



## THE EFFECTS OF TECHNOLOGY-ASSISTED LISTENING PRACTICE ON MOODLE ON ENGLISH-MAJORED FRESHMEN'S LISTENING PROFICIENCY

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### **Abstract:**

This research was conducted to investigate the effects of technology-assisted listening practice on MOODLE on English-majored freshmen's listening proficiency as an alternative to traditional teaching and learning English. An interesting question, however, was how to apply this mode of teaching and learning English listening within the Vietnamese context. In Vietnam, few studies have been carried out on the advantages and disadvantages that university teachers and students encountered in implementing English listening practice with MOODLE assistance to meet the demands and interests of the students and support instructional practices. Therefore, this quantitative-method research was conducted to examine this interesting area with sixty-four English-majored freshmen. The data were analyzed from a pretest and post-test. The findings prove that technology-assisted listening practice on MOODLE had positive effects on English-majored freshmen's listening proficiency.

**Keywords:** technology-assisted listening practice, MOODLE, listening proficiency

### **1. Introduction**

English is deemed as an international language of technology and science in today's world of globalization. Vietnamese schools place a high priority on teaching English, so English teachers have paid particular attention to the use of technology to enhance their students' learning of the language. If technology can be used to improve language learning, language learners can acquire the language on their own (Tananuraksakul, 2016), increase learner engagement (Mulyono, 2016), and provide the greatest number of learning opportunities (Kiliçkaya, Krajka, & Latoch-Zieliska, 2014).

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Additionally, technologies like the internet, live online meetings, and learning management systems with online learning materials can be used in language instruction about English for Specific Purposes (ESP) to improve students' receptive skills and support them in performing well with their productive language skills (Alizadeh, 2018). Indeed, teachers and students must employ a variety of IT resources, including computers and a number of well-liked teaching platforms, in order to teach and learn English more effectively. The MOODLE management system enables students to become familiar with appropriate technological features in teaching and learning English (Zelinskiy, 2020), and it assists teachers in expanding the traditional classroom's four walls and rebuilding the class with numerous beneficial regulated and free communicative competence exercises that are improving in both quality and quantity (Lisnani et al., 2020). MOODLE, according to Lisnani and her colleagues (2020) and Guangying (2014), is essential for the development of listening comprehension.

The above studies' findings highlight the value of listening proficiency, the dearth of listening chances for language learners, and the technical advantages of language learning. However, the majority of earlier studies on a related topic were carried out in other parts of the world under different circumstances from those in Vietnam, particularly for English-majoring students in universities in the Mekong Delta. These restrictions from earlier studies represent significant gaps that made this research conducted to fill in them. The purpose of this study is to examine the effects of technology-assisted listening practice on MOODLE on the listening proficiency of freshmen majoring in English at a university in the Mekong Delta based on the related research's advantages and limitations.

This research aimed to test the following hypothesis in order to meet the objectives.

### **1.1 Hypothesis**

Based on the findings of earlier studies on related topics, it is hypothesized that technology-assisted listening practice on MOODLE helps to improve the listening proficiency of learners. The primary research question listed below must be addressed in order for this research objective to be met:

What effects does technology-assisted listening practice on MOODLE have on English-majoring freshmen's listening proficiency?

## **2. Literature review**

The theoretical framework and related studies will be presented in this part. Three major sections include (1) listening comprehension, (2) technology-assisted listening practice, and (3) related studies.

## 2.1 Listening comprehension

English listening is crucial for communication and language learning. Listening comprehension has received increasing focus in English language instruction over the past few decades as a result of a more contemporary perspective on the development of communicative competence in English learning. Regarding what constitutes listening comprehension, there are a lot of divergent opinions among scholars. According to Brown and Yule (1983), listening comprehension is just the act of understanding what a person has heard. Even if that person learns a text by listening to it, one will still be able to grasp it. In addition, Underwood (1989) defines listening comprehension as the deliberate effort to pay attention and attempt to understand what we hear without placing emphasis on the individual words but rather with mindfulness on the entire utterance. Nunan (1998) and Brownell (2016) define listening comprehension as a fundamental ability in the active process of deciphering and constructing meaning from verbal and non-verbal cues in language learning.

