Comparison of Performance on Listening Test Between Paper-based and Web-based Methods

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Thesis Title	Comparison of Performance on Listening Test Between Paper-based and Web-based Methods
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I hereby certify that this work has not been accepted in substance for any degree, and is not being currently submitted in candidature for any degree.

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ชื่อวิทยานิพนธ์ การเปรียบเทียบผลการทดสอบฟังระหว่างการสอบฟังแบบตอบในกระดาษคำตอบกับการสอบฟังผ่านเว็บไซต์
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บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์เพื่อ 1) เปรียบเทียบผลการทดสอบฟังภาษาอังกฤษระหว่างการสอบแบบตอบในกระดาษคำตอบกับการสอบแบบตอบผ่านเว็บไซต์ 2) ศึกษาความสัมพันธ์ระหว่างคะแนนที่ได้จากการสอบฟังกับรูปแบบของการสอบที่ผู้เข้าสอบชอบ และ 3) ศึกษาความสัมพันธ์ระหว่างคะแนนการสอบฟังผ่านเว็บไซต์กับทัศนคติและความคุ้นเคยต่อการใช้งานคอมพิวเตอร์และอินเตอร์เน็ต กลุ่มตัวอย่างคือนักเรียนระดับชั้นมัธยมศึกษาปีที่ 5 ปีการศึกษา 2558 จำนวน 200 คน ข้อมูลวิจัยได้จากกลุ่มตัวอย่างทำแบบทดสอบฟังแบบคู่ขนานจำนวนสองครั้ง ครั้งแรกจัดสอบในรูปแบบการตอบในกระดาษคำตอบและครั้งที่สองจัดสอบผ่านเว็บไซต์ ข้อมูลวิจัยเพิ่มเติมได้จากการตอบแบบสอบถามของกลุ่มตัวอย่างเกี่ยวกับรูปแบบการสอบที่ชอบ ทัศนคติและความคุ้นเคยต่อการใช้งานคอมพิวเตอร์และอินเตอร์เน็ต ผลการวิจัยพบว่า ในภาพรวมของกลุ่มตัวอย่าง ระดับคะแนนการสอบฟังจากทั้งสองรูปแบบไม่มีความแตกต่างอย่างมีนัยสำคัญทางสถิติ ในส่วนของความสัมพันธ์ของความชอบในรูปแบบการสอบกับคะแนนที่ได้ พบว่ากลุ่มตัวอย่างที่ชอบรูปแบบการสอบแบบตอบในกระดาษคำตอบ ทำคะแนนในการสอบในรูปแบบนี้ได้ดีกว่าการสอบผ่านเว็บไซต์อย่างมีนัยสำคัญทางสถิติ ($t = 3.59$, $P < .01$) ในขณะที่กลุ่มที่ชอบการสอบผ่านเว็บไซต์ คะแนนการสอบทั้งสองรูปแบบไม่มีความแตกต่างกัน นอกจากนี้ยังพบว่ามีความสัมพันธ์ในระดับต่ำอย่างมีนัยสำคัญทางสถิติของคะแนนการสอบผ่านเว็บไซต์กับทัศนคติและความคุ้นเคยต่อการใช้งานคอมพิวเตอร์และอินเตอร์เน็ต

คำสำคัญ: การสอบฟัง, การสอบแบบตอบในกระดาษคำตอบ, การสอบผ่านเว็บไซต์, ผลการทดสอบการฟัง, รูปแบบการสอบที่ชอบ

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ABSTRACT

This study aimed to: 1) compare listening test performance conducted via paper-based and web-based methods, 2) investigate the relationship between the test takers' test channel preference and performance on listening test, and 3) examine the relationship between both computer and Internet familiarity, and also attitude towards the use of computer and Internet, with the performance on web-based listening tests. The participants included 200 grade 11 students in 2015 academic year. The research data was obtained through two parallel listening tests which were administered via an audio player in a normal classroom and via the Internet in a computer center respectively. Additional data from the questionnaire for test channel preference, for computer and Internet familiarity, and for attitude towards the use of computer and Internet was gathered from participants after completion of the test. The results revealed that there were no significant differences between test takers' performance on paper-based versus web-based testing. In terms of the relationship between test channel preference and their test performance, test takers who were in favor of paper-based tests performed significantly better on their preferred test channel than on the web-based test ($t = 3.59$, $P < .01$) while those who preferred web-based testing did not perform significantly differently. The study also revealed that there was a low significant relationship between listening test performance and test takers' computer and Internet familiarity and attitude towards the use of computer and Internet.

Keywords: Listening Test, Paper-based Testing, Web-based Testing, Test Performance, Test Channel Preference

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This thesis is based on the following paper:

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เรื่อง แจ้งผลการพิจารณาบทความเพื่อจัดพิมพ์เผยแพร่ในวารสารวิชาการ Veridian E - Journal, Silpakorn University ฉบับ International (Humanities, Social Sciences and Arts) ปีที่ 9 ฉบับที่ 5 เดือนกรกฎาคม – ธันวาคม 2559

เรียน นายสุเจน ปานจันทร์

ตามที่ท่านได้ส่งบทความเรื่อง **"Thai Learners' Performance on Listening Test: A Comparison of Paper-based and Web-based Testing"** เพื่อพิจารณาจัดพิมพ์เผยแพร่ ในวารสารวิชาการ Veridian E - Journal, Silpakorn University ฉบับ International (Humanities, Social Sciences and Arts) ปีที่ 9 ฉบับที่ 5 เดือนกรกฎาคม – ธันวาคม 2559 นั้น

ในการนี้ บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร ขอเรียนให้ทราบว่าผู้ทรงคุณวุฒิได้พิจารณาบทความของท่านแล้ว **เห็นสมควรให้ตีพิมพ์เผยแพร่บทความ**ดังกล่าวในวารสารวิชาการ Veridian E - Journal, Silpakorn University ฉบับ International (Humanities, Social Sciences and Arts) ปีที่ 9 ฉบับที่ 5 เดือนกรกฎาคม – ธันวาคม 2559 บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร ได้

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1. INTRODUCTION

Listening is one of the most important fundamental language skills for human beings. People spend 40-50% of their communication time on listening and spend the rest on speaking, reading, and writing (25-30%, 11-16%, and 9%) respectively (Mendelsohn, 1994). Listening is also a central to the lives of students throughout all levels of educational development because it plays an important role in facilitating learning (Coakley & Wolvin, 1997; Wu, 2005). Students from kindergarten through high school are expected to listen 65-90 percent of their learning time and both inside and outside the classroom, listening consumes more of daily communication time than any other form of verbal communication (Gilbert, 1988; Wolvin and Coakley, 1988). Without listening skills, learners never learn to communicate effectively (Nunan, 1998).

However, listening is a highly complex mental process that involves perception, attention, cognition, and memory. Listeners have to employ all types of knowledge to interpret meaning, identify the level of stress and intonation, understand vocabulary and grammatical structures, recognize and remember what they have heard (Byrnes, 1984; Vandergrift, 1999). Therefore, in language acquisition, comprehending sound and speech in a foreign language is quite a difficult task for EFL learners. Due to the differences between the phonological system and linguistic structure of L1 and L2, foreign language learners must process the incoming information using linguistic rules and patterns that they have not mastered (Shang, 2008; Thomas & Dyer, 2007).

Moreover, listening skills are not important parts of many course books or curricula and teachers do not seem to pay attention to this skill while designing their lessons (Hamouda, 2013). This may cause EFL learners to have serious problems in English listening comprehension because school and university pay more attention to English grammar, reading, and vocabulary. The teaching of listening comprehension has long been a "somewhat neglected and poorly taught aspect of English in many EFL programs" (Mendelsohn, 1994, p. 9). According to Thomas and Dyer (2007), one of the reasons why listening is a skill that tends to be neglected is the feeling among

language teachers that this skill is automatically acquired by the learner as he/she learns to speak the language.

To measure listening comprehension, most teachers use listening tests to evaluate the listening proficiency. However, listening is not an easy skill to test because it is less convenient and more technically complicated than conducting reading or writing tests. Listening tests require suitable input material with a good quality sound system which can affect understanding of listening (Coniam, 2006). The listening room should support several acoustic functions and the sound system should transmit voices to the listeners via both direct and reflected sounds. According to Waye et al. (2015), the direct sounds are most important for listeners who sit close to the speaker and reflected sounds are more important for distance listeners. However, in general, most classrooms do not have multimedia systems or suitable resources such as computer, smart board and listening laboratory to support listening tests.

Listening comprehension is a very complex process of recognizing the sound of language. In order to measure it, the test developer must first understand how that process works and then design a test that somehow measures that construct of the process (Buck, 2001). In general, it seems rather odd to test listening separately from speaking or writing, because they usually go together in oral interaction. However, there may be situations where speaking is not called for, such as listening to the radio, listening to lectures, or listening to announcements (Heaton, 1988). The problems in constructing listening tests arise out of the nature of spoken language where listeners can not move backwards or forwards over the conversations (Hughes, 1989).

With the rapid development of Information and Technology (IT), computer-based tests have been used in language testing. Since early 80's, computers as a testing medium have attracted the attention of psychometricians because they allow the application of items response theory for delivering adaptive tests, which can often pinpoint a test taker's ability level faster and with greater precision than a paper-based tests (Brown 1997 cited in Roever, 2001; Wainer, 2000). Computers and devices such as mobile phones, personal digital assistants (PDAs), palmtops, smartphones, tablets

and netbooks are becoming important resources for learners and are now widely used in language education (Nikou & Economides, 2013).

Besides the traditional paper-based test, there are several types of assessment using technology to administer. For example, in a computer-based test, assessment can be delivered via a standalone computer or a closed network computer (Roever, 2001). In addition to computer-based test, web-based test is an assessment that can be delivered via the Internet. The test takers can access the tests by making use of web-browser software to login to the system (Nikou & Economides, 2013). Moreover, with the advance of technology, computerized adaptive testing (CAT) is another way of testing. In other words, the computer can select and present test items to the test takers according to the estimated level of their language ability (Dunkel, 1999).

The web-based test system comprises both server and client side. The test application has been developed using various programming languages such as Hypertext Markup Language (HTML), Visual Basic, PHP: Hypertext Preprocessor (PHP), and Javascript (Kalogeropoulos et al., 2013). Question items including sound clips can be uploaded to the server by the test developer. All options and the correct answers will be marked and stored in the database. The clients' computers used by the test takers receive the information from the server and display it on the screen, where the test takers can read and listen to the sound clip via their headphone. As the test takers send back their answer for each item to the system, their response will be transferred to compare with the information that is stored in the database on the server side. The system can process the data and provide immediate feedback or display after completion of the test. At the end of the test, all statistics gathered during the test procedure may be shown or sent to the test takers via their email (Roever, 2001).

Using technology in assessment can provide many potential advantages, including decreased scoring errors, increased opportunity to process data online, and improvement in reliability (Newton et al., 2013). In terms of test administration, testers can administer assessments to several participants at one time, resulting in saving time, paper or personnel resources. In comparison with the traditional paper-based test, using

technology in assessment can enable the use of multimedia features, which are not usable in the paper-based test format (Kalogeropoulos et al., 2013). In addition, computer-based test and web-based test can provide feedback both on each test taker's response or on the test result immediately upon completion of the test. Moreover, using technology in testing can randomize choices from large question-pools, innovate item formats, automate scoring and reporting, and enhance advanced security (Roever, 2001; Nikou & Economides, 2013).

