC	Vivid	Android 2.3
	Thunderbolt	Android 2.2
	T-mobile myTouch 4G	Android 2.2
	Sensation XL	Android 2.3

Manufacturer	Mobile Phone Name	Operating System
HTC	Sensation	Android 2.3
	S715e (Stunning)	Android 2.3
	Rhyme	Android 2.3
	Rezound	Android 2.3
	Rezound	Android 4.0
	myTouch 4G Slide	Android 2.3
	Merge	Android 2.2
	Incredible S	Android 2.2
	Incredible	Android 2.2
	EVO Shift 4G	Android 2.2
	EVO Design 4G	Android 2.3
	EVO 4G+	Android 2.3
	EVO 3D	Android 2.3
	Evo	Android 2.2
	Droid Incredible 2	Android 2.2
	Desire Z	Android 2.2
	Desire S	Android 2.3

มหาวิทยาลัยเทคโนโลยีสุรนารี

Manufacturer	Mobile Phone Name	Operating System
HTC	Desire HD	Android 2.2
	Desire	Android 2.2
	Amaze 4G	Android 2.3
Huawei	U8850 Vision	Android 2.2
	U8850 Vision	Android 2.3
	U8800pro	Android 2.2
	U8800pro	Android 2.3
	U8800	Android 2.2
	MediaPad	Android 2.3
	Honor	Android 2.3
Kyocera	Honey Bee 101K	Android 2.3
	Echo M9300	Android 2.2
	Echo	Android 2.3
	Digno ISW11K	Android 2.3
	Digno Dual	Android 2.3
Lenovo	LePhone S2-38AT0	Android 2.3
	LePhone S2-38AH0	Android 2.3

Manufacturer	Mobile Phone Name	Operating System
Lenovo	LePhone A60	Android 2.3
	LePhone 3GW101	Android 2.2
	IdeaTab K2	Android 2.3
LGE	SU610	Android 2.3
	Optimus Z	Android 2.3
	Optimus Net	Android 2.3
	Englighten	Android 2.3
	Viper	Android 2.3
	Thrill 4G	Android 2.2
	Thrill 4G	Android 2.3
	Thrill	Android 2.2
	Thrill	Android 2.3
	SU600	Android 2.2
	Spectrum	Android 2.3
	Revolution	Android 2.2
	Revolution	Android 2.3
	PRADA phone	Android 2.3

มหาวิทยาลัยเทคโนโลยีสุรนารี

Manufacturer	Mobile Phone Name	Operating System
LGE	Prada 3.0	Android 2.3
	Prada 3.0	Android 4.0
	Optimus X	Android 2.3
	Optimus Vu	Android 2.3
	Optimus Sol	Android 2.3
	Optimus Sketch	Android 2.3
	Optimus Q2	Android 2.3
	Optimus Q	Android 2.2
	Optimus Mach	Android 2.2
	Optimus M	Android 2.3
	Optimus LTE	Android 2.3
	Optimus EX	Android 2.3
	Optimus 4X HD	Android 4.0
	Optimus 3D2	Android 2.3
	Optimus 3D	Android 2.2
	Optimus 3D	Android 2.3
	Optimus 2X	Android 2.2

มหาวิทยาลัยเทคโนโลยีสุรนารี

Manufacturer	Mobile Phone Name	Operating System
LGE	Optimus 2X	Android 2.3
	MyTouch	Android 2.3
	Marquee	Android 2.3
	Mach	Android 2.3
	LG-F120S	Android 2.3
	LG-F120L	Android 2.3
	LG-F120K	Android 2.3
	LG-AS840	Android 2.3
	L07C	Android 2.3
	Genesis	Android 2.2
	G2X	Android 2.2
	G2X	Android 2.3
	Esteem	Android 2.3
	DoublePlay	Android 2.3
	Connect 4G	Android 2.3
	Prada 3.0	Android 2.3
	Optimus Black	Android 2.2

มหาวิทยาลัยเทคโนโลยีสุรนารี

Manufacturer	Mobile Phone Name	Operating System
LGE	Optimus Black	Android 2.3
	Optimus Black	Android 2.3
	Optimus Big	Android 2.2
	Optimus Big	Android 2.3
	Optimus 3D	Android 2.3
	Nitro HD	Android 2.3
	Ignite	Android 2.3
Motorola	XT928	Android 2.3
	XT928	WebTop
	XT882	Android 2.3
	XT865	Android 2.2
	XT605	Android 2.3
	XPRT	Android 2.2
	Pro+	Android 2.3
	Photon 4G	Android 2.3
	Photon 4G	Webtop
	Photon	Android 2.3

มหาวิทยาลัยเทคโนโลยีสุรนารี

Manufacturer	Mobile Phone Name	Operating System
Motorola	Photon	Webtop
	MT917	Android 2.3
	MT917	Webtop
	MT917	WebTop
	MT870	Android 2.3
	Motosmart Plus (LATAM)	Android 2.3
	Motoluxe XT615	Android 2.3
	Milestone X2	Android 2.2
	Milestone X2	Android 2.3
	Milestone Plus	Android 2.2
	Milestone Plus	Android 2.3
	Milestone MB632	Android 2.3
	Milestone 2	Android 2.2
	Milestone 2	Android 2.3
	Milestone	Android 2.2
	ME865	Android 2.3
	ME865	Android 2.3

Manufacturer	Mobile Phone Name	Operating System
Motorola	ME865	Webtop
	ME722	Android 2.2
	ME722	Android 2.3
	MB865	Android 2.3
	MB865	Android 2.3
	MB865	Webtop
	Flipside	Android 2.2
	Electrify	Android 2.3
	Electrify	Webtop
	Droid X2	Android 2.2
	Droid X2	Android 2.3
	Droid X	Android 2.2
	Droid X	Android 2.3
	Droid RAZR MAXX	Android 2.3
	Droid RAZR MAXX	Android 2.3
	Droid RAZR MAXX	Webtop
	Droid RAZR	Android 2.3

มหาวิทยาลัยเทคโนโลยีสุรนารี

Manufacturer	Mobile Phone Name	Operating System
Motorola	Droid RAZR	Android 2.3
	Droid RAZR	Webtop
	Droid Pro Venus 2	Android 2.3
	Droid Pro	Android 2.2
	Droid Pro	Android 2.3
	Droid Bionic	Android 2.2
	Droid 4	Android 2.3
	Droid 4	Webtop
	Droid 3	Android 2.3
	Droid 2 World Edition	Android 2.2
	Droid 2 Starwars Edition	Android 2.2
	Droid 2 Global	Android 2.2
	Droid 2 Global	Android 2.3
	Droid 2	Android 2.2
	Droid 2	Android 2.3
	Defy+	Android 2.3
	Defy	Android 2.2