However, according to Vandergrift (1997), listening comprehension is a challenging cognitive process in which listeners use their knowledge of language to manage incoming information, retain what they hear, and interpret it in the context of the message's socio-cultural setting. Finally, listening comprehension is defined as *"a process-oriented activity in which listeners need to deal with the input actively step by step"* (p.6) and *"a creative activity [that] listeners construct or assign meanings based on the given information or their experience and background knowledge"* (Jinhong, 2011, p.7).

The definitions of listening comprehension given above are diverse. In summary, the definition of listening comprehension can be understood as the ability to comprehend what we listen to. However, the more complex definition of listening comprehension refers to a sophisticated, unconscious, and natural mental process in which the listener actively acquires meaningful information that is spoken in their communication context by using their language skills (grammar, vocabulary, pronunciation, etc.). Additionally, a good listener needs the knowledge to put what they hear into practice. Listening comprehension in this research refers to how well the learners perform on the listening tests.

## 2.2 Components of listening proficiency

### 2.2.1 Cognitive Academic Language Proficiency (CALP)

Cognitive academic language competency is the level of language skill required to complete grade-level instructional tasks at native speaker parity. This may involve speaking, listening, reading, or writing assignments, and it frequently calls for the use of more advanced academic skills like contrasting, synthesizing, and assessing (Cummins, 1999).

Many academics believe that one of the key elements of effective listening is the listener's mental processes (perception, processing, and usage). According to O'Malley and his colleagues (1989) and Vandergrift (2003), students with high levels of listening proficiency can connect with both bottom-up and top-down processes, pay closer

attention to what they hear, and plan out what they want to listen to. However, poor proficiency listeners mostly employ a bottom-up method, pay attention to single words, and employ tactics at random (Liu, 2008). Similarly, Goh (2002) finds that better listeners use both cognitive and meta-cognitive abilities, as well as the capacity to draw on prior knowledge, linguistic cues, and context signals, in order to interpret a material meaningfully. On the other hand, less skilled listeners have a limited arsenal of strategies and are frequently sidetracked by unfamiliar lexicons or idioms.

Researchers also distinguish between the degrees of feeling control utilized by more and less skilled listeners in Liu (2008)'s study. When interacting with native speakers, more skilled listeners have far better emotional control and a stronger desire to utilize tactics to make their points clear. Less skilled listeners are more likely to be uneasy when faced with the issue of unfamiliar lexicons because they lack social skills for interrogating discussion partners about unclear meanings.

Last but not least, more skilled listeners have received explicit training in cognitive and metacognitive strategies as well as self-efficacy beliefs, or "*beliefs in whether they have enough ability to perform a task*" (p.2), for specific listening tasks and how to use such techniques. In order to assess whether or not they are on the right path, more skilled listeners should also be able to follow and evaluate their own behavior (Khosroshahi & Merç, 2020).

### **2.3 The challenges of listening comprehension**

One of the most crucial abilities in learning a language is listening. In order to obtain information, Melani (2020) claims that many listeners like engaging in English listening. However, Underwood (1989) discloses that listeners face five difficulties while trying to understand what is being said to them. Learners are unable to control the speed at which material is given; listeners constantly repeat words; listeners lack vocabulary; listeners are unaware of cues that the speaker is shifting to new topics; and listeners lack sufficient prior information (as cited in Tran & Duong, 2020). In addition, Graham and Macaro (2008) and Kim (2017) claim that listening is a difficult skill for many language learners due to its quick and complex procedures requiring a variety of skills. Finally, Nguyen and her colleagues (2020) assert that a major obstacle to students' listening comprehension is a lack of background knowledge, vocabulary, and precise pronunciation.