Given the advantages of using computer technology for educational assessment, there are great changes from the traditional mode of assessment to the modern method. Many institutions are migrating toward the use of computer-based tests. Therefore, they have changed their test platform from traditional paper-based test to technology-based test. For example, the Test of English as a Foreign Language (TOEFL) has changed its test format to the Internet-based test (Coniam, 2006). The University of Cambridge Local Examination Syndicate's (UCLES) CommuniCAT Tests and the International English Language Testing System Test (IELTS) have been changed into computerized format (Coniam, 2006; Hosseini et al., 2014). In addition, a computer-based test is also used for many examinations in many areas such as education, the military, careers and licensing programs (Russo, 2000; Trotter, 2001).

However, there are concerns that should be considered when assessing language skills by using technology-based methods. Several factors have been found to affect performance and lead to difficulties when taking the tests, such as equivalence of scores across methods of test administration or level of computer experience and familiarity with technology of the test takers (Hosseini et al., 2014). Factors originated from test takers themselves, such as different styles of learning, individual ways of collecting, organizing and processing information, and individuals' attitudes towards using computer and technology have also been argued to influence test performance (Chan, 2013; Newton et al., 2013).

The findings from past research on equivalence of scores across methods of test administration are still inconclusive. For example, it was found that, for a dental hygiene course unit in midterm examination, the computer-based tests

scores were greater than those of paper-based tests (DeAngelis, 2000). On the contrary, Gwaltney et al. (2008) reported lower scores on the computer-based tests version of their patient outcome measures compared to the paper-based tests version. Some studies reported non-significant differences between computer-based and paper-based tests result, supporting computer-based tests as a valid and acceptable testing mode (Fyfe et al., 2009; Mason et al., 2001; Schaeffer et al., 1993).

Computer experience and familiarity in the use of computers are also important predictors of learners' achievement in online learning and testing. Younger learners may feel more comfortable learning from technology-based environment as opposed to sitting still listening to a teacher for an hour or more (Lam, 2009). Many researchers have already investigated the relationship between computer usage ability and computer-based test result. Yurdabakan (2012) reports that students with poor computer skills show low achievement in computer-based test. However, in some studies, there was no significant relationship between the level of computer familiarity and the performance on computer-based tests (Boo, 1997; Taylor et al., 1999).

Many studies have focused on investigating learners' attitudes towards the use of computer and Internet as a tool for learning a second language. Generally, the studies report that most learners have positive attitudes towards the use of the Internet. For example, in the survey of the second-year undergraduate students' attitudes towards the use of computer and Internet in Malaysia by Hong et al. (2003), most students have positive attitudes toward using the Internet for learning. In another survey with students who learn English as a foreign language by Aydin (2007), 97.4% of the students agree that computer and Internet is a universal digital library, and 96.5% agree that the Internet is the fastest way to reach knowledge, and as for language learning, 77% agree that the Internet has the potential to be an effective training tool.

Learners' attitudes toward the computer play a crucial role that influences the effectiveness of language learning. Lasagabaster and Sierra (2003) report a positive relationship between student's attitudes toward Computer Assisted Language Learning (CALL) and effectiveness of their language learning. Smith (2000), in a study examining students' response to CALL as a language learning approach, concludes that

students' positive response to CALL helps them benefit more in language learning. However, some learners resist the use of CALL in language learning due to negative attitudes resulting from the anxiety of using computer (Bloom, 1985).

According to the policy of The Office of the Basic Education Commission (OBEC) to reform English teaching in schools, students and teachers are encouraged to use technology as tools for language development and assessment (OBEC, 2013). However, the introduction of computer-based and web-based learning and testing may have caused certain difficulties among teachers and students, due to their unfamiliarity with computer-based and web-based learning and testing style, as well as some unexpected technological issues. Therefore, computer-based and web-based resources may not be commonly used in Thai schools, even in schools where technology facilities are readily available. Moreover, it is necessary for students to practise listening as a basic skill for their further study and career, since English plays a vital role in most workplaces (Pratoomrat & Rajprasit, 2014).

Although there is a large body of comparative studies on paper-based and web-based testing, most studies were conducted in other countries. Particularly on listening performance, there is relatively little research of comparative studies on the paper-based and web-based test performance in a Thai context. Moreover, little research has been conducted to investigate the interaction between the test delivery modes and test takers' preference. As discussed above, the comparisons of using technology in testing are still inconclusive. Some studies have reported a significant difference between the two testing modes while others researchers have concluded the opposite (DeAngelis, 2000; Fyfe et al., 2009; Gwaltney et al., 2008; Mason et al., 2001; Schaeffer et al., 1993). Accordingly, it is necessary for this research to investigate whether the use of traditional paper-based testing and web-based testing to test listening ability would affect test takers' performance or not.

2. PURPOSES OF THE STUDY

The purposes of this current study were to:

1. compare the test takers' performance on listening tests conducted via paper-based and web-based methods.

2. identify any relationship between the test takers' test channel preference and their performance on the listening test.

3. identify any relationship between the test takers' computer and Internet familiarity and their performance on the web-based listening test.

4. identify any relationship between the test takers' attitudes towards the use of computer and Internet and their performance on the web-based listening test.

3. RESEARCH QUESTIONS

The study was designed to answer the four following research questions:

1. Was there any statistically significant differences between test takers' performance on paper-based and web-based listening tests?

2. Was there any relationship between the test takers' preference for test channel and their performance on listening test?

3. Was there any relationship between the test takers' familiarity with computer and Internet and their performance on the web-based listening test method?

4. Was there any relationship between the test takers' attitudes towards the use of computer and Internet and their performance on the web-based listening test method?

4. SIGNIFICANCE OF THE STUDY

It was hoped that the findings from this study may provide beneficial guideline and useful information to language teachers, test developers, test administrators, educators, and institutions for developing and using appropriate testing channels to evaluate their students' listening ability. Moreover, the findings may help the instructors, test developers and school administrators to realize the effect of test channel preference, of familiarity with computer and Internet, and of attitudes towards the use of computer and Internet on test performance, in order to better prepare both test environment and the students for future testing situations.

5. RESEARCH METHODOLOGY

5.1 Population

The population of this study were 400 grade 11 (Matthayom 5) students. They were studying in the 2015 academic year at Satri Phatthalung School, Phatthalung Province, South of Thailand.

5.2 Subjects

The subjects in this study were 200 grade 11 (Matthayom 5) students, 53 males (26.50%) and 147 females (73.50%), aged from 16-18. They were selected by using simple random sampling method based on Yamane's formula (Yamane, 1967).

5.3 Research Instruments

5.3.1 Listening test

Two parallel Cambridge Preliminary English Tests (PET) were used to assess the participants' listening performance. One was administered via a paper-based method and the other one was administered via a web-based method. Each of the two tests lasted about 30 minutes. The tests consisted of 25 items of multiple-choice, gap-filling and true or false formats. The details of the two parallel listening tests are as follows:

Table 1: Listening test content and overview of the two tests

Part	Content	Test focus
1	There are 7 questions, each with an audio clip and 3 pictures. Test takers have to listen to the clip and decide which picture shows what they hear.	Assessment of test takers ability to understand dialogues and monologues in both informal and neutral settings on a range of everyday topics.
2	Test takers listen to a longer audio clip and answer 6 multiple-choice questions.	
3	There is an audio clip and 6 sentences, each with a gap. Test takers have to listen for information to complete the sentences.	
4	There is an audio clip of 2 people talking and 6 questions. Each question makes a statement about the clip, and test takers must decide whether it is true or false.	
Time: About 30 minutes		Source: Cambridge English: Preliminary (PET)

5.3.2 The questionnaire

The questionnaire, adapted from the Computer Attitude Scale (CAS) developed by Loyd and Gressard (1984) was used to collect information from the test takers. The questionnaire composed of three parts. The first part contained general information about the test takers including age, gender and preference for listening test channel. The second section assessed test takers' attitudes toward computer and Internet. There were 30 items in this section. The items were used to measure the test takers' anxiety, confidence, liking and attitude toward the usefulness of computers and Internet. These items were measured on a 4 point Likert scale. The last section of the questionnaire comprised 2 main parts, categorized in frequency and comfort, in order to investigate the test takers' computer and Internet familiarity.

The questionnaire had already been piloted with 40 grade 10 (Mattayom 4) students at Satri Phatthalung School who were not the subjects of this study. The Cronbach's Alpha coefficient of relaibility for the questionnaire is presented in Table 2.

Table 2: Summary of the results of reliability of questionnaire items

Questionnaire items	Cronbach's Alpha	Number of Items
1) Attitudes towards the use of computer and Internet	.794	30
2) Familiarity with computer and Internet (Frequency)	.640	9
3) Familiarity with computer and Internet (Comfort)	.786	2

5.4 Data Collection

The study was conducted in the second semester of the 2015 academic year. The paper-based listening test was first administered to the 200 test takers via an audio player in a normal classroom. Then, in the following week, the participants took the web-based listening test through the learning management system (LMS) of the school. The test takers could access the web-based listening test by logging into the LMS and listening to the questions via headphones individually. To answer gap filling type questions, the test takers had to type their answers using a keyboard into the gap provided on the web page. For multiple choice and true/false question types, they needed to click their mouse to choose the correct answers.

The questionnaire was administered to the participants after the completion of their web-based listening test. All questions for each part in the questionnaire were explained to the participants so they could easily complete the questionnaire. The time of responding to the questionnaire was about 10 minutes. Of the total 200 questionnaires administered, 199 (99.5%) were returned.

5.5 Data Analysis

Descriptive statistics of paired sample t-tests were used to describe the test takers' performance of their two listening tests: paper-based and web-based. Then, independent sample t-test analysis was used to identify the statistics between test takers' test mode preference and their performance on the listening test. Finally, point biserial correlation coefficient was used to analyze the relationship between paper-based and web-based score, with the variable of participants' test mode preference, as well as to analyze the relationship of computer and Internet familiarity and attitudes toward the use of computer and Internet with the performance on web-based listening test.

6. RESULTS

Research Question 1: Was there any statistically significant differences between test takers' performance on paper-based and web-based listening tests?

To answer research question 1, two parallel listening tests were administered to the test takers and paired sample t-tests were used to analyze the score from test takers. Table 3 shows the performance of 200 test takers on paper-based and web-based test methods.

Table 3: Test takers' listening performance on PBT and WBT

Listening Test Channel	Total Score	Mean	S.D.	t	p-value
Paper-Based Test (PBT)	25	10.67	2.97	.451	.652
Web-based Test (WBT)	25	10.57	2.92		

The test takers' average scores on the two tests were compared. From the total score of 25, the test takers' mean score on the paper-based test was 10.67 while that on the web-based test was 10.57. The results of the analysis show a non-significant difference between the test takers' mean scores on the two tests. So, it can be concluded that the participants' listening performance on the paper-based and web-based test were not statistically different. That is, the test mode did not have any effect on the participants' performance.