Manufacturer	Mobile Phone Name	Operating System
Motorola	Cliq 2	Android 2.2
	Cliq 2	Android 2.3
	Bravo	Android 2.2
	Bionic	Android 2.3
	Bionic	Webtop
	Atrix 2	Android 2.3
	Atrix 2	Android 2.3
	Atrix 2	Webtop
	Atrix	Android 2.2
	Atrix	Android 2.3
	Atrix	Webtop
	Atrix	Webtop
	Admiral	Android 2.3
NEC	Medias WP N-06C	Android 2.3
	Medias PP N-01D	Android 2.3
NEC CASIO Mobile	Style Series	Linux
	Smart Series N-05C	Linux

มหาวิทยาลัยเทคโนโลยีสุรนารี

Manufacturer	Mobile Phone Name	Operating System
NEC CASIO Mobile	Medias WP	Android 2.3
	Medias WP	Android 2.3
	Medias N-04C	Android 2.2
	Medias N-04C	Android 2.3
	Medias LTE	Android 2.3
	Medias ES	Android 2.3
	G'z One IS11CA	Android 2.3
	G'z One IS11CA	Android 2.3
	G'z One Commando	Android 2.2
	G'z One Commando	Android 2.3
	G'z One Commando	Android 2.3
	Exmor Phone	Linux
	Exlim Keitai	Linux
Nokia	N9	Meego 1.2
OPPO Digital	Find X905	Android 2.3
	Find X903	Android 2.2
	Dirac HD Sound	Android 2.3

Manufacturer	Mobile Phone Name	Operating System
Palm	Palm Pre 2	WebOS
Panasonic	Sweety Softbank 003P	Android 2.3
	Lumix Phone Softbank 101P	Android 2.3
	Lumix Phone P-02D	Android 2.3
	Elegance	Android 2.3
Panasonic Mobile Communications	Viera Keitai P-04C	Linux
	Sweety Softbank 003P	Android 2.3
	Softbank 102P	Android 2.3
	Snoopy	Linux
	Lumix Phone P-05C	Linux
	Eluga	Android 2.3
	Elegance	Android 2.3
	Disney Mobile P-05D	Android 2.3
Pantech	Vega X Plus	Android 2.2
	Vega X Plus	Android 2.3
	Vega X	Android 2.2
	Vega X	Android 2.3

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Manufacturer	Mobile Phone Name	Operating System
Pantech	Vega S	Android 2.2
	Vega S	Android 2.3
	Vega Racer	Android 4.0
	Vega No 5	Android 2.3
	Vega LTE	Android 2.3
	Pocket	Android 2.3
	IM-A780L	Android 2.3
	IM-A770K	Android 2.3
	IM-A760S	Android 2.3
	Burst	Android 2.3
	Breakout	Android 2.3
Philips	GoGear Connet 3	Android 2.3
PMC	P-03D Viera	Linux
	P-01D My Fit	Android 2.3
Samsung	Vibrant	Android 2.2
	Verizon 4G LTE	Android 2.2
	Transform Ultra	Android 2.3

Manufacturer	Mobile Phone Name	Operating System
Samsung	Transform Ultra	Android 2.3
	Stratosphere	Android 2.3
	Sidekick 4G	Android 2.2
	Rugby Smart Android Smartphone	Android 2.3
	Infuse 4G Smartphone	Android 2.2
	Indulge	Android 2.3
	Illusion	Android 2.3
	Illusion	Android 2.3
	Galxy S 4G	Android 2.2
	Galaxy W	Android 2.3
	Galaxy Tab 8.9 LTE 16GB	Android 3.2
	Galaxy Tab	Android 2.2
	Galaxy SIII (S3)	Android 4.0
	Galaxy S Vibrant	Android 2.2
	Galaxy S Vibrant	Android 2.2
	Galaxy S Vibrant	Android 2.3
	Galaxy S Plus	Android 2.3

Manufacturer	Mobile Phone Name	Operating System
Samsung	Galaxy S II X	Android 2.3
	Galaxy S II Skyrocket HD	Android 2.3
	Galaxy S II Skyrocket	Android 2.3
	Galaxy S II LTE	Android 2.3
	Galaxy S II LTE	Android 2.3
	GALAXY S II LTE	Android 2.3
	Galaxy S II HD LTE	Android 2.3
	Galaxy S II Epic 4G	Android 2.3
	Galaxy S II	Android 2.3
	Galaxy S II	Android 2.3
	Galaxy S II	Android 2.3
	Galaxy S II	Android 2.3
	Galaxy S II	Android 2.3
	Galaxy S II	Android 2.3
	Galaxy S II	Android 2.3
	Galaxy S Fascinate 4G	Android 2.2
	Galaxy S Captivate	Android 2.2
	Galaxy S Captivate	Android 2.3

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Manufacturer	Mobile Phone Name	Operating System
Samsung	Galaxy S Blaze	Android 2.3
	Galaxy S Aviator	Android 2.3
	Galaxy S Advance	Android 2.3
	Galaxy S 4G	Android 2.3
	Galaxy S 4G	Android 2.3
	Galaxy S 3 Galaxy Note	Android 2.3
	Galaxy S	Android 2.2
	Galaxy S	Android 2.3
	Galaxy Note LTE	Android 2.3
	Galaxy Note	Android 2.3
	Galaxy Note	Android 2.3
	Galaxy Mini 2	Android 2.3
	Galaxy M	Android 2.3
	Galaxy Attain 4G	Android 2.3
	Galaxy Ace Plus	Android 2.3
	Fascinate	Android 2.3
	Exhilarate	Android 2.3

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Manufacturer	Mobile Phone Name	Operating System
Samsung	Exhibit II 4G	Android 2.3
	Exhibit 4G	Android 2.2
	Exhibit 4G	Android 2.3
	Epic Galaxy S	Android 2.3
	Droid Charge	Android 2.2
	Infuse 4G	Android 2.3
	Galaxy S Plus	Android 2.3
Samsung USA	Rugby Smart	Android 2.3
	Galaxy W	Android 2.3
	Galaxy S II X	Android 2.3
	Galaxy S II LTE	Android 2.3
	Galaxy Note	Android 2.3
SEMC	Xperia U	Android 2.3
	Xperia Sola	Android 2.3
	Xperia S	Android 2.3
	Xperia Ray	Android 2.3
	Xperia Ray	Android 2.3

Manufacturer	Mobile Phone Name	Operating System
SEMC	Xperia Pro	Android 2.3
	Xperia Pro	Android 2.3
	Xperia Play	Android 2.3
	Xperia Play	Android 2.3
	Xperia P	Android 2.3
	Xperia Neo	Android 2.3
	Xperia Neo	Android 2.3
	Xperia Mini Pro	Android 2.3
	Xperia Mini Pro	Android 2.3
	Xperia Mini	Android 2.3
	Xperia Mini	Android 2.3
	Xperia Ion	Android 2.3
	Xperia Arc S	Android 2.3
	Xperia Arc	Android 2.3
	Xperia Arc	Android 2.3
	Xperia Active	Android 2.3
	Xperia Acro HD	Android 2.3