In short, language listeners encounter challenges when listening to English because they lack the essential vocabulary, a familiar accent, previous knowledge, and background knowledge. Additionally, the spoken information speed exceeds their comprehension ability. Importantly, listeners are not aware of the cues that the speaker is changing topics.

### **2.4 Instructed listening comprehension**

English listening exercises should be effectively instructed in and created for listeners to receive the greatest benefits in listening practice based on the combination of the above

listening comprehension knowledge. This section addresses what listening comprehension instruction is and how it should be taught in the context of technology support.

To begin with, according to Ellis (2005), the computational model provides a radical approach to establishing the fundamentals of the connection between language learning and usage. Students who get strategy instruction develop top-down in deducing meaning from context and making educated guesses based on the available information (Vandergrift, 1997). Similarly, to highlight the component of strategy instruction, Graham and MacAro (2008) assert that current strategy teaching research has merged a metacognitive component and explicit strategy instruction which improve students' listening proficiency and confidence in listening. However, a large number of educators lack the knowledge necessary to create well-instructed listening classes, therefore they frequently purchase textbooks and materials that have been professionally created and include assignments and activities with supporting instructions. In order to maximize the likelihood of effective strategic management and instruction, educators should work to create favorable impressions of strategies for their students. This will also encourage them to apply their methods.

Students majoring in English should, therefore, receive assistance in some foundational courses with strategy instruction to improve listening skills. Technology aid is one of the best methods for teaching strategy. In fact, according to Garrett (2009), pedagogy, theory, and computer-assisted language learning (CALL) all support one another in their respective contexts. Lastly, using technology to facilitate listening practice helps students become more proficient listeners (Rebenko et al., 2019).

## **2.5 Technology-assisted language learning and listening improvement**

In a practical guide for educators, Harmer (2007) argues that effective listening practice should incorporate both intensive and extensive teaching tactics. When practice takes place both inside and outside of the classroom and boosts motivation for language acquisition, it is said to be "*effective*". Live listening is becoming more effective in today's classrooms as a "*real-life face-to-face encounter in the classroom*" (Harmer, 2007, p. 134). Additionally, Garrett (2009) emphasizes that none of the three components should dominate the others in the interaction between pedagogy, theory, and technology for computer-assisted language learning (CALL), but rather that each of them changes and develops in the links with the others in their context. The extent to which various attention-enhancing instructional techniques support students with varying proficiency levels of the second language (L2). The challenges must be taken into account from both pedagogical and listening proficiency consequences of technology-assisted practice on MOODLE for students majoring in English (Rebenko et al., 2019). Garrett (2009) further demonstrates how employing computers helps increase the efficacy of language learning programs, particularly in CALL. With the integration of texts, music, and videos in the cultural context of the target language, multimedia enables learners to acquire language holistically over time. Furthermore, because language learning is never completed in a

short amount of time, those who use CALL in language acquisition have the opportunity for lifetime learning. English teachers can create a variety of assignments using contemporary information technology and an internet connection to aid students in learning English in unique and interesting ways (Džanić & Hasanspahi, 2020). Finally, when using electronic resources, EFL practitioners will gain from a range of affordances, including engagement, simplicity in access and storage, authenticity, cooperation, immediate feedback, control and empowerment, and learning facilitation (Kervin & Derewianka, 2011).

The above researchers have proven that technology aids students' language acquisition. Numerous studies have discovered encouraging findings in the specific interaction between technology and listening proficiency. According to a number of academics mentioned above, technology helps students improve their listening skills because of its positive effects on society. Particularly, in this research, the phrase "technology application" refers to using the MOODLE system to help students improve their listening skills through consistent listening practice.