A detailed analysis was performed to see if there was any significant difference in performance of the test takers with different listening proficiency. Then, the test takers were divided into high and low-proficiency groups based on their scores of the paper-based listening test, which was the traditional test mode delivery they were familiar with. Results are presented in Table 4, with test takers divided into high and low-proficiency groups using 27% formula. Both the high and low groups consisted of 54 test takers.

Table 4: Listening performance of high and low-proficiency test takers based on their paper-based listening test score

Group	Test Modes	Total Score	Mean	S.D.	t	p-value
High	PBT	25	14.46	1.98	4.243**	0.01
	WBT	25	12.54	3.27		
Low	PBT	25	7.33	1.13	-5.379**	0.01
	WBT	25	9.20	2.41		

** significant at the 0.01 level

From the total of 25, the high-proficiency group's mean scores on the paper-based test were significantly higher than that on the web-based test ($\bar{x}$ = 14.46 and $\bar{x}$ = 12.54 respectively, P < 0.01). In other words, the high-proficiency group performed significantly better on the paper-based test than on the web-based listening test. On the other hand, in the low-proficiency group, from the total of 25, their mean scores on the paper-based test was significantly lower than that on the web-based test ($\bar{x}$ = 7.33 and $\bar{x}$ = 9.20 respectively, P < 0.01). That is, the low-proficiency group performed significantly better on the web-based test than on the paper-based test.

Research Question 2: Was there any relationship between the test takers' preference for test channel and their performance on listening test?

In order to answer this research question, the questionnaire was administered to the participants after the completion of two listening tests. Of the 199 test takers who completed the questionnaire, 33 (16.58%) preferred the paper-based test while 166 (83.42%) preferred the web-based test. Independent sample t-test was used to describe the statistics of their listening performance. Details of the relationship between the paper-based test channel preference test takers and their listening scores on their preferred test channel are presented in Table 5.

Table 5: Listening performance by PBT test channel preference's group

PBT Preference (n=33)				t	Sig. (2-tailed)
PBT		WBT			
Mean	S.D.	Mean	S.D.	3.59**	.00
12.30	3.046	10.33	2.859		

** significant at the 0.01 level

Table 6 shows the relationship of web-based test channel preference test takers and the listening scores on their preferred listening test channel.

Table 6: Listening performance by WBT test channel preference's group

Web-based Preference (n=166)				t	Sig. (2-tailed)
PBT		WBT			
Mean	S.D.	Mean	S.D.	-.232	.816
10.45	3.260	10.58	2.861		

Table 5 demonstrates that 33 test takers who were in favor of the paper-based listening test channel performed significantly better on the paper-based listening test ($\bar{X}$ = 12.30) than on the web-based listening test ($\bar{X}$ = 10.33), indicating that their preference on the paper-based listening test might help them to perform well on the paper-based test. However, from Table 6, of 166 test takers who preferred the web-based listening test channel, their mean score on the paper-based test ($\bar{X}$ = 10.45) and the web-based test ($\bar{X}$ = 10.58) were not significantly different.

Point biserial correlation coefficient was used to see if there was any correlation between test takers' test channel preference and their listening performance. Details of the correlation between scores and test channel preference are presented in Table 7.

Table 7: Correlation of scores and test channel preference

Test channel preference	PBT Scores	WBT Scores
	r	r
PBT Preference	.248**	
WEB Preference		.017

** significant at the 0.01 level

As can be seen from Table 7, the overall correlation of scores and test channel preference of test takers who preferred paper-based test was .248, a low but significant correlation. However, for those who preferred the web-based test channel, the correlation was .017 indicating that there was no association between the web-based test channel preference and their web-based test scores.

Research Question 3: Was there any relationship between the test takers' familiarity with computer and Internet and their performance on the web-based listening test method?

In order to answer this research question, point biserial correlation coefficient was used to analyze data obtained from the questionnaire about the familiarity with computer and Internet of the test takers in terms of frequency and comfort. Table 8 shows the results of the analyses.

Table 8: Correlation of the test takers' familiarity with computer and Internet and the performance on the web-based listening test

	Items	WBT	
		r	sig.
Frequency	1. How often do you use the computer at home?	-.001	.492
	2. How often do you use the computer at school?	.022	.378
	3. How often do you use the computer in the learning resource center/library?	-.059	.202
	4. How often do you use the computer at other places?	.041	.283
	5. How often do you use the Internet?	-.027	.353
	6. How often do you use the Internet to help your learning at school?	-.089	.105

		Items	WBT	
			r	sig.
	7.	How often do you use the Internet for social media?	.036	.306
	8.	How often do you use the Internet for games and entertainment?	.036	.305
	9.	How often do you use the Internet for electronic communication (e.g. e-mail or chatting)?	-.059	.204
Comfort	10.	How comfortable are you when you use a computer?	.161*	.011
	11.	How comfortable are you taking a test on a computer?	-.048	.252

* Correlation is significant at the 0.05 level (1-tailed).

Table 8 seems to demonstrate that there is relatively little relationship between test takers' familiarity with computer and Internet and their listening performance since, among the total of 11 items asking about test takers' familiarity, only item 10 is positively and significantly related to the respondents' test performance on web-based test ($r = 0.161$, $P < .05$). Those test takers who were comfortable when using a computer were likely to get a better score on the web-based listening test and vice versa. Therefore, only this item shows that familiarity with computer and Internet might help the test takers to do better on web-based listening test.

Research Question 4: Was there any relationship between the test takers' attitudes towards the use of computer and Internet and their performance on the web-based listening test method?

Point biserial correlation coefficient was used to analyze the relationship between the test takers' attitude towards the use of computer and Internet and their performance in web-based listening tests. Table 9 shows the results of the analyses.

Table 9: Correlation of the test takers' attitudes towards the use of computer & Internet and the performance on the web-based listening test

	Items	WBT	
		r	sig.
1.	I like working with computers.	.135*	.028
2.	I use computers in many aspects of my life.	.051	.237
3.	I like solving new problems on the computer.	.110	.061
4.	The challenge of solving problems with computers appeals to me.	.137*	.027
5.	Learning about computers is worthwhile.	.062	.192
6.	I think working with computers would be enjoyable and stimulating.	.064	.183
7.	Figuring out computer problems appeals to me.	.078	.135
8.	I'll need a firm mastery of computers for my future work.	.000	.498
9.	When there is a problem with a computer that I can't immediately solve, I would stick with it until I have the answer.	.129*	.035
10.	I don't understand how some people can spend so much time working with computers and seem to enjoy it.	-.067	.171
11.	I would feel at ease in a computer class.	.031	.331
12.	I think using a computer would be very hard for me.	.057	.210
13.	Once I start working with the computer, I would find it hard to stop.	.185**	.004
14.	Knowing how to study with computers will increase my learning proficiency.	.027	.352
15.	I could get good grades in computer courses.	.085	.116
16.	I will do as little work with computers as possible.	-.048	.250
17.	If a problem is left unsolved in a computer class, I would continue to think about it afterward.	.140*	.024
18.	It is important to me to do well in computer classes.	-.046	.258

	Items	WBT	
		r	sig.
19.	I have a lot of self-confidence when I work with computers.	.088	.108
20.	Working with computers will not be important to me in my life's work.	-.081	.127
21.	To play or work with a computer is really fun.	.122*	.042
22.	I forget the time, when I am working with the computer.	.003	.481
23.	Knowledge of Internet is essential for students.	-.011	.441
24.	I feel overwhelmed using the Internet in my study.	.105	.069
25.	I feel comfortable with using the Internet.	.082	.123
26.	I have security concern about using the Internet.	.051	.239
27.	Accessing, surfing and browsing the Internet confuse me.	.030	.336
28.	I find the Internet to be as informative as teachers.	-.065	.182
29.	The Internet contains useless information.	.012	.434
30.	Life will be easier and faster with the Internet.	-.001	.495

* Correlation is significant at the 0.05 level (1-tailed).
** Correlation is significant at the 0.01 level (1-tailed).

Table 9 demonstrates that 6 out of 30 items show positive and significant correlations between test takers' attitudes towards the use of computer and Internet and their performance on the web-based listening test (Items 1, 4, 9, 13, 17 and 21). This significant relationship shows that, if the test takers had positive attitudes towards the use of computer and Internet, they were likely to get better scores on the web-based listening test. It can be concluded that attitudes towards the use of computer and Internet help the test takers to do better on web-based listening test.

7. CONCLUSION AND DISCUSSION

The conclusion and discussion will be presented according to the research questions.

The first research question dealt with the effects of two different listening test modes, i.e. paper-based and web-based modes, on test performance. The study revealed that there were no significant differences between participants' performance on the two types of listening test mode delivery. Thus, the test mode did not have any effect on the participants' listening performance. In other words, the result from this study implied that test channel was not found to be a factor affecting the test performance of overall test takers if the test administration condition was equal. That is, test channel difference did not have any effects on test validity. The findings were in line with those reported by Al-Amri (2007) who found that the testing mode had no significant effect on the overall validity of the tests. However, the findings were in contrast with the results from Hosseini et al. (2014) who compared the test score of a computer-based test and a paper and pencil test among English language learners in Iran. The results of their study revealed that participants performed better on paper-based tests than on computer-based test.

The second research question asked whether there was any relationship between the test takers' preference for test channel and their performance on listening test. In terms of test channel preference and listening test performance, among 199 test takers who completed the questionnaire, 33 (16.58%) preferred the paper-based test while 166 (83.42%) preferred the web-based test (see Table 5 and Table 6). Data analyses showed that test takers who were in favor of the paper-based method performed significantly better on the paper-based test than on the web-based test whereas the web-based scores of those who preferred web-based test were not significantly higher than their paper-based scores. Thus, the present study revealed that there was the relationship between test channel preference and test performance in a group of test takers who preferred the paper-based test. However, the correlation between scores and test channel preference reported a low significant correlation of scores and test channel preference ($r = .248$, $p < .01$). It was therefore likely that the

preference in the paper-based test would have enabled the test takers to do better on their preferred test channel, on the other hand, the preference in the web-based test channel did not have any relationships to the listening performance of the test takers. Since there has been no other research on the effects of test channel preference on test performance, the result from this study is still open to questions.

The third research question aimed to investigate the relationship between the test takers' familiarity with computer and Internet and their performance on the web-based listening test method. The results of the study revealed that the relationship between test takers' familiarity and their performance was relatively weak. Among 11 items on familiarity, only one item had any significant correlation with the test takers' performance and that correlation was weak. If the test takers were comfortable when using a computer, they would get a better score on the web-based listening test. However, it might not be sound to conclude that familiarity with computer and Internet helped the test takers to do better on web-based listening test since the correlation was weak. As a result, it may be possible to conclude that the finding seemed to support the study by Al-Amri (2007) who asserted that the construct of computer familiarity has no influence on students' performance on computer-based test.

The fourth research question sought to study the relationship between the test takers' attitudes towards the use of computer and Internet and their performance on the web-based listening test method. The finding revealed that attitudes towards the use of computer and Internet seemed to help those who had positive attitudes because they performed better in the web-based test. Therefore, attitudes towards the use of computer and Internet may help the test takers to do better on web-based listening test. The finding was found to be similar to the study of Usan and Anafartalar (2004) who reported that positive attitudes towards the computer technology helped learners to do assignments more efficiently.