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Manufacturer	Mobile Phone Name	Operating System
SEMC	Xperia Acro	Android 2.3
	Xperia Acro	Android 2.3
	Live with Walkman	Android 2.3
Sharp	SH831T	Android 2.3
	SH8168U (Naked eye 3D)	Android 2.2
	SH8158U (Naked eye 3D)	Android 2.2
	SH DASH IS05	Android 2.2
	SH DASH IS03	Android 2.2
	Q-pot.Phone SH04D	Android 2.3
	Lynx SH03C	Android 2.2
	Lynx SH03C	Symbian OS 3
	Galapagos Softbank 005SH	Android 2.2
	Galapagos Softbank 003SH	Android 2.2
	Disney Mobile DM012SH	Android 2.3
	Disney Mobile DM011SH	Android 2.3
	Disney Mobile DM010SH	Android 2.3
	AU iida INFOBAR C01	Android 2.3

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Manufacturer	Mobile Phone Name	Operating System
Sharp	AU iida INFOBAR A01	Android 2.3
	Aquos Phone The Premium	Android 2.3
	Aquos Phone The Hybrid	Android 2.3
	Aquos Phone The Hybrid	Android 2.3
	Aquos Phone Slider SH-02D	Android 2.3
	Aquos Phone SH-13C	Android 2.3
	Aquos Phone SH-12C	Android 2.3
	Aquos Phone SH-10C	Symbian OS 2
	Aquos Phone SH-07D	Android 4.0
	Aquos Phone SH-06D	Android 2.3
	Aquos Phone SH-01D	Android 2.3
	Aquos Phone IS14SH	Android 2.3
	Aquos Phone IS13SH	Android 2.3
	Aquos Phone IS12SH	Android 2.3
	Aquos Phone IS11SH	Android 2.3
	Aquos Phone	Android 2.3
	Aquos Phone	Android 2.3

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Manufacturer	Mobile Phone Name	Operating System
Sharp	Aquos Phone	Android 2.3
	Aquos Phone	Android 4.0
Toshiba	Regza Phone T-01C	Android 2.2
	Regza Phone IS11T	Android 2.3
	Globe-Trotter	Android 2.3
ZTE	ZTE-T U960	Android 2.3
	009Z	Android 2.3
	008Z	Android 2.3

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Appendix J

Lesson Plans

Subject	:	Listening and Speaking I
Material	:	mLisening: the Mobile Phone-Assisted English Listening Application (6 lessons)
Level	:	Third-year English program students
Class size	:	18 students
Periods	:	12 periods (2 periods per week)
Instructor	:	Mr. Suriyawuth Suwannabubpha
Objectives	:	There are three learning objectives as follows. 1. The student is able to identify the main idea of the listening text. 2. The student is able to find out the specific information in the listening text. 3. The student is able to make inferences from the listening text.

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Lesson Plan 1

Topic: Personal Profiles **Period:** 1-2

Contents:

1. Lesson 1: Personal Profiles
2. Vocabulary:

   area code misdial last name social security number corner

3. Language Structure:

Could you tell me	your	name?
Could I have		phone number?

How do you spell	that?
	your last name?

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Mobile Phone-Assisted English Listening (MAEL) Activities:

Activities	Materials	Assessment
Stage 1: Pre-MAEL Activities 1. Explain how to use the MAEL application or mListening to students. 2. Tell students there are three learning objectives: *students are able to (1) identify the main idea, (2) find out the specific information, and (3) make inferences from the listening text.* 3. Ask few students: *What's your last name? How do you spell your last name? Could you tell me your phone number? Could I have your e-mail address?* 4. Write the language structure on the board. 5. Focus students' attention on the sentences on the board. Invite volunteers to read aloud the sentences, other students listen and repeat. 6. Have students work in pairs. Students use the given sentences to ask for	- User's Manual	

Activities	Materials	Assessment
personal profiles of each other.		
Stage 2: MAEL Activities 1. Have students work individually. They study Lesson 1 in the MAEL application (mListening) by doing a pretest, listening activities, and a posttest. 2. Record students' scores and problems. 3. Ask students to review the lesson once again for fluency.	- mListening: Lesson 1 - Students' Smartphones - Headphones	- Results from doing a pretest, exercises, and a posttest in the application
Stage 3: Post-MAEL Activities 1. Have students complete Speaking Task 1.1. 2. Invite volunteers to introduce their classmates' personal profiles to the class. 3. Together with students, sum up what they have learnt.	- Speaking Task 1.1	- Checking the task

Speaking Task 1.1

Instructions: Walk around the classroom and talk to your classmates. Write down their name, address, email address, and phone number in the table.

	You	Classmate 1	Classmate 2
1. Name			
2. Address			
3. E-mail Address			
4. Phone Number			

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Example:

Student A: Could I have your name, please?
Student B: Kitti Suwan
Student A: How do you spell “Suwan”?
Student B: S-U-W-A-N
Student A: Could you tell me your address?
Student B: Sure, it’s 670, Suranaree, Mueang, Nakhon Ratchasima.

Lesson Plan 2

Topic: Countries and Languages **Period:** 3-4

Contents:

1. Lesson 2: Countries and Languages
2. Vocabulary:

   Countries: Denmark Korea Switzerland Brazil India

   Languages: Korean French Portuguese Danish Hindi

3. Language Structure:

Where do you live?	I live in Bangkok.
Where are you from?	I'm from Thailand.
What's your nationality?	I'm Thai.
What languages do you speak?	I speak Thai and English.

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Mobile Phone-Assisted English Listening (MAEL) Activities:

Activities	Materials	Assessment
Stage 1: Pre-MAEL Activities 1. Ask students: What countries do you like to go? Write the list of countries on the board. 2. Ask: *What languages do people in these countries (on the board) speak?* Invite volunteers to come to the front and write the languages of each country on the board. 3. Focus students' attention on the pronunciation of countries and languages on the board. Invite volunteers to read aloud the countries and languages, other students listen and repeat. 4. Have students work in pairs. Students talk to each other, asking: *Where are you from? Where do you live? What's your nationality? What languages do you speak? Can you speak Lao / Khmer / Malay / Vietnamese ?*		

Activities	Materials	Assessment
Stage 2: MAEL Activities 1. Have students work individually. They study Lesson 2 in the MAEL application (mListening) by doing a pretest, listening activities, and a posttest. 2. Record students' scores and problems. 3. Ask students to review the lesson once again for fluency.	- mListening: Lesson 2 - Students' Smartphones - Headphones	- Results from doing a pretest, exercises, and a posttest in the application
Stage 3: Post-MAEL Activities 1. Have students work in groups of five to complete Speaking Task 2.1. 2. Have students work individually by using the questions in the Speaking Task 2.1 to interview other classmates as much as possible. 3. Together with students, sum up what they have learnt.	- Speaking Task 2.1 - Name Cards	- Checking the task

Speaking Task 2.1

Instructions: Interview your classmates about the persons in their name cards.