However, for their unique needs, language learners require specific technical applications. Fortunately, there is an application called a learning management system (LMS) that can be used to store resources, plan training sessions, and conduct online classroom and e-learning courses. One of the most effective SMS, the MOODLE system was introduced in 1999 and is regarded as a virtual classroom tool to assist instructors in developing challenging online courses (Pham & Nguyen, 2017). According to Cole and Foster (2007), MOODLE is a Modular Object-Oriented Dynamic Learning Environment that allows teachers to support students with a variety of learning resources and assist them in acquiring learning autonomy, autonomous information-seeking skills, and learning accountability. The MOODLE system for distance learning courses comprises a great set divided into various necessary individual educational resources like tests, lessons, tasks, external tools, glossary, comments, feedback, questionnaires, surveys, databases, SCORM packages, seminars, forums, and chat. The MOODLE system, according to Zelinskiy (2020), is created to attain contemporary pedagogical methods employed in both in-person and online learning.

## **2.6 Related studies**

This part summarizes some main previous studies relevant to this research topic, the effects of technology-assisted listening practice on MOODLE on freshmen's listening proficiency majoring in English at a university in the Mekong Delta, and points out not only the benefits but also gaps among the studies previously conducted. This literature review is the foundation for carrying out this research successfully and logically.

To begin with, Pham and Nguyen (2017) conducted a study at Thai Nguyen University of Technology (TNUT) to introduce the model class for students to practice 15 listening tests and 40 vocabulary activities created on Quizlet and Hot Potatoes on their own for the TOEFL-ITP preparatory course. However, rather than being components of the MOODLE system, Quizlet and Hot Potatoes are imported and integrated into the

MOODLE system. In order to practice and learn from the teachings efficiently, students might retry the tests and activities with incorrect answers. The computerized technology allowed the teacher to control the quizzes and activities. The information was developed gradually to assist students in practicing the exercises. As a result, students may practice and review all of the lessons whenever and wherever they wanted using an electronic device that was connected to the internet. However, there is still a significant gap in this research's use of the MOODLE application and determination of listening comprehension outcomes. The readers ask if it took a lot of work for the designers to not simply integrate Quizlet and Hot Potatoes into the MOODLE system instead of directly importing the courses, exams, and exercises since the MOODLE system already has enough features to replace Quizlet and Hot Potatoes. As a result, the MOODLE system has not been sufficiently utilized in the research. Importantly, the research's findings only highlight the freedom students had to practice and review the courses, quizzes, and exercises; an improvement in listening comprehension is not mentioned.

In another case, Zelinskiy (2020) carried out research to examine the MOODLE system's potential for managing distance education for college students. In order to provide students with engaging and intelligent contemporary teaching resources in the right format, teachers primarily employed the MOODLE system with a huge collection of MOODLE resources and elements. To learn foreign languages, students connected with a teacher and had free access to the course. In order for a teacher to assist students with any necessary modifications and modify the exercises to their needs, the MOODLE system automatically examined and analyzed the results of the students. The results suggest that the MOODLE may have broadened the educational process in both regular classrooms and students' independent study by providing a variety of intermediating and controlling forms as well as more tools to manage educational quality. Zelinskiy (2020) does demonstrate that the MOODLE system generally aids students in learning foreign languages better than conventional methods, but this study was carried out at a university in a different country with different educational backgrounds and conditions from universities in the Mekong Delta, Vietnam. Furthermore, instead of focusing on listening proficiency, the results of this study generally highlight the impact of the MOODLE system on students' acquisition of foreign languages.

Nguyen and Nguyen (2021)'s research at Thai Nguyen University aims to ascertain the advantages of using podcasts in the classroom for teaching foreign languages in general, and Vietnamese in particular, as well as to put teaching-learning strategies using podcasts to help foreign students at the intermediate level improve their Vietnamese speaking and listening skills. While the control group would employ more conventional techniques, the experimental group would instruct listening-speaking tasks through podcasts. A survey questionnaire was utilized to gather information about students' interest in learning structure in order to address the research question. The results of this study demonstrate that podcasts can help international students develop their listening skills. However, although the participants in this study on technology-assisted listening proficiency, which was done in Vietnam in 2021 for language

acquisition, the participants were not Vietnamese students, and the study's target language was Vietnamese instead of English. Podcasts are also a type of technological application, but they are simple and do not meet the requirement of a learning management system like the MOODLE system.