8. IMPLICATIONS AND RECOMMENDATION

Implications and recommendations based on the result of this study can be drawn as follows:

Implications

1. Based on the findings of this study, it could be said that difference in listening test channels were not found to be a factor affecting the listening performance. Therefore, teachers may include web-based testing mode which is an up-to-date method into their listening assessment because this has been proved not to affect test validity.

2. This present study found that test takers' listening proficiency levels might have played an important role in listening test mode deliveries. The high-proficiency group performed significantly better on the paper-based test than on the web-based listening test while the low-proficiency group performed significantly better on the web-based test than on the paper-based test. When assessing learners, teachers and test developers may consider using both test channels with test takers who are different in listening proficiency. Meanwhile, further research needs to be conducted to ensure that the test modes do not affect performance of test takers of different proficiency levels.

3. The fact that 166 out of the 200 participants preferred web-based listening tests would also be useful information for language teachers, test developers, and test administrators to see the need of put into practice the use of technology in testing listening to cater for their students' listening mode preference. As many standardized tests (e.g. TOEFL and IELTS) are now administered online, this can also be a beneficial information for the education administrator to familiarize students with new ways of test taking experience by setting the education and evaluation policy, i.e. investing in test management software or training and supporting unit, as well as improving the technological awareness and utilization of technology-based test at the secondary education level for both the teachers and the students.

Recommendations for further studies

1. Further research needs to be conducted before any conclusion about the effects of using technology-based test channel on test performance can be drawn. The result of this present study calls for more studies on the effects of paper-based and web-based testing deliveries. This is particularly important in Thailand since some standardized proficiency tests have changed their platform from traditional paper-based test to technology-based test, still, the number of studies on this issue is relatively low. Also, studies need to be conducted to examine how technology might affect listening performance, particularly, the possibility that technology might somehow distort or impede the test performance.

2. Further studies on other factors that may influence the test performance such as test takers' test taking strategies and the cognitive processing employed by test takers when they are completing the test tasks.

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APPENDICES

APPENDIX A

Paper-based Listening Test

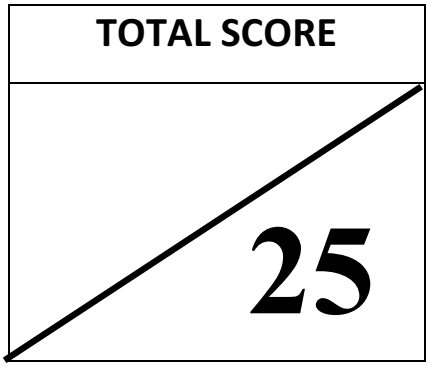
Paper-based Listening Test

Time Allocation: 30 Minutes

Instructions:

- Do not turn over this page until you are told to do so.
- Write your name, class, and student number in the spaces at the top of your answer sheet.
- Answer all the questions on the answer sheet.
- At the end of the test, hand in both this question paper and your answer sheet.
- There are 4 parts in this listening test (25 items).

Part 1: (Multiple-choice)	7 items
Part 2: (Multiple-choice)	6 items
Part 3: (Gap-filling)	6 items
Part 4: (True/False)	6 items



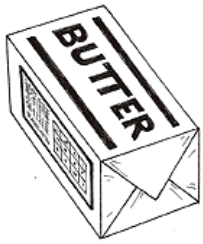
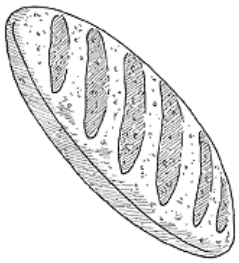
Paper-based Listening Test

<u>Part 1</u>: There are seven questions in this part. For each question, there are three pictures and a short recording. Choose A, B or C to show which is the correct picture.

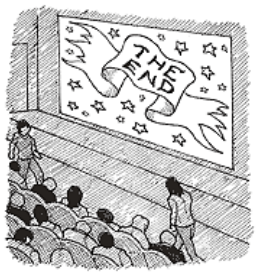
(1) When will the wedding take place?

		
A	**B**	**B**

(2) What is the woman going to buy today?

		
A	**B**	**C**

(3) What is the man going to do on Saturday?

		
A	**B**	**C**

(4) What did the woman do last Sunday?

		
A	**B**	**C**

(5) How did the man book his holiday?

		
A	**B**	**C**

(6) What time is the exam?

		
A	**B**	**C**

(7) What happened on the motorway?

		
A	B	C

<u>Part 2</u>: You will hear a woman called Alice talking on the radio about a new shop. For each question, choose the correct answer A, B or C.

(8) What kind of business has Alice started?

A a restaurant

B a shop with a cafe

C a travel agency

(9) Why did she decide to start the business?

A She wanted to make a lot of money.

B She wanted some experience of selling.

C She wanted to be independent.

(10) When did she decide to start a business?

A when she was abroad

B when she was shopping in England

C when she lived in India

(11) When she goes abroad, she chooses items that are

A expensive.

B unusual.

C easy to carry.

(12) What is Alice planning to do soon?

A open another shop

B employ more people

C sell more food

(13) What does Alice dislike about her new business?

A the number of hours she works

B difficult customers

C having to travel

<u>Part 3</u>: You will hear a man talking to a class of students about a language course. For each question, write the missing information in the numbered space.

FRENCH FOR BEGINNERS

Class numbers:

-Minimum 8 students

-Maximum (**14**)…… students

Day and time: Tuesday, 7.30 p.m.-(**15**)……..……. p.m.

Place: Room 26, second floor (opposite the (**16**)…….. room)

Course book: Title: (**17**)……. French

Price: £8 (If you order now it will arrive on 1st

(**18**)…….

International evening: Each class will provide some

(**19**)……..

<u>Part 4</u>: Look at the six sentences for this part. You will hear a conversation between a young woman, Victoria, and a young man, Peter, about their life at university. Put X under YES if the sentence is correct or NO if it is incorrect.

	YES	NO
(20) At first, Victoria thinks Peter works in a restaurant.		
(21) Peter prefers his new job.		
(22) Peter works fewer hours than he used to.		
(23) Victoria would like to change her job.		
(24) Victoria is doing a part-time college course.		
(25) Peter thinks working at the weekend is a bad idea.		

----End of the test----

Paper-based Listening Test Answer Sheet

Name……..…… Class M. 5/……..….. No. …….

Part 1

	A	B	C
1			
2			
3			
4			
5			
6			
7			

Part 2

	A	B	C
8			
9			
10			
11			
12			
13			

Part 3

FRENCH FOR BEGINNERS

Class numbers:

-Minimum 8 students

-Maximum (**14**)…… students

Day and time: Tuesday, 7.30 p.m.-(**15**)……..……. p.m.

Place: Room 26, second floor (opposite the (**16**)…….. room)

Course book: Title: (**17**)……. French

Price: £8 (If you order now it will arrive on 1st

(**18**)…….

International evening: Each class will provide some

(**19**)……..

Part 4	**YES**	**NO**
(20) At first, Victoria thinks Peter works in a restaurant.		
(21) Peter prefers his new job.		
(22) Peter works fewer hours than he used to.		
(23) Victoria would like to change her job.		
(24) Victoria is doing a part-time college course.		
(25) Peter thinks working at the weekend is a bad idea.		

Paper-based Listening Test (Audio Script)

Part 1

1. When will the wedding take place?

Woman: Are you going to Mike's party on the 14th?

Man: I'm not sure. You see, I'm travelling to Edinburgh on the 15th for my brother's wedding and the train leaves early in the morning. My brother's not actually getting married until the 17th, but I want to spend a bit of time in Edinburgh.

2. What is the woman going to buy today?

Man: Can you get some milk and some butter when you go to the shop, please?

Woman: We don't need any milk, I bought some yesterday. I'll just get butter and bread.

Man: We've got plenty of bread. Don't buy any more.

3. What is the man going to do on Saturday?

Woman: I'm going to the cinema on Saturday afternoon. Do you want to come?

Man: I'd love to, but I need to go shopping. I must buy my mother a birthday present. It's her 60th birthday party on Sunday.

Woman: Well, why don't you go shopping this evening. Then you can come to the cinema.

Man: OK. That's a good idea. I'll do that.

4. What did the woman do last Sunday?

Man: I went to the beach last weekend.

Woman: But it rained! I remember, because we were having a picnic in the park and we had to go home.

Man: That was Saturday. We went on Sunday when it was nice and sunny.

Woman: Oh yes, you're right. I sat in the garden all day.

5. How did the man book his holiday?

Man: I've booked a fantastic holiday in Italy.

Woman: Did you book it on the Internet?

Man: I don't like booking things on the Internet. I phoned the travel agent, told her what I wanted, and she found me something. I'm going there to pick up the tickets next week.

6. What time is the exam?

Woman: It's nearly 1 o'clock. We need to hurry.

Man: But, the exam's not until four.

Woman: No, it starts at two and ends at four.

Man: Really? We'd better hurry up then!

7. What happened on the motorway?

Woman Now here is a report about an accident which has resulted in a fire on the motorway. A car and a van have crashed. The emergency services are at the scene, but it is believed that nobody has been hurt. Motorists are being advised to take a different route.

<u>Part 2</u>

Woman: Hello. My name's Alice Parker and I'm here today to tell you about my new business. It's called Small World and it's in the centre of town. It's different because it isn't just a shop. At the front of the building, we sell clothes, jewellery, wooden animals, wooden boxes, bowls and other interesting items from different parts of the world. Then, at the back, there's a small cafe where we sell different kinds of tea and coffee, from

around the world. We also sell vegetarian snacks, cakes and sandwiches. All the food is home-made using fresh ingredients.

People ask me why I decided to start my own business when starting your own business can be so difficult and when you can't be sure you'll make any money. Well, I've worked for other people in shops and cafes all my life and I wanted to do something on my own. I wanted to work for myself.

I feel that I can be successful because I have good experience of the business world. I've also travelled to many countries including Brazil, Kenya, India and Thailand so I know what people want to buy. In fact, it was while I was in Kenya visiting a street market and looking at the beautiful things there, that I had the idea of starting my own business.

Although there are businesses like mine in many places in Britain, there's nothing like it in this area. Most of the things I sell I've collected myself so you can be sure they are good quality items. I go abroad regularly in order to get more. I look for things that are original and a bit different. I bring a lot of it back myself, although larger items have to be sent. In general, the prices aren't too expensive and I think that there's always something there that most people can afford.

At the moment, I employ one other person to work with me, but as we are becoming busier, I'll probably need to have more staff. I thought about selling food here, too – not just in the cafe, I mean – but a shop selling international food has just opened near here, so I don't think I'll do that right now.

Running your own business is hard work and there are disadvantages. I'm probably working more hours now than I've ever done and that's probably the most difficult thing. But I enjoy meeting people and get on well with my customers, even the difficult

ones, and I like travelling and learning about new cultures. It's great to go to work each day and do something that I'm really interested in. I can definitely recommend it to anyone!

Part 3

Man: Hello, everybody and welcome to the class. I'm pleased to see so many of you here today. But don't worry, there won't be any more of you! There's always a maximum of 15 in the class, and a minimum of eight. Before we start, I'd like to tell you about the course. Some of the information you'll probably know already, but some of it has changed.