	Name	Country	Language (s)
Person 1			
Person 2			
Person 3			
Person 4			

Example:

A: Could I have her/his name?

B: Her/His name's _____.

A: Where's she/he from?

B: She's/He's from _____.

A: What languages does he/she speak?

B: She/He speaks _____.

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Name Cards:

Name: Eri Park Country: Korea Language: Korean and Japanese	Name: Albert Navaro Country: France Language: French and German
Name: Juan Lopez Country: Brazil Language: Portuguese, Spanish, and English	Name: Mary Fox Country: Canada Language: French and English Lives in: London

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Lesson Plan 3

Topic: Occupations **Period:** 5-6

Contents:

1. Lesson 3: Occupations
2. Vocabulary:

work outdoors	work alone	take money from customers
wear a hat	work at night	sit down at work
wear a uniform	work indoors	

3. Language Structure:

What do you do?	I'm a teacher. We're teachers.
Do you work at night?	Yes, I usually do.
How do you get to work?	I get to work by bus.

He / She always wears a hat.

I don't work outdoors.

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Mobile Phone-Assisted English Listening (MAEL) Activities:

Activities	Materials	Assessment
Stage 1: Pre-MAEL Activities 1. Ask students: *What would you like to do in the future? Why? Do you like it?* 2. Write the question, *What do you do?*, on the board. Invite volunteers to come to the front and write the possible answers to this question, for example, *I'm a teacher.* 3. Have students discuss in groups of five about the occupations of their family members. Use the questions like: *What does your father do? Where does he work? How does he get to work? Does he work indoors or outdoors? Does he work at night?* 4. Remind students that *"a"* or *"an"* comes after *is / am / are* and comes before nouns, for example, *I'm a monk. I'm an actor.*		

Activities	Materials	Assessment
Stage 2: MAEL Activities 1. Have students work individually. They study Lesson 3 in the MAEL application (mListening) by doing a pretest, listening activities, and a posttest. 2. Record students' scores and problems. 3. Ask students to review the lesson once again for fluency.	- mListening: Lesson 3 - Students' Smartphones - Headphones	- Results from doing a pretest, exercises, and a posttest in the application
Stage 3: Post-MAEL Activities 1. Have students complete Speaking Task 3.1. 2. Invite volunteers to tell the class about the answers of their classmates. 3. Together with students, sum up what they have learnt.	- Speaking Task 3.1	- Checking the task

Speaking Task 3.1

Instructions: Add two more questions about the job and answer each question. Then interview three classmates in the class.

Do you like to…..	You		Friend 1		Friend 2		Friend 3	
	Yes	No	Yes	No	Yes	No	Yes	No
work outdoors?								
work indoors?								
work alone?								
work at night?								
wear a uniform?								
wear a hat?								
sit down at work?								
stand up at work?								

Example:

A: Do you like to work outdoors?

B: Yes, I do. / No, I don't.

Lesson Plan 4

Topic: Free Time Activities **Period:** 7-8

Contents:

1. Lesson 4: Free Time Activities
2. Vocabulary:

paint	go dancing	go bowling
read magazines	go jogging	go to the library
play Ping-Pong	play golf	go shopping
take pictures	go to the movie	

3. Language Structure:

What do you like to do in your free time?	I like to play tennis.
How often do you play tennis?	I play tennis every day.
Where do you play tennis?	I play tennis at school.
Who do you play tennis with?	I play tennis with my friends.

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Mobile Phone-Assisted English Listening (MAEL) Activities:

Activities	Materials	Assessment
Stage 1: Pre-MAEL Activities 1. Ask students: *What do you like to do in your free time? Where do you do that? How often do you do that? Who do you do with?* 2. Have students work in pairs by using the same questions to ask their partners in order to make a conversation. 3. Write on the board: *What do you like to do in your free time?* Then explain the sentence structure. 4. Invite volunteers to the front to make new sentences by changing the subject, *you*, as others like, *your father, your mother, your sister, your brother*. For example, *What's your father like to do in his free time?* 5. Have student work in pairs to talk to each other, using the questions created.		

Activities	Materials	Assessment
Stage 2: MAEL Activities 1. Have students work individually. They study Lesson 4 in the MAEL application (mListening) by doing a pretest, listening activities, and a posttest. 2. Record students' scores and problems. 3. Ask students to review the lesson once again for fluency.	- mListening: Lesson 4 - Students' Smartphones - Headphones	- Results from doing a pretest, exercises, and a posttest in the application
Stage 3: Post-MAEL Activities 1. Have students complete Speaking Task 4.1. 2. Invite volunteers to tell the class about the answers of their classmates. 3. Together with students, sum up what they have learnt.	- Speaking Task 4.1	- Checking the task

Speaking Task 4.1

Instructions: Add two more questions and survey for free-time activities of yourself and classmates

What do you do in your free time?	You		Classmate 1		Classmate 2		Classmate 3	
	Yes	No	Yes	No	Yes	No	Yes	No
Do you use the Internet?	☐	☐	☐	☐	☐	☐	☐	☐
Do you collect stamps?	☐	☐	☐	☐	☐	☐	☐	☐
Do you listen to Dharma?	☐	☐	☐	☐	☐	☐	☐	☐
Do you clean your room?	☐	☐	☐	☐	☐	☐	☐	☐
Do you talk on the phone?	☐	☐	☐	☐	☐	☐	☐	☐
Do you hang out with friends?	☐	☐	☐	☐	☐	☐	☐	☐
Do you practice meditation?	☐	☐	☐	☐	☐	☐	☐	☐
Do you read books?	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐

Example:

A: Do you use the Internet in your free time?

B: Yes, I do. / No, I don't.

Lesson Plan 5

Topic: Possessions **Period:** 9-10

Contents:

1. Lesson 5: Possessions
2. Vocabulary:

camping stove	umbrellas	cell phone	sleeping bags
compass	insect spray	guidebooks	alarm clock
Insect spray	guidebooks	alarm clock	flashlight
forks and knives	pots and pans	camera	maps
tent	canteen	mugs and plates	

3. Language Structure:

Do you have a CD player?	Yes, I do.
What kind of MP3 player do you have?	It's a Sony.
I have two dogs.	
I don't have a cat.	

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Mobile Phone-Assisted English Listening (MAEL) Activities:

Activities	Materials	Assessment
Stage 1: Pre-MAEL Activities 1. Ask students: *Do you have computers? Do you have pets? What pet do you have? Do you have TV?* 2. Write on the board: *Do you have a tablet? Yes, I do. No, I don't.* Then explain the sentence structure. 3. Focus students' attention on the pronunciation of the question, *Do you have a tablet*?, with a rising pit at the final syllable of the sentence. 4. Invite volunteers to pronounce the question beginning with *"Do you have ……?"*. 5. Have student work in pairs to ask each other about what they have or do not have. For example: *Do you have a dog? Do you have a car? Do you have a smartphone? Do you have a cat? Do you have TV? Do you have a CD player? Do you have an MP3 player?*		

Activities	Materials	Assessment
Stage 2: MAEL Activities 1. Have students work individually. They study Lesson 5 in the MAEL application (mListening) by doing a pretest, listening activities, and a posttest. 2. Record students' scores and problems. 3. Ask students to review the lesson once again for fluency.	- mListening: Lesson 5 - Students' Smartphones - Headphones	- Results from doing a pretest, exercises, and a posttest in the application
Stage 3: Post-MAEL Activities 1. Have students complete Speaking Task 5.1. 2. Invite volunteers to tell the class about the answers of their classmates. 3. Together with students, sum up what they have learnt.	- Speaking Task 5.1	- Checking the task

Speaking Task 5.1

Instructions: Add two more questions and survey for what you or your classmates have.

Do you have _____?	You		Classmate 1		Classmate 2		Classmate 3	
	Yes	No	Yes	No	Yes	No	Yes	No
the Internet	☐	☐	☐	☐	☐	☐	☐	☐
a smartphone	☐	☐	☐	☐	☐	☐	☐	☐
TV	☐	☐	☐	☐	☐	☐	☐	☐
a computer	☐	☐	☐	☐	☐	☐	☐	☐
a tablet	☐	☐	☐	☐	☐	☐	☐	☐
a cat	☐	☐	☐	☐	☐	☐	☐	☐
a dog	☐	☐	☐	☐	☐	☐	☐	☐
a horse	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐

Example:

A: Do you have the Internet?

B: Yes, I do. / No, I don't.

Lesson Plan 6

Topic: Buying Things **Period:** 11-12

Contents:

1. Lesson 6: Buying Things
2. Vocabulary:

toothbrush	baby powder	aspirin
nail clippers	Band-Aids	fruitcake
cookies	doughnuts	French bread
pie	memory card	battery
lens cap	photo album	

3. Language Structure:

How much is this shirt?	It's twenty-five dollars and fifty cents.
How much are these shoes?	They're forty-seven fifty
Do you have raincoats?	Yes, we do. No, I'm sorry, we don't.
I'll take one.	
Let me have two.	

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Mobile Phone-Assisted English Listening (MAEL) Activities:

Activities	Materials	Assessment
Stage 1: Pre-MAEL Activities 1. Ask students: *Where do you buy things? What do you buy? How much is it? How much are these? How much are they?* 2. Write on the board: *$16.00, $24.50, $58.97, $19.04, THB60.75, THB99.50, THB100.25, THB9.35* 3. Invite volunteers to come to the front and write the letters of each price. Check students' answers and have them read aloud. 4. Remind students about the differences between *ten dollars and five cents* and *ten baht and fifty satang* (no "s" ending). 5. Have student work in pairs to ask each other about the price of things. For example, *How much is your smartphone? How much is this book? How much is this pen?*		

Activities	Materials	Assessment
Stage 2: MAEL Activities 1. Have students work individually. They study Lesson 6 in the MAEL application (mListening) by doing a pretest, listening activities, and a posttest. 2. Record students' scores and problems. 3. Ask students to review the lesson once again for fluency.	- mListening: Lesson 6 - Students' Smartphones - Headphones	- Results from doing a pretest, exercises, and a posttest in the application
Stage 3: Post-MAEL Activities 1. Have students work in groups of three to complete Speaking Task 6.1. 2. Invite volunteers to tell the class about the answers of their classmates. 3. Together with students, sum up what they have learnt.	- Speaking Task 6.1	- Checking the task

Speaking Task 6.1

Instructions: Guess the prices of the following things. Then talk to two classmates about the prices they guess. Add two more things.

How much is/are _____?	You	Classmate 1	Classmate 2
the computer	*THB15,000*		
the tablet			
the smartphone			
the projector			
the textbook			
the car			
the movie DVDs			
the camera			

Example:

A: How much is the tablet?

B: I think it's 4,000 baht.

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Score Record Form

Lesson_____ : _____

No.	Name	Pretest	Exercise	Posttest	Note
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Signature.....Instructor/Researcher

(.....)

...../...../.....

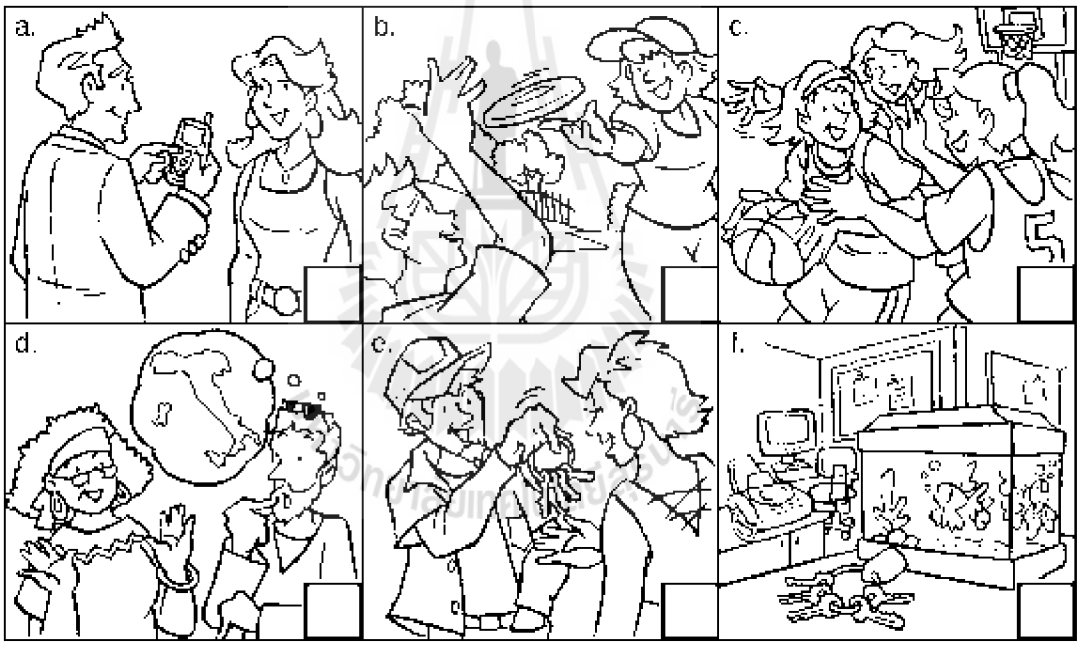
Appendix K

Achievement Test

No_____Name_____

I. Listening One [Question 1-4]

Instructions: You will hear four conversations twice. Listen and write the number of each conversation next to the correct picture.



II. Listening Two [Question 5-12]

Instructions: Read the sentences on your test paper about two conversations. You will hear each conversation twice. Listen and circle **T** (true) or **F** (false) for each sentence.