Your class will still be on Tuesday evenings but it won't start at 7 o'clock, it will start at the later time of 7.30, and will end at 9.30, not 9 o'clock. I hope that change is OK for everyone. Unfortunately, I can't be here any earlier than that. Another change is the room. Next week we need to move to the second floor to the room opposite the art room. That's Room 26. Today is the only time we'll be here in Room 12. The course book will be the same as before, that is Starting French. I see some of you have already bought it – that's good. However, if you want to buy it from us, it costs £8. You can order it today, but it takes two weeks so you won't have it until 1st October.

One more thing … during the last week of term there is an International Evening at the college. There will be traditional dancing from different countries and every class is asked to provide some food. I thought we could take some French cheese, but any other suggestions are welcome.

And finally, let me remind you that most of your lessons will be completely in French. So, let's begin …

Part 4

Victoria: Hello, Peter. You look smart. Have you just come from the restaurant?

Peter: I left that job ages ago. I'm working in the college library now. It's still part-time as I haven't finished my course yet, but the job is much better. It's easier than being a waiter.

Victoria: But you got free food at the restaurant!

Peter: Well, yes, the food was good, but the hours were terrible!

Victoria: Did you work a lot of hours?

Peter: No, I only used to work about ten hours a week, but they wanted me to work late at night. I sometimes used to work until midnight.

Victoria: Oh, how many hours do you do now?

Peter: Well, I work the same number of hours, but they're always during the day. I don't have classes every day, so it's fine. What about you? Are you working at the moment?

Victoria: Yes, I've got a part-time job in a supermarket. It's the big one in town, next to the post office.

Peter: Yes, I know it. I sometimes shop there. Do you like it?

Victoria: Not really. The job's boring, but the pay's all right, and the hours are good so I think I'll keep doing it. I have to earn some money!

Peter: When do you work?

Victoria: On Friday evenings and every Saturday.

Peter: Every Saturday?

Victoria: I'm at college all day every day and I study most evenings, so I can't work during the week. It has to be on Saturdays.

Peter: I'd hate to give up my weekends. I like going out in the evenings, and then staying in bed all day.

Victoria: Well, I can stay in bed on Sunday mornings.

Peter: So you don't study on Sundays?

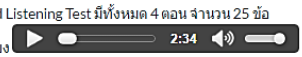
Victoria: Well, yes, but not until the afternoon. I have to have some time to relax!

APPENDIX B

Web-based Listening Test

Web-based Listening Test

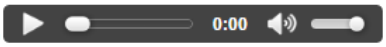
คำแนะนำในการทำแบบทดสอบ

1. แบบทดสอบการฟัง Web-based Listening Test มีทั้งหมด 4 ตอน จำนวน 25 ข้อ
2. คลิกที่นี่เพื่อทดสอบสัญญาณเสียง 

3. ปรับระดับเสียงของหูฟังให้เหมาะสมกับการได้ยิน
4. เมื่อได้ระดับเสียงที่พอใจแล้ว ให้คลิกปุ่ม "Click to START (คลิกเพื่อเริ่มทำแบบทดสอบ)"
5. หลังจาก คลิกปุ่ม START แล้ว ระบบจะเล่นไฟล์เสียงโดยอัตโนมัติ ให้ตั้งใจฟังคลิปเสียง และตอบคำถาม ตั้งแต่ ข้อที่ 1-25
6. เมื่อทำแบบทดสอบเสร็จในแต่ละตอนให้คลิกปุ่ม "Submit Your Answers" เป็นอันเสร็จขั้นตอนการทำแบบทดสอบในตอนนั้นๆ

Click to START (คลิกเพื่อเริ่มทำแบบทดสอบ) | ออกจากระบบ

Part 1 : There are seven questions in this part. For each question there are three pictures and a short recording. Click on A, B or C to show which is the correct picture. (Question 1-7)



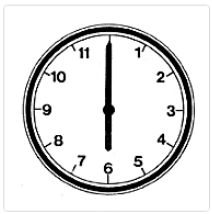
1. What is the woman going to buy today?


○ A


○ B


○ C

2. What time did Sarah finish work today?


○ A


○ B


○ C

3. What is the woman planning to do at the weekend?

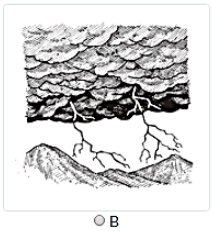

○ A


○ B


○ C

4. What is the weather going to be like this afternoon?

A



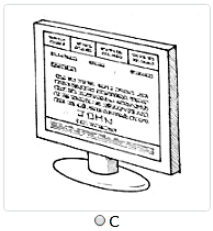
B

C

5. How did the man find out about the play?

A

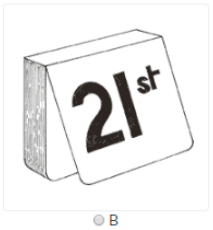
B



C

6. When's the man's first guitar lesson?

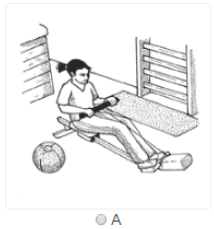
A



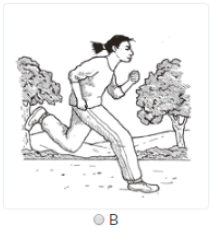
B

C

7. How does the woman usually keep fit?



A

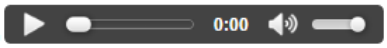


B

C

Submit Your Answers

Part 2 : You will hear an interview with the manager of a new leisure centre. For each question, click on the correct answer A, B or C. (Question 8-13)



8. Why is the leisure centre already so popular?

- A. It's the only leisure centre in the area.
- B. People have heard a lot about it.
- C. It has an excellent gym.

9. What will be added to the leisure centre soon?

- A. two new swimming pools
- B. a diving area
- C. a pool for children

10. The manager wants to improve the gym by...

- A. buying more equipment.
- B. employing more staff.
- C. opening for more hours.

11. From next week, there will be...

- A. an outdoor basketball court.
- B. a new court for volleyball.
- C. more tennis courts.

12. Who gives the scuba-diving lessons?

- A. a swimming instructor from the leisure centre
- B. instructors from a local diving school
- C. the manager himself

13. What is different about the leisure centre?

- A. The cafe sells healthy food.
- B. It's cheaper than most other centres.
- C. It offers discounts.

Submit Your Answers

Part 3 : You will hear a woman talking to a group of tourists about their holiday. For each question, fill in the missing information in the numbered space. (Question 14-19)

Greek Holidays

Meals

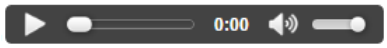
Meals will be served in the dining room which is located at the **(14)** _____ of the hotel.
Breakfast **(15)** _____ a.m.–9 a.m.
Lunch 12 p.m.–3 p.m.
Dinner 8 p.m.–11 p.m. (includes traditional **(16)** _____ twice a week).

Activities

Mornings
Trips include visits to ruins and **(17)** _____ monuments.
Visit to outdoor market every **(18)** _____.
Afternoons
Visit the beach (only **(19)** _____ minutes away).
Stay by the hotel swimming pool.

Submit Your Answers

Part 4 : Look at the six sentences for this part. You will hear a conversation between a young man, James and a young woman, Alice about what they did at the weekend. Click YES if the sentence is correct or NO if it is incorrect. (Question 20-25)



20. At first, James thinks Alice studied all weekend.
Yes No

21. James is surprised that Alice has studied.
Yes No

22. Alice feels confident about her exams.
Yes No

23. Alice is keen on maths.
Yes No

24. James played sport all weekend.
Yes No

25. James is upset because he missed a good film on TV.
Yes No

Submit Your Answers

Web-based Listening Test (Audio Script)

Part 1

1. What is the woman going to buy today?

Woman: I need to get a birthday present for Jan. I've already got her a CD and I thought about buying her a book or a DVD, too. What do you think?

Man: I don't think she reads much, so I think a film would probably be better.

Woman: OK. Thanks.

2. What time did Sarah finish work today?

Man: You're home late, Sarah! It's nine o'clock!

Woman: Yes, I know, I didn't catch a train until eight. I left work at six, but I met Tess and we went for a pizza.

3. What is the woman planning to do at the weekend?

Man: Are you meeting Jess and Pete on Saturday?

Woman: Yes, but we're not going to the restaurant now. We've decided to have a picnic in the park instead. I was going to cook a meal for them but I think the weather's going to be good this weekend.

4. What is the weather going to be like this afternoon?

Woman: After a bright and sunny morning, clouds are beginning to form and it looks like we're going to see some rain later today, probably from around 2 o'clock. This will be light, however, and no thunderstorms are expected. It will clear up in the evening.

5. How did the man find out about the play?

Woman: That was a fantastic play. Thank you for recommending it. Did you read a review about it?

Man: No, I know there have been some good reviews in the newspapers about it, but I didn't see them. My friend John heard about it on the radio and emailed me and suggested I went to see it.

6. When's the man's first guitar lesson?

Woman: Have you started guitar lessons yet?

Man: Not yet. They've been delayed. They were going to start on the 15th, but the teacher was ill, so she's going to give two lessons in one week. The first one will be on the 21st and the second will be on the 23rd.

7. How does the woman usually keep fit?

Man: Hi, Sally. I didn't know you liked running!

Woman: I don't! I go to the gym most days, but it's closed at the moment. They're doing some building work. I've got to do something while it's closed and I haven't got a bike, so I thought I'd better try running.

Part 2

Interviewer: Welcome to the Leisure Programme. Today I'm interviewing Jack Hutchinson, the manager of a new leisure centre that opened last month. Welcome to the programme, Jack.

Jack: Thank you.

Interviewer: Jack, there are several leisure centres in this area. Why do you think yours has become so popular already? Is it because it has such a fantastic gym?

Jack: No, I don't think it's because of the gym, although the gym is excellent. I think it's because so many articles have been written about us in the local newspapers. People want to see if we're as good as the journalists say.

Interviewer: So, tell us about the centre.

Jack: Well, let's start with the pools – we've already got a very good, large swimming pool with a diving area. There's also a smaller training pool, which is for children and for adults having lessons, and there are plans to build a fun pool with slides for children.

Interviewer: And what about this amazing gym?

Jack: The equipment is excellent and we have experienced staff who are very happy to give advice.

Interviewer: Are the staff there all the time?

Jack: They're usually there for two hours in the afternoon and an hour in the evening. We're hoping to increase the time they're available when we employ more staff.

Interviewer: What about courts?

Jack: There are indoor courts for tennis, badminton, volleyball, and basketball. The outdoor tennis courts aren't quite ready but they'll be available next week.

Interviewer: What about classes?

Jack: There are swimming classes at all levels, karate, aerobics and keep-fit. We also offer one-day scuba-diving courses at the pool. They're given by instructors from the local diving school. I've done one myself and so have most of our swimming instructors. I can highly recommend them.

Interviewer: So, in what way do you think your leisure centre is better than others?

Jack: The facilities are of a very high quality. We offer a wide range of different activities and we have a cafe that sells good, healthy food.

Interviewer: Well, … other centres offer all that, too.

Jack: Yes, but they don't offer our prices. Like other centres, we offer discounts to students and the over 60s, but people can also buy a membership card for just £15 a month. For this, you can use all the facilities as often as you like. You pay much more for membership in other centres.

Interviewer: That sounds very good. Thank you for coming in, Jack …

Part 3

Woman: Good afternoon. It's lovely to see you all. You've certainly got some great weather for your holiday! Now, in a moment you'll be shown up to your rooms. Then in about an hour's time, at about 1 o'clock, a light lunch will be served in the dining room. The dining room is at the front of the hotel, next to the bar. For your information, breakfast is served between 7 a.m. and 9 a.m., lunch is from 12 p.m. to 3 p.m. and dinner is served in the evening between 8 p.m. and 11 p.m. Traditional music is played by local musicians twice a week during dinner.

Now a few words about activities. There are trips most mornings which you can join, if you like. These include visits to local places of interest, including the ruins and various monuments. I'll give you more details about those later. You can also visit an outdoor market where you'll be able to find souvenirs to take home. That's only on once a week, on Thursday, so don't miss it. In the afternoons, you can either walk to the beach, which is just five minutes away, or you can relax by the hotel swimming pool.

That's it for now, I think. I hope you like your rooms. Please stay behind if you have any questions. Otherwise, I'll see you in the dining room in about an hour. Thank you very much.

Part 4

James: You look tired, Alice. Did you go away for the weekend?

Alice: Well, I went for a walk on Saturday afternoon, but that's not why I'm tired. I spent a lot of time studying.

James: But the exams aren't until next month. Why are you studying so much already? I haven't even started!

Alice: Well, I don't think I'm going to pass them all.

James: Of course you will! You're really good at all your subjects.

Alice: I'm not very good at maths and that's what I'm worried about.

James: But you like maths.

Alice: I know, but I'm just finding it really hard at the moment. Anyway, I don't want to talk about exams! It's too depressing! What about you? How was your weekend?

James: Well, Saturday was good. I played football in the morning and I went to a party in the evening. Sunday was a bit boring, though. I wanted to go to the park for a game of football or something, but it rained so I just stayed at home.

Alice: Did you watch any good films? I think there was a good film on TV on Sunday evening, wasn't there? I can't remember what it was called.

James: I think it was a comedy, but I didn't really want to watch TV. I did some homework and went to bed early. But, how about going to the cinema next weekend? We could ask Andrew and Linda to come with us.

Alice: That's a good idea. What's on at the moment?

James: I'm not sure but …

APPENDIX C

Questionnaire (English Version)

QUESTIONNAIRE

Attitudes towards Computer & Internet

and Computer & Internet Familiarity

This questionnaire is designed to investigate attitudes toward computer & Internet and computer & Internet familiarity among grade 11 students of Satri Phatthalung School, 2015 academic year. The questionnaire contains 3 parts.

Part 1	Respondent profile
Part 2	Attitudes towards the use of computer and Internet
Part 3	Computer and Internet familiarity

Instructions: Please give written answers or place a checkmark (✓) only one of the column next to each question that best describes your answer.

Part I: Respondent profile

1. Gender: ☐ Male ☐ Female
2. Age: ..... years old
3. Preference for listening test channel
   ☐ Paper-based ☐ Web-based
4. Have you ever taken a web-based listening test?
   ☐ No ☐ Yes ..... time(s)
5. If you are going to take a web-based listening test, would you be anxious?
   ☐ No ☐ Yes, because.....

Part II: Attitudes towards the use of Computer & Internet

No.	Attitudes	Scale				
		Strongly agree	Agree	Fairly disagree	Disagree	Strongly disagree
		5	4	3	2	1
1.	I like working with computers.					
2.	I use computers in many aspects of my life.					
3.	I like solving new problems on the computer.					
4.	The challenge of solving problems with computers appeals to me.					
5.	Learning about computers is worthwhile.					
6.	I think working with computers would be enjoyable and stimulating.					
7.	Figuring out computer problems appeals to me.					
8.	I'll need a firm mastery of computers for my future work.					
9.	When there is a problem with a computer that I can't immediately solve, I would stick with it until I have the answer.					
10.	I don't understand how some people can spend so much time working with computers and seem to enjoy it.					
11.	I would feel at ease in a computer class.					
12.	I think using a computer would be very hard for me.					

No.	Attitudes	Scale				
		Strongly agree	Agree	Fairly disagree	Disagree	Strongly disagree
		5	4	3	2	1
13	Once I start working with the computer, I would find it hard to stop.					
14.	Knowing how to study with computers will increase my learning proficiency.					
15.	I could get good grades in computer courses.					
16.	I will do as little work with computers as possible.					
17	If a problem is left unsolved in a computer class, I would continue to think about it afterward.					
18.	It is important to me to do well in computer classes.					
19.	I have a lot of self-confidence when I work with computers.					
20.	Working with computers will not be important to me in my life's work.					
21.	To play or work with a computer is really fun.					
22.	I forget the time, when I am working with the computer.					
23.	Knowledge of Internet is essential for students.					
24.	I feel overwhelmed using the Internet in my study.					
25.	I feel comfortable with using the Internet.					

No.	Attitudes	Scale				
		Strongly agree	Agree	Fairly disagree	Disagree	Strongly disagree
		5	4	3	2	1
26.	I have security concern about using the Internet.					
27.	Accessing, surfing and browsing the Internet confuse me.					
28.	I find the Internet to be as informative as teachers.					
29.	The Internet contains useless information.					
30.	Life will be easier and faster with the Internet.					

Part III: Computer & Internet Familiarity

1. How often do you use a computer and Internet?

	Frequency				
	Almost every day	A few times each week	Between once a week and once a month	Less than once a month	Never
	5	4	3	2	1
1.1 At home					
1.2 At school					
1.3 In the learning resource center/library					
1.4 At other places					

2. How often do you use:

	Frequency				
	Almost every day	A few times each week	Between once a week and once a month	Less than once a month	Never
	5	4	3	2	1
2.1 the Internet?					
2.2 the computer to help your learning at school?					
2.3 the computer for social media?					
2.4 the computer for games and entertainment?					
2.5 a computer for electronic communication (e.g. e-mail or chatting)?					

3. How comfortable are you:

	Comfort			
	Very comfortable	Comfortable	Somewhat comfortable	Not at all comfortable
	4	3	2	1
3.1 when you use a computer?				
3.2 taking a test on a computer?				

----------Thank You----------

APPENDIX D

Questionnaire (Thai Version)

แบบสอบถาม

ทัศนคติต่อการใช้คอมพิวเตอร์และอินเตอร์เน็ต

และความคุ้นเคยต่อการใช้คอมพิวเตอร์และอินเตอร์เน็ต

แบบสอบถามนี้มีวัตถุประสงค์เพื่อสำรวจข้อมูลเกี่ยวกับทัศนคติต่อการใช้คอมพิวเตอร์และอินเตอร์เน็ตและความคุ้นเคยต่อการใช้คอมพิวเตอร์และอินเตอร์เน็ตของนักเรียนชั้นมัธยมศึกษาปีที่ 5 โรงเรียนสตรีพัทลุง ปีการศึกษา 2558 โดยแบบสอบถามแบ่งออกเป็น 3 ตอน ดังนี้

ตอนที่ 1 ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม
ตอนที่ 2 ทัศนคติต่อการใช้คอมพิวเตอร์และอินเตอร์เน็ต
ตอนที่ 3 ความคุ้นเคยต่อการใช้คอมพิวเตอร์และอินเตอร์เน็ต

คำชี้แจง: กรุณาเขียนข้อความในช่องว่างที่กำหนดให้หรือทำเครื่องหมาย (✓) ลงในช่องหรือตารางที่ตรงกับความเป็นจริงมากที่สุด

ตอนที่ 1: ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม

1. เพศ ☐ ชาย ☐ หญิง
2. อายุ ..... ปี
3. รูปแบบการสอบฟังที่ชอบ
   ☐ การสอบฟังและตอบคำถามในกระดาษคำตอบ
   ☐ การสอบฟังและตอบคำถามผ่านระบบอินเตอร์เน็ต
4. นักเรียนเคยทำแบบทดสอบการฟังผ่านระบบอินเตอร์เน็ตหรือไม่
   ☐ ไม่เคย ☐ เคย จำนวน ..... ครั้ง
5. ถ้านักเรียนต้องสอบฟังและตอบคำถามผ่านระบบอินเตอร์เน็ต นักเรียนจะมีความกังวลหรือไม่
   ☐ ไม่กังวล ☐ กังวล เนื่องจาก.....

ตอนที่ 2: ทัศนคติต่อการใช้คอมพิวเตอร์และอินเตอร์เน็ต

ข้อ	ทัศนคติ	ระดับความคิดเห็น				
		เห็นด้วยอย่างยิ่ง	เห็นด้วย	เห็นด้วยปานกลาง	ไม่เห็นด้วย	ไม่เห็นด้วยอย่างยิ่ง
		5	4	3	2	1
1.	ฉันชอบทำงานด้วยคอมพิวเตอร์					
2.	ฉันทำงานต่าง ๆ กับเครื่องคอมพิวเตอร์					
3.	ฉันชอบฝึกแก้ปัญหาใหม่ๆ ในคอมพิวเตอร์					
4.	ความท้าทายในการแก้ไขปัญหาต่าง ๆ บนคอมพิวเตอร์ดึงดูดความสนใจของฉัน					
5.	การเรียนรู้เกี่ยวกับคอมพิวเตอร์เป็นสิ่งที่คุ้มค่า					
6.	ฉันคิดว่าการทำงานด้วยคอมพิวเตอร์เป็นสิ่งที่น่าเพลิดเพลินและกระตุ้นความสนใจ					
7.	การแก้ปัญหาของคอมพิวเตอร์กระตุ้นความสนใจของฉัน					
8.	ความชำนาญในการใช้งานคอมพิวเตอร์เป็นสิ่งจำเป็นสำหรับการทำงานในอนาคต					
9.	เมื่อมีปัญหาเกี่ยวกับคอมพิวเตอร์ที่ฉันไม่สามารถแก้ไขได้ในทันทีทันใด ฉันจะพยายามจนกว่าจะหาคำตอบได้					
10.	ฉันไม่เข้าใจว่าทำไมบางคนจึงทำงานกับคอมพิวเตอร์เป็นระยะเวลานาน ๆ และดูจะเพลิดเพลินกับมัน					
11.	ฉันรู้สึกสบาย ไม่กังวลในวิชาคอมพิวเตอร์					
12.	ฉันคิดว่าการใช้งานคอมพิวเตอร์เป็นเรื่องยากมาก ๆ สำหรับฉัน					