Conversation 1:

5. Junko works in a restaurant. T F
6. Junko doesn't like her job very much. T F
7. Junko likes the customers. T F
8. The man thinks Junko's job is easy. T F

Conversation 2:

9.	Ted enjoys swimming in his free time.	T	F
10.	The woman likes swimming, too.	T	F
11.	Ted swims once a week.	T	F
12.	The woman wants to know where the pool is.	T	F

III. Listening three [Question 13-20]

Instructions: Read the questions on your test paper about two conversations. You will hear each conversation twice. Listen and circle the best answer for each question.

Conversation 1:

13. Where is the police officer?
    a) in the park
    b) behind the ice cream truck
    c) next to the lamp post
    d) under the lamp post

14. What is the police officer doing?
    a) buying ice cream
    b) talking to some children
    c) using the pay phone
    d) looking for his wallet

15. Why is the man looking for the police officer?
    a) His wallet is missing.
    b) He found a wallet.
    c) He wants to meet him.
    d) He is looking for his children.

16. What could have happened to the man's wallet?
    a) It could be new.
    b) It could be old.
    c) It could be stolen.
    d) It could be wet.

Conversation 2:

17. Where is Maria from?
    a) Italy
    b) Spain
    c) Mexico
    d) Sapporo

18. What languages does Maria speak?
    a) Spanish and French
    b) Spanish and English
    c) Spanish and Japanese
    d) Spanish, English and a little Japanese

19. What languages does John speak?
    a) Spanish and French
    b) Spanish and English
    c) Spanish and Japanese
    d) Spanish, English and some Japanese

20. What are Maria and John doing in Sapporo?
    a) skiing
    b) swimming
    c) studying Spanish
    d) teaching English

Answer Key

I. Listening One

1. d 2. a 3. b 4. f

II. Listening Two

5. T 6. F 7. T 8. F 9. T 10. T 11. F 12. F

III. Listening Three

13. c 14. b 15. a 16. c 17. b 18. b 19. d 20. a

มหาวิทยาลัยเทคโนโลยีสุรนารี

Appendix L

Questionnaires

The Questionnaire on Students' Opinions towards Learning through the Mobile Phone-Assisted English Listening Application

Directions:

This questionnaire is employed to collect data about students' opinions towards learning through the mobile phone-assisted English listening application entitled "mListening". You are free to answer the questions and your answers have no any effects on your grade.

The questionnaire is divided into two parts:

Part 1: Opinions towards learning through the mobile phone assisted-English listening application

The questions in this part asks for the opinions on learning through the mobile phone-assisted English listening application. Please read each question carefully and check (✓) in the space corresponding to your opinion and truth.

Part 2: Open-ended questions about learning through the mobile phone-assisted English listening application

The open-ended questions ask about learning through the mobile phone-assisted English listening application. Please fill in to express your opinions and suggestions.

In this questionnaire,

The terms "**mListening application**" refer to the mobile phone-assisted English listening application entitled "**mListening**", which you have studied.

Part 1: Opinions towards learning through the mobile phone-assisted English listening application

Items	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
1. The mListening application helps to develop your English listening skills.					
2. The mListening application raises your interest in practicing English listening skills.					
3. You feel worried while learning through the mListening application					
4. The mListening application gives you more chances to review the mListening lessons in order to practice English listening skills.					
5. The mListening application allows you to practice English listening skills everywhere you need.					
6. The mListening application allows you to practice English listening skills everytime you need.					
7. It is difficult to use the mListening application.					
8. Using the mListening application, you can practice English listening skills outside of the classroom.					
9. Learning vocabulary in the pre-listening task named “Word Building” of the mListening application helps you to comprehend the listening text.					

Items	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
10. Learning a conversation in the pre-listening task named "Speaking" of the mListening application helps you to comprehend the listening text.					
11. The mListening application makes you inconvenient to practice English listening skills.					
12. The mListening application makes you have more attempts to practice English listening skills.					
13. The mListening application allows you to know your learning progress immediately.					

Part 2: Open-ended questions about learning through the mobile phone-assisted English listening application

1. What do you like in learning through the mobile phone-assisted English listening application? Why?

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2. What do you dislike in learning through the mobile phone-assisted English listening application? Why?

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3. Does the mListening application help you to develop your English listening skills? If yes, how? And if no, why not?

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4. Do you have any suggestions on learning through the mobile phone-assisted English listening application? If yes, please specify.

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*******Thank you very much for your cooperation.*****

แบบสอบถาม (Thai)

เรื่อง การรับรู้และการตอบสนองต่อการเรียนโดยใช้โปรแกรมประยุกต์
สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย

คำชี้แจง

แบบสอบถามนี้ใช้สำหรับศึกษาความคิดเห็นของพระนิสิตหลังจากได้ทำการเรียนโดยใช้โปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย ชื่อ mListening ท่านมีอิสระในการตอบคำถาม และคำตอบของท่านไม่ส่งผลใดๆ ต่อการศึกษาของท่าน

แบบสอบถามนี้แบ่งออกเป็น 2 ส่วน คือ

ส่วนที่ 1 ข้อคำถามเกี่ยวกับการรับรู้และการตอบสนองต่อการเรียนโดยใช้โปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย จำนวน 13 ข้อ

ส่วนที่ 2 คำถามปลายเปิดเกี่ยวกับการรับรู้และการตอบสนองต่อการเรียนโดยใช้โปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย จำนวน 4 ข้อ

โปรดศึกษาข้อคำถามหรือข้อความในแต่ละข้อให้เข้าใจ แล้วทำเครื่องหมาย (✓) ในช่องที่ตรงกับระดับความคิดเห็นของท่าน และเป็นจริงเกี่ยวกับตัวท่านมากที่สุด หรือกรอกข้อมูลให้ครบสมบูรณ์ทุกข้อ

มหาวิทยาลัยเทคโนโลยีสุรนารี

ในแบบสอบถามนี้

คำว่า **โปรแกรมประยุกต์ mListening** หมายถึง โปรแกรมประยุกต์ที่ผู้วิจัยพัฒนาขึ้นสำหรับใช้กับโทรศัพท์เคลื่อนที่ระบบปฏิบัติการ iOS และ Android แบบหน้าจอสัมผัส เพื่อฝึกทักษะการฟังภาษาอังกฤษ โดยใช้ชื่อว่า “mListening” (เอ็มลิสเซนนิ่ง)

คำว่า **โปรแกรมประยุกต์** มีชื่อเรียกโดยทั่วไปว่า แอพ (app ย่อมาจาก application)

ส่วนที่ 1 ข้อคำถามเกี่ยวกับการรับรู้และการตอบสนองต่อการเรียนโดยใช้โปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย

รายการ	เห็นด้วยอย่างยิ่ง	เห็นด้วย	ไม่แน่ใจ	ไม่เห็นด้วย	ไม่เห็นด้วยอย่างยิ่ง
1. โปรแกรมประยุกต์ mListening ช่วยพัฒนาทักษะการฟังภาษาอังกฤษของท่าน					
2. โปรแกรมประยุกต์ mListening ทำให้ท่านเกิดความสนใจในการฝึกทักษะการฟังภาษาอังกฤษ					
3. ท่านรู้สึกกังวลใจในขณะเรียนโดยใช้โปรแกรมประยุกต์ mListening					
4. โปรแกรมประยุกต์ mListening ช่วยให้ท่านมีโอกาสทบทวนบทเรียนเพื่อฝึกทักษะการฟังภาษาอังกฤษได้มากขึ้น					
5. โปรแกรมประยุกต์ mListening ช่วยให้ท่านฝึกทักษะการฟังภาษาอังกฤษได้ทุกที่ที่ต้องการ					
6. โปรแกรมประยุกต์ mListening ช่วยให้ท่านฝึกทักษะการฟังภาษาอังกฤษได้ทุกเวลาที่ต้องการ					
7. โปรแกรมประยุกต์ mListening มีการใช้งานยาก					
8. โปรแกรมประยุกต์ mListening ช่วยให้ท่านได้ฝึกทักษะการฟังภาษาอังกฤษนอกชั้นเรียน					

มหาวิทยาลัยเทคโนโลยีสุรนารี

รายการ	เห็นด้วยอย่างยิ่ง	เห็นด้วย	ไม่แน่ใจ	ไม่เห็นด้วย	ไม่เห็นด้วยอย่างยิ่ง
9. การศึกษาคำศัพท์เกี่ยวกับเรื่องที่จะฟังในโปรแกรมประยุกต์ mListening ช่วยให้ท่านเข้าใจเรื่องที่ฟังได้ง่ายขึ้น					
10. การศึกษาบทสนทนาเกี่ยวกับเรื่องที่จะฟังในโปรแกรมประยุกต์ mListening ช่วยให้ท่านเข้าใจเรื่องที่จะฟังได้ง่ายขึ้น					
11. โปรแกรมประยุกต์ mListening ทำให้ท่านเกิดความยุ่งยากในการฝึกทักษะการฟังภาษาอังกฤษ					
12. โปรแกรมประยุกต์ mListening ช่วยให้ท่านเกิดความพยายามในการฝึกทักษะการฟังภาษาอังกฤษมากยิ่งขึ้น					
13. โปรแกรมประยุกต์ mListening ช่วยให้ท่านทราบผลการเรียนรู้ทันที					

มหาวิทยาลัยเทคโนโลยีสุรนารี

ส่วนที่ 2 คำถามปลายเปิดเกี่ยวกับการรับรู้และการตอบสนองต่อการเรียนโดยใช้โปรแกรมประยุกต์ สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย

1. ในการเรียนโดยใช้โปรแกรมประยุกต์ mListening ท่าน**ชอบ**สิ่งใดบ้าง เพราะเหตุใด

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2. ในการเรียนโดยใช้โปรแกรมประยุกต์ mListening ท่าน**ไม่ชอบ**สิ่งใดบ้าง เพราะเหตุใด

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3. โปรแกรมประยุกต์ mListening ช่วยพัฒนาทักษะการฟังภาษาอังกฤษของท่านหรือไม่ อย่างไร

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4. ท่านมีข้อเสนอแนะอื่นๆ เกี่ยวกับการเรียนโดยใช้โปรแกรมประยุกต์สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วยหรือไม่ อย่างไร

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*******ขอขอบคุณที่ท่านกรุณาให้ความร่วมมือ*****

มหาวิทยาลัยเทคโนโลยีสุรนารี

Questionnaire on Student Needs of English Language Skill Development through the Use of Mobile Phone-Assisted Language Learning Application

Directions:

This questionnaire is used to survey student need of English language skill development through the use of mobile phone-assisted language learning application. You are free to answer the questions and your answers will be very useful for the research and development of the English language instruction through the mobile phones. This questionnaire was divided into three parts. Please study each item carefully, then fill out or check (✓) in the space corresponding to your opinions and truth.

Part 1: Personal Background

1. Age ……..
2. Education
   - ○ Matthayomsuksa 6 (High School)
   - ○ Vocational Certificate
   - ○ Level 3 of Pali Studies

   Institution ……
   District……Province……...
   Year of Graduation ……..
3. In your opinion, what is your level of English language proficiency?
   - ○ Poor
   - ○ Fair
   - ○ Good
   - ○ Very good

4. Which sources do you use to develop your English language skills?

(You can select more than one.)

- ☐ Textbooks
- ☐ Textbooks with audio
- ☐ VDO or DVDs
- ☐ Language lessons on the Internet
- ☐ Computer-Assisted Language Learning materials
- ☐ Mobile Assisted Language Learning materials
- ☐ Others (Please specify.) .....

.....

5. From 4, how often do you develop your English language skills?

- ○ Everyday
- ○ 2-3 times a week
- ○ 2-3 times a month
- ○ Others (Please specify.) .....

6. Do you have a touch-screen mobile phone?

- ○ No
- ○ Yes (Please specify.)

Brand .....

Model .....

Operating System ○ iOS

○ Android

○ Others (Please specify.) .....

มหาวิทยาลัยเทคโนโลยีสุรนารี

Part 2: Needs of English Language Development through the Use of Mobile Phone-Assisted Language Learning Application

1. Do you need to develop your English language skills through the use of mobile phone-assisted English language learning application?
   - ○ Very much
   - ○ Moderately
   - ○ A little
2. Which of the following skills do need the most to develop? Write 1, 2, 3, and 4 to arrange the skills in the order of importance.

   4 = Very important 3 = Important

   2 = A little important 1 = Slightly not important

   ..... Listening

   ..... Speaking

   ..... Reading

   ..... Writing

3. Which contents of English language do you want to put in the mobile phone-assisted English language learning application?

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Part 3: Other suggestions about the English language skill development through the mobile phone-assisted English language learning application

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มหาวิทยาลัยเทคโนโลยีสุรนารี

แบบสอบถาม (Thai)

เรื่อง ความต้องการในการพัฒนาทักษะภาษาอังกฤษ

โดยใช้โปรแกรมประยุกต์บนโทรศัพท์เคลื่อนที่

คำชี้แจง

แบบสอบถามนี้ใช้สำหรับศึกษาความต้องการของพระนิสิตในการพัฒนาทักษะภาษาอังกฤษโดยใช้โปรแกรมประยุกต์ (Application) สำหรับการเรียนภาษาอังกฤษบนโทรศัพท์เคลื่อนที่ ท่านมีอิสระในการตอบคำถาม คำตอบของท่านจะมีคุณค่ายิ่งต่อการวิจัยและพัฒนาการเรียนการสอนภาษาอังกฤษโดยใช้โทรศัพท์เคลื่อนที่ช่วย แบบสอบถามนี้แบ่งออกเป็น 3 ส่วน โปรดศึกษาข้อความในแต่ละข้อให้เข้าใจ แล้วทำเครื่องหมาย (✓) ในช่องที่ตรงกับความคิดเห็นและเป็นจริงเกี่ยวกับตัวท่านมากที่สุด หรือกรอกข้อมูลให้ครบสมบูรณ์ทุกข้อ

ส่วนที่ 1 ข้อมูลส่วนบุคคล

1. อายุ ..... ปี
2. สำเร็จการศึกษาระดับ
   - ○ ม. 6
   - ○ ปวช.
   - ○ ป.ธ. ๓
   - ○ อื่นๆ (โปรดระบุ) .....