ข้อ	ทัศนคติ	ระดับความคิดเห็น				
		เห็นด้วยอย่างยิ่ง	เห็นด้วย	เห็นด้วยปานกลาง	ไม่เห็นด้วย	ไม่เห็นด้วยอย่างยิ่ง
		5	4	3	2	1
13	ทันทีที่ฉันเริ่มทำงานด้วยคอมพิวเตอร์ฉันพบว่าเป็นการยากที่จะหยุด					
14.	การรู้เกี่ยวกับวิธีในการเรียนด้วยคอมพิวเตอร์จะช่วยให้ผลการเรียนของฉันดีขึ้น					
15.	ฉันสามารถทำคะแนนได้ดีในการเรียนวิชาคอมพิวเตอร์					
16.	ฉันจะทำงานโดยใช้คอมพิวเตอร์ให้น้อยที่สุดเท่าที่จะทำได้					
17	ถ้าฉันไม่สามารถแก้ปัญหาใด ๆ ในชั้นเรียนวิชาคอมพิวเตอร์ ฉันจะยังคงคิดถึงมันต่อในภายหลัง					
18.	การเรียนวิชาคอมพิวเตอร์ให้ได้ดี เป็นสิ่งที่สำคัญสำหรับฉัน					
19.	ฉันมีความมั่นใจในตนเองเป็นอย่างมากเมื่อฉันทำงานด้วยคอมพิวเตอร์					
20.	การใช้งานคอมพิวเตอร์ไม่มีความสำคัญต่อการทำงานในชีวิตของฉัน					
21.	การเล่นหรือทำงานด้วยคอมพิวเตอร์เป็นเรื่องที่สนุกมาก ๆ					
22.	ฉันมักจะลืมเวลา ขณะที่ฉันทำงานด้วยคอมพิวเตอร์					
23.	ความรู้เกี่ยวกับอินเตอร์เน็ตเป็นสิ่งจำเป็นสำหรับนักเรียน/นักศึกษา					
24.	ฉันรู้สึกเพลิดเพลินจนลืมทุกสิ่งทุกอย่างในการใช้คอมพิวเตอร์เพื่อการศึกษา					

ข้อ	ทัศนคติ	ระดับความคิดเห็น				
		เห็นด้วยอย่างยิ่ง	เห็นด้วย	เห็นด้วยปานกลาง	ไม่เห็นด้วย	ไม่เห็นด้วยอย่างยิ่ง
		5	4	3	2	1
25.	ฉันรู้สึกสบายเมื่อใช้งานอินเตอร์เน็ต					
26.	ฉันมีความวิตกเกี่ยวกับเรื่องความปลอดภัยในการใช้งานอินเตอร์เน็ต					
27.	การเข้า การท่องและการสำรวจสิ่งต่าง ๆ ในอินเตอร์เน็ตทำให้ฉันสับสน					
28.	ฉันพบว่าอินเตอร์เน็ตสามารถให้ข้อมูล เช่นเดียวกับการได้ข้อมูลจากครูผู้สอน					
29.	อินเตอร์เน็ตมีข้อมูลที่ไม่มีประโยชน์					
30.	ชีวิตจะง่ายขึ้นและรวดเร็วขึ้นเมื่อใช้งานอินเตอร์เน็ต					

ตอนที่ 3: ความคุ้นเคยต่อการใช้คอมพิวเตอร์และอินเตอร์เน็ต

1. นักเรียนใช้งานคอมพิวเตอร์และอินเตอร์เน็ตในสถานที่ต่อไปนี้บ่อยแค่ไหน

	ความถี่				
	เกือบทุกวัน	สัปดาห์ละ 2-3 ครั้ง	ระหว่างสัปดาห์ละครั้ง – เดือนละครั้ง	น้อยกว่าเดือนละครั้ง	ไม่เคย
	5	4	3	2	1
1.1 ที่บ้าน					
1.2 ที่โรงเรียน					
1.3 ในแหล่งเรียนรู้/ห้องสมุด					
1.4 ในสถานที่อื่น ๆ เช่น ร้านอาหาร, ศูนย์การค้า					

2. นักเรียนใช้งานสิ่งเหล่านี้กับเครื่องคอมพิวเตอร์บ่อยแค่ไหน:

	ความถี่				
	เกือบทุกวัน	**สัปดาห์ละ 2-3 ครั้ง**	**ระหว่างสัปดาห์ละครั้ง – เดือนละครั้ง**	**น้อยกว่าเดือนละครั้ง**	**ไม่เคย**
	5	4	3	2	1
2.1 ท่องอินเตอร์เน็ต					
2.2 สำหรับการค้นคว้าความรู้เพิ่มเติมทางวิชาการ					
2.3 สำหรับสื่อสังคมออนไลน์ เช่น เฟสบุ๊ค					
2.4 สำหรับเล่นเกมส์และความบันเทิง					
2.5 เพื่อการติดต่อสื่อสาร เช่น อีเมล์ หรือการสนทนา					

3. นักเรียนมีความรู้สึกอย่างไร:

	ความสะดวกสบาย			
	รู้สึกสบายมาก	**สบาย**	**ค่อนข้างสบาย**	**รู้สึกกังวล**
	4	3	2	1
3.1 เมื่อใช้งานคอมพิวเตอร์				
3.2 เมื่อต้องทำแบบทดสอบด้วยคอมพิวเตอร์				

----------ขอบพระคุณในความร่วมมือ----------

MANUSCRIPT

PAPER

Thai Learners' Performance on Listening Test: A Comparison of Paper-based and Web-based Testing

Thai Learners' Performance on Listening Test: A Comparison of Paper-based and Web-based Testing*

Sujane Panjan**
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Abstract

Web-based testing has been used in many educational institutions, but it is argued that the performance of test takers is related to the test delivery mode and their preferences. This study aimed to investigate whether the use of traditional paper-based tests and web-based tests to test listening ability would affect test takers' performance. Two parallel tests were administered to 200 Thai secondary students on two different occasions. The test takers were first administered the paper-based listening test. Then, the web-based listening test was administered one week after the first test. Paired sample t-test was used to compare the means of two test modes. The result of the study showed that the difference in test delivery mode did not affect overall participants' listening test performance. However, there were significant differences in the test scores between paper-based and web-based testing modes between the high and low proficiency groups. The high group had a better score on the paper-based listening test than the web-based test; the low group achieved significantly higher scores on the web-based listening test than on paper-based. The study also revealed that test mode preferences might not reflect their test performance. Guidelines and suggestions for test developers and teachers that may help in developing a listening test for students with different characteristics, as well as preferences in learning and testing styles were provided.

Keywords: Listening Test, Paper-based Testing, Web-based Testing, Test Performance, Test Preference

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* This article is conducted to compare the students' performance on listening test between paper-based and web-based testing and to fulfill the requirement for Master of Arts in Teaching English as an International Language, Faculty of Liberal Arts, Prince of Songkla University, Hatyai Campus.

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Introduction

Listening is one of the most important fundamental language skills for human beings. People spend 40-50% of their communication time on listening and spend the rest on speaking, reading, and writing (25-30%, 11-16%, and 9%) respectively (Mendelsohn, 1994). Listening is also a central to the lives of students throughout all levels of educational development because it plays an important role in facilitating learning (Coakley & Wolvin, 1997; Wu, 2005). Students from kindergarten through high school are expected to listen 65-90 percent of their learning time and, both inside and outside the classroom, listening consumes more of daily communication time than any other form of verbal communication (Gilbert, 1988; Wolvin and Coakley, 1988). Without listening skills, learners never learn to communicate effectively (Nunan, 1998).

However, listening is a highly complex mental process that involves perception, attention, cognition, and memory. Listeners have to employ all types of knowledge to interpret meaning, identify the level of stress and intonation, understand vocabulary and grammatical structures, recognize and remember what they have heard (Byrnes, 1984; Vandergrift, 1999). Therefore, in language acquisition, comprehending sound and speech in a foreign language is quite a difficult task for EFL learners. Due to the differences between the phonological system and linguistic structure of L1 and L2, foreign language learners must process the incoming information using linguistic rules and patterns that they have not mastered (Shang, 2008; Thomas & Dyer, 2007).

To measure listening comprehension, most teachers use listening tests to evaluate the listening proficiency. However, listening is not an easy skill to test because it is less convenient and more technically complicated than conducting reading or writing tests. Listening tests require suitable input material with a good quality sound system which can affect understanding of listening (Conaim, 2006). The listening room should support several acoustic functions and the sound system should transmit voices to the listeners via both direct and reflected sounds. According to Waye et al. (2015), the direct sounds are most important for listeners who sit close to the speaker and reflected sounds are more important for distance listeners. However, in generally, most classrooms do not have multimedia systems or suitable resources such as computer, smart board and listening laboratory to support listening tests.

With the rapid development of Information and Technology (IT), computer-based tests have been used in language testing. Since early 80's, computers as a testing medium have attracted the attention of psychometricians because they allow the application of items response theory for delivering adaptive tests, which can often pinpoint a test taker's ability level faster and with greater precision than a paper-based tests (Brown 1997 cited in Roever, 2001; Wainer, 2000). Computers and devices such as mobile phones,

PDAs, palmtops, smartphones, tablets and netbooks are becoming important resources for learners and are now widely used in language education (Nikou & Economides, 2013).

Besides the traditional paper-based test, there are several types of assessment using technology to administer. For example, in a computer-based test, assessment can be delivered via a standalone computer or a closed network computer (Roever, 2001). In addition to computer-based test, web-based test is an assessment that can be delivered via the Internet (Nikou & Economides, 2013). The test takers can access the tests by making use of web-browser software to login to the system. Moreover, with the advance of technology, computerized adaptive testing is another way of testing. In other words, the computer can select and present test items to the test takers according to the estimated level of their language ability (Dunkel, 1999).

Using technology in assessment can provides many potential advantages, including decreased scoring errors, increased opportunity to process data online, and improvement in reliability (Newton et al., 2013). In terms of test administration, testers can administer assessments to several participants at one time, resulting in time, and saving on paper or personnel resources. In comparison with the traditional paper-based test, using technology in assessment can enable the use of multimedia features, which are not usable in the paper-based test format (Kalogeropoulos et al., 2013). In addition, computer-based test and web-based test can provide feedback both on each test taker's response or on the test result immediately upon completion of the test. Moreover, using technology in testing can randomize choices from large question-pools, innovate item formats, automate scoring and reporting, and enhance advanced security (Roever, 2001; Nikou & Economides, 2013).

According to the advantages of using computer technology for educational assessment, there are great transformations from the traditional mode of assessment to the modern method. Many institutions are migrating toward the use of computer-based tests. Therefore, they have changed their test platform from traditional paper-based test to technology-based test. For example, the Test of English as a Foreign Language (TOEFL) has changed its test format to the Internet-based test (Coniam, 2006). The University of Cambridge Local Examination Syndicate's (UCLES) CommuniCAT Tests and the International English Language Testing System Test (IELTS) have been changed into computerized format (Coniam, 2006; Hosseini et al., 2014). In addition, a computer-based test is also used for many examinations in many areas such as education, the military, careers and licensing programs (Russo, 2000; Trotter, 2001).

However, there are concerns that should be considered when assessing language skills by using technology-based methods. Several factors have been found to affect performance and lead to difficulties when taking the tests such as equivalence of scores

across methods of test administration or level of computer experience and familiarity with technology of the test takers (Hosseini et al., 2014). Factors originated from test takers themselves such as different styles of learning, individual way of collecting, organizing and processing information, and individuals' attitudes towards using computer and technology have also been argued to influence test performance (Chan, 2013; Newton et al., 2013).

The findings from past research on equivalence of scores across methods of test administration are still inconclusive. For example, it was found that for a dental hygiene course unit in midterm examination, the computer-based tests scores were greater than those of paper-based tests. (DeAngelis, 2000), On the contrary, Gwaltneey et al. (2008) reported lower scores on the computer-based tests version of their patient outcome measures compared to the paper-based tests version. Some studies reported non-significant differences between computer-based and paper-based tests result therefore computer-based tests can be considered a valid and acceptable testing mode (Fyfe et al., 2009; Mason et al., 2001; Schaeffer et al., 1993).

Computer experience and familiarity in the use of computer are also important predictors of learners' achievement in online learning and testing. Younger learners may feel more comfortable learning from technology-based environment as opposed to sitting still listening to a teacher for an hour or more (Lam, 2009). Many researchers have already investigated the relationship between computer usage ability and computer-based test result. Yurdabakan (2012) reports that students with poor computer skills show low achievement in computer-based test. However, in some studies, there was no significant relationship between the level of computer familiarity and the performance on computer-based tests (Boo, 1997; Taylor et al., 1999).

According to the policy of The Office of the Basic Education Commission (OBEC) to reform English teaching in schools, students and teachers are encouraged to use technology as tools for language development and assessment (OBEC, 2013). However, the introduction of computer-based and web-based learning and testing may have caused certain difficulties among teachers and students due to their unfamiliarity with computer-based and web-based learning and testing style, as well as some unexpected technological issues. Therefore, computer-based and web-based resources may not be commonly used in Thai schools, even in schools where technology facilities are readily available. Moreover, it is necessary for students to practice listening as a basic skill for their further study and career in which English plays a vital role in most workplaces (Pratoomrat & Rajprasit, 2014).

Although there is a large body of comparative studies on paper-based and web-based testing, most studies were conducted in other countries. Particularly on listening performance, there is relatively little research of comparative studies on the paper-based

and web-based test performance in a Thai context. Moreover, little research has been conducted to investigate the interaction between the test delivery modes and test takers' preference. As discussed above, the comparisons of using technology in testing are still inconclusive. Some studies have reported a significant difference between the two testing modes while others researchers have concluded the opposite (DeAngelis, 2000; Fyfe et al., 2009; Gwaltneey et al., 2008; Mason et al., 2001; Schaeffer et al., 1993). Accordingly, it is necessary for this research to investigate whether the use of traditional paper-based testing and web-based testing to test listening ability would affect test takers' performance or not.

Objectives

This research aimed to compare the test takers' performance on listening test conducted via paper-based and web-based methods and to identify any relationship between the test takers' test mode preference and their performance on listening test.

Research Questions

The study was designed to answer the following research questions.

1. Did test takers perform significantly different on paper-based and web-based listening tests?

2. Were there any relationships between the test takers' preference for testing mode and their performance on listening tests?

Materials and Methods

1. Participants

The participants were 200 grade 11 students, 53 males (26.50%) and 147 females (73.50%), ages 16-18. They were studying in the 2015 academic year at Satri Phatthalung School, in the center of Phatthalung Province, South of Thailand.

2. Research Instruments

2.1 Listening Test

Two parallel Cambridge Preliminary English Tests (PET) were used to assess the participants' listening performance. One was administered via paper-based method and the other one was administered via web-based method. Each of the two tests lasted about 30 minutes. The tests consisted of 25 items of multiple-choice, gap-filling and true or false formats.

2.2 Questionnaire

The questionnaire, adapted from the Computer Attitude Scale (CAS) developed by Loyd & Gressard (1984) was used to collect information about the test takers' general information including age, gender and preference for listening test mode. The questionnaire was administered to the test takers after they took the two different listening test modes.

3. Data Collection

The study was conducted in the second semester of the 2015 academic year. The paper-based listening test was administered first to the 200 test takers via an audio player in a normal classroom. Then, in the following week, the participants took the web-based listening test through the learning management system (LMS). The test takers could access this test after logging into the system and listened to the questions via headphones individually. To answer gap filling question types, the test takers needed to type their answers using a keyboard into the gap provided on the screen. For multiple choice and true/false question types, they needed to click their mouse to choose the correct answers. The questionnaire was administered to the participants after the completion of their web-based listening test. All questions for each part in the questionnaire were explained to the participants so they could complete the questionnaire. The time of responding to the questionnaire was about 5 minutes.

4. Data Analysis

Descriptive statistics of paired sample t-tests were used to describe the test takers' performance of their two listening tests: paper-based and web-based. Then, independent sample t-test analysis was used to identify the statistics between test takers' test mode preference and their performance on the listening test. Point biserial correlation coefficient was also used to analyze the relationship between paper-based and web-based score with the variable of participants' test mode preference.

Results and Discussion

This section contains the results of the two mode delivery of listening tests, together with information about participations' preferences on listening test mode and their listening performance.

Research Question 1: Did test takers perform significantly different on paper-based and web-based listening tests?

To answer the first research question, two parallel listening tests were administered to the test takers and Table 1 shows the listening performance of 200 participants on paper-based and web-based methods.

Table 1. Participants' performance on PBT and WBT

Test Mode	Total Score	Mean	S.D.	t	p-value
PBT	25	10.67	2.97	.451	.652
WBT	25	10.57	2.92		

The participants' average scores on the two tests were compared. From the total score of 25, the test takers' mean score on paper-based test (PBT) was 10.67 while that on web-based test (WBT) was 10.57. The results of an analysis showed a non-significant difference between the test takers' mean scores on the two tests. Therefore, it can be concluded that the participants' performance on the paper-based and web-based listening tests were not statistically different. That is, the test mode did not have any effect on the participants' performance. It should be noted that the average scores on both PBT and WBT were less than half, indicating that the participants of the study had low listening proficiency.

Detailed analysis was performed to see if there was any significant difference on the performance of the participants with different listening proficiency. The test takers were divided into high and low proficiency groups based on their scores of paper-based listening test, which was the traditional test mode delivery they were familiar with. Results are presented in Table 2, with test takers divided into high and low group using 27% formula. Both the high and low groups consisted of 54 test takers.

Table 2. Low and high-proficiency participants and their listening test scores

Group	Test Modes	Total Score	Mean	S.D.	t	p-value
High	**PBT**	25	14.46	1.98	**4.243****	0.01
	WBT	25	12.54	3.27		
Low	**PBT**	25	7.33	1.13	**-5.379****	0.01
	WBT	25	9.20	2.41		

** significant at the 0.01 level

Tables 2 demonstrates that from the total of 25, the high group's mean scores on paper-based test were significantly higher than that on web-based test ($\bar{X}$ =14.46 and $\bar{X}$ =12.54 respectively, P < 0.01). In other words, the high group performed significantly better on paper-based test than on web-based test. On the other hand, in the low group, from the total of 25, their mean scores on paper-based test was significantly lower than that on web-based test ($\bar{X}$ =7.33 and $\bar{X}$ =9.20 respectively, P < 0.01). That is, the low group performed significantly better on web-based test than on paper-based test.

Research Question 2: Were there any relationships between the test takers' preference for testing mode and their performance on listening tests?

Of the 199 test takers who completed the questionnaire, 33 (16.58%) preferred paper-based method while 166 (83.42%) preferred web-based method. Independent sample t-test was used to describe the statistics of their listening performance. Details of their performance are presented in Table 3.

Table 3. Listening performance by test mode preference

PBT Preference (n=33)				t	Sig. (2-tailed)	WBT Preference (n=166)				t	Sig. (2-tailed)
PBT		WBT				PBT		WBT			.8
Mean	S.D.	Mean	S.D.	3.59**	.00	Mean	S.D.	Mean	S.D.	-.232	1
12.30	3.046	10.33	2.859			10.45	3.260	10.58	2.861		6

** significant at the 0.01 level

Table 3 shows that 33 test takers who were in favor of paper-based listening test performed significantly better on paper-based test ($\bar{X}$ =12.30) than on the web-based test ($\bar{X}$ = 10.33), indicating that their preference on paper-based method helped them to perform well on paper-based testing. Of 166 test takers who preferred web-based method, their mean scores on web-based ($\bar{X}$ = 10.58) and paper-based test ($\bar{X}$ = 10.45) were not significantly different.

Point biserial correlation coefficient was used to see if there was any correlation between the participants' test mode preference and their performance.

Table 4. Correlation of scores and test mode preference

Test mode preference	PBT Scores	WBT Scores
	r	r
PBT Preference	**.248****	
WEB Preference		.017

** significant at the 0.01 level

As can be seen from Table 4, the overall correlation of scores and test channel preference of test takers who preferred paper-based test was .248, a low but significant correlation. However, for those who preferred the web-based test mode, the correlation was .017 which indicated that there was no association between the test mode preference and their WBT scores.

Point biserial correlation coefficient was also used to investigate if there was any correlation between the participants' test mode preference and their performance based on the level of listening proficiency.

Table 5. Correlation of scores and test channel preference of high and low groups

Group	Test mode preference	PBT Score	WBT Score
		r	r
High	PBT Preference	.034	
	WEB Preference		.219
Low	PBT Preference	.117	
	WEB Preference		**.263***

* significant at the 0.01 level

Surprisingly, as illustrated in Table 5, more detailed analysis for each group of test takers showed that there was only a significant correlation between the test mode preference and the web-based listening test scores in the low group. However, the level of the correlation was very low, indicating that their preference for web-based test method might somehow enabled them to do better on web-based listening test.

Conclusion

The study revealed that there were no significant differences between 200 participants' performance on the two types of listening test mode delivery. In other words, difference in test mode was not found to be a factor affecting the test performance of overall test takers. The finding was found to be similar to some previous studies in that there was no significant difference between computer-based and paper-based tests result (Fyfe et al., 2009; Mason et al., 2001; Schaeffer et al., 1993). Thus, instructors may include web-based listening test method in their listening tests without affecting the students' test performance.

However, detailed analysis revealed that the high-proficiency group performed significantly better on paper-based test than on web-based test while the low-proficiency group performed significantly better on web-based test than on paper-based test. The findings of an analysis seem to suggest that listening proficiency levels might have played an important role in the effect of test mode delivery. Teachers and test developers may consider using both test modes simultaneously in order to administer the reliable test with test takers who are different in listening proficiency.

In terms of the relationship between test mode preference and test performance, it was found that test takers in favor of paper-based method performed significantly better on paper-based test than on web-based test whereas the web-based scores of those who preferred web-based method were not significantly higher than their paper-based scores. It was interesting to find that the familiarity with traditional paper-based listening test might help paper-based group to do better on their preferred test mode. In addition, no relationship was found in detailed analysis between mode preference and test performance of the high-proficiency group while there was a significant relation between the performance of the low-proficiency group. That is, low proficiency test takers in favor of web-based mode performed significantly better on web-based test than on paper-based test while those who preferred paper-based method did not performed better on paper-based test.

The findings of the current study may help the instructors and test developers to realize the effect of test mode preference on test performance. The fact that 166 out of the 200 participants preferred web-based listening tests would also be useful information for language teachers, educators, test developers, and test administrators to provide appropriate testing modes to test their students' listening ability. As technology has been implemented in the field of language assessment, if students are well prepared for the technology-based exams, their performance will be enhanced. This finding can also be a beneficial information for the administrator to set the policy such as Investing in test management software or training and supporting unit, as well as improving the technological

awareness and utilization of technology-based test at the primary and secondary school level for both the teachers and the students.

Further research needs to be conducted before any conclusion of the effects of test mode delivery and test mode preference on test performance can be drawn. The result implies the need of further studies on other factors that may influence the test performance such as computer experience, familiarity with technology, learning styles, or attitudes towards using computer and Internet. Moreover, the influence of using technology in testing listening skills is needed to examine on how technology might affect listening performance, particularly, the possibility that technology might somehow distort or impede the test performance.

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