   จากสถานศึกษาชื่อ .....

   อำเภอ ..... จังหวัด .....

   เมื่อปี พ.ศ. .....
3. ท่านคิดว่า ทักษะภาษาอังกฤษของท่านอยู่ในระดับใด
   - ○ น้อย (มีปัญหาในการฟัง พูด อ่าน เขียน)
   - ○ พอใช้ (ฟัง พูด อ่าน เขียน ได้เล็กน้อย)
   - ○ ดี (ฟัง พูด อ่าน เขียน ได้ค่อนข้างดี)
   - ○ ดีมาก (ฟัง พูด อ่าน เขียน ได้อย่างคล่องแคล่ว)

มหาวิทยาลัยเทคโนโลยีสุรนารี

4. ท่านมีวิธีพัฒนาทักษะภาษาอังกฤษด้วยตนเองอย่างไรบ้าง (ตอบได้มากกว่า 1 วิธี)

☐ ศึกษาจากหนังสือหรือตำราภาษาอังกฤษ

☐ ศึกษาจากหนังสือหรือตำราที่มีเสียงประกอบ

☐ ศึกษาจากสื่อวิดีโอภาษาอังกฤษ

☐ ศึกษาจากบนเรียนทางอินเทอร์เน็ต

☐ ศึกษาจากบทเรียนคอมพิวเตอร์ช่วยสอนภาษาอังกฤษ

☐ ศึกษาจากโปรแกรมประยุกต์ (App/Application) สำหรับการเรียนภาษาอังกฤษบนโทรศัพท์เคลื่อนที่

☐ อื่น ๆ (โปรดระบุ) .....

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5. จากข้อ 4 ท่านพัฒนาทักษะภาษาอังกฤษด้วยตนเองบ่อยแค่ไหน

○ เป็นประจำทุกวัน

○ 2-3 ครั้งต่อสัปดาห์

○ 2-3 ครั้งต่อเดือน

○ อื่นๆ (โปรดระบุ) .....

6. ท่านมีโทรศัพท์เคลื่อนที่ระบบหน้าจอสัมผัสหรือไม่

○ ไม่มี

○ มี (โปรดระบุ)

ยี่ห้อ .....

รุ่น .....

ระบบปฏิบัติการ ○ iOS ของบริษัทแอปเปิ้ล (Apple Inc.)

○ Android ของบริษัทกูเกิ้ล (Google Inc.)

○ อื่น ๆ (โปรดระบุ) .....

มหาวิทยาลัยเทคโนโลยีสุรนารี

ส่วนที่ 2 ความต้องการในการพัฒนาทักษะภาษาอังกฤษโดยใช้โปรแกรมประยุกต์บนโทรศัพท์เคลื่อนที่

1. ท่านมีความสนใจในการพัฒนาทักษะภาษาอังกฤษโดยใช้โปรแกรมประยุกต์สำหรับการเรียนภาษาอังกฤษบนโทรศัพท์เคลื่อนที่มากน้อยเพียงใด
   - ○ มาก
   - ○ ปานกลาง
   - ○ น้อย
2. ในการพัฒนาทักษะภาษาอังกฤษ ท่านต้องการพัฒนาแต่ละทักษะมากน้อยเพียงใด โปรดเรียงลำดับความต้องการจากมากไปหาน้อย ด้วยลำดับตัวเลข ดังนี้

   4 = มากที่สุด 3 = มาก 2 = น้อย 1 = น้อยที่สุด

   ..... ฟัง
   ..... พูด
   ..... อ่าน
   ..... เขียน
3. ท่านต้องการให้บรรจุเนื้อหาใดของภาษาอังกฤษลงในโปรแกรมประยุกต์สำหรับการเรียนภาษาอังกฤษบนโทรศัพท์เคลื่อนที่ (โปรดระบุ)

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ส่วนที่ 3 ข้อเสนอแนะอื่นๆ เกี่ยวกับการพัฒนาทักษะภาษาอังกฤษโดยใช้โปรแกรมประยุกต์บนโทรศัพท์เคลื่อนที่

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ขอขอบคุณที่ท่านให้ความร่วมมือเป็นอย่างดี

มหาวิทยาลัยเทคโนโลยีสุรนารี

Appendix M

Guided Questions for Semi-Structured Interview

Student : _____

1. Do you like learning through the mListening application? Why?	
2. Does the mListening application make you convenient for practicing English listening skills? How?	
3. Is the mListening application beneficial for developing English listening skills? How?	
4. Are the aspects of listening activities in the mListening application interesting? How?	
5. Do you have any suggestions for revising and developing the mListening application? How?	

Signature.....Instructor/Researcher
(.....)
...../...../.....

มหาวิทยาลัยเทคโนโลยีสุรนารี

แบบสัมภาษณ์กึ่งโครงสร้าง (Thai)

เรื่อง การรับรู้และการตอบสนองต่อการเรียนโดยใช้โปรแกรมประยุกต์ สำหรับการฟังภาษาอังกฤษใช้โทรศัพท์เคลื่อนที่ช่วย

1. ท่านชอบการเรียนโดยใช้โปรแกรมประยุกต์ mListening หรือไม่ เพราะเหตุใด	
2. โปรแกรมประยุกต์ mListening ช่วยให้ท่านเกิดความสะดวกในการฝึกทักษะการฟังภาษาอังกฤษหรือไม่ อย่างไร	
3. โปรแกรมประยุกต์ mListening มีประโยชน์ต่อการพัฒนาทักษะการฟังภาษาอังกฤษหรือไม่ อย่างไร	
4. รูปแบบกิจกรรมการฟังภาษาอังกฤษในโปรแกรมประยุกต์ mListening น่าสนใจหรือไม่ อย่างไร	
5. ท่านมีข้อเสนอแนะสำหรับการปรับปรุงและพัฒนาโปรแกรมประยุกต์ mListening หรือไม่ อย่างไร	

Signature.....Instructor/Researcher
(.....)
...../...../.....

CURRICULUM VITAE

Mr. Suriyawuth Suwannabubpha was born on February 27, 1981. He received a Bachelor of Arts in English from Mahachulalongkornrajavidyalaya University in 2003 and a Master of Arts in English Language Studies from Suranaree University of Technology in 2006. In 2007, he studied for the Degree of Doctor of Philosophy in English Language Studies at the School of Foreign Languages, Institute of Social Technology, Suranaree University of Technology, Thailand. His special interests include Computer-Assisted Language Learning (CALL) and Mobile Assisted Language Learning (MALL).

มหาวิทยาลัยเทคโนโลยีสุรนารี