In another study conducted by Tran and Ngo (2021), the most relevant background for this research was undertaken at Van Lang University to determine the effectiveness of employing MOODLE to help first-year English majors enhance their listening skills. This study employed a quantitative technique to examine students' perceptions of using MOODLE to enhance their listening abilities. Eighty freshmen with English majors participated in the online survey that was used to collect the study's data. According to the research, the majority of students claimed that using the MOODLE platform gave them more autonomy over their learning and helped them become better listeners of English. However, the largest concern with this study is that the questionnaire and interview are insufficient to draw the conclusion that the MOODLE has a significant impact on students' listening proficiency.

In conclusion, the majority of the previous studies discussed above add to the literature by offering a variety of viewpoints on the effects of technology and MOODLE support on the listening proficiency of English-majored students. However, there are significant gaps that this research still needs to be filled. Firstly, the MOODLE learning management system was mostly utilized to teach and learn broad foreign languages in the majority of the previous research, rather than specifically to enhance the listening proficiency of students majoring in English. Second, a few studies were carried out in universities in the Vietnamese Mekong Delta under similar academic conditions. Therefore, the purpose of this research was to examine the effects of MOODLE-assisted listening practice on first-year students' listening proficiency at a university in the Mekong Delta, Vietnam in order to fill up the gaps mentioned above.

### **3. Material and Methods**

#### **3.1 Research design**

An experimental methodology was used in this research. To analyze the effects of MOODLE-assisted listening practice on the listening proficiency of freshmen majoring in English, this research employed the same IELTS format tests produced by Cambridge Exam Publishing for the pre-test and post-test. The control group and an experimental group were all freshmen. The same course materials (the book *Q-Skills for Success Listening and Speaking 3*, Units 1–5 with the audios) and the same instructional methods were used in class for both groups. The two groups' practices, however, were formed in different ways. The experimental participants did the same practices on the MOODLE system with the support of vocabulary pictures/images, separate word pronunciation sounds, cut audio for each question, and automatic correct/incorrect feedback while the control group gradually completed the practices on printed paper, then received transcripts, and finally received the answers.



### 3.2 Scope of the study

This research's primary objective was to examine whether MOODLE-assisted listening practice affects English-majored freshmen's listening proficiency. The findings of this research can, therefore, be generalized to comparable circumstances in the same field in the future. Additionally, the finding of this research shaped students' attitudes on technology help generally and MOODLE support specifically. As a result, this research's focus was solely on methods for teaching and learning languages. Additionally, the research's findings cannot totally be applied to all university and lower-school students in Vietnam because it was conducted with English-majoring freshmen at a university in the Mekong Delta due to students' low English listening proficiency. Finally, because a rural university in the Mekong Delta served as the research site, students at this university came from a variety of socioeconomic, religious, and multicultural districts, some of which may be distinct from other regions of the country. The research's conclusions can be used at institutions with similar circumstances.

### 3.3 Participants

In two groups of sixty-four English-majoring freshmen in their third semester, this research was done at a university in the Mekong Delta under the direct supervision of the faculty of foreign languages. In a ten-week semester, there were thirty periods for each group, three periods every week. In their weekly schedule, the experimental group included 36 freshmen studying on Tuesday mornings, compared to the control group's 28 freshmen studying on Monday mornings. Because this research focused on investigating the effects of MOODLE-assisted listening practice on English-majoring freshmen's listening proficiency, the experimental group was selected with a higher number of participants. Due to the fact that they had already known some fundamental English, the research freshmen were selected as participants. Additionally, the findings of the study can be applied to enhance their listening proficiency in preparation for the rest years of their university. Luckily, the percentage of male and female participants is the same between the two groups to help measure the students' listening proficiency more effectively (see Table 1).

**Table 1:** Summary of the participants' demographic information in the two groups

Group	Variables	Number	Percentage
Control	Male	21	75%
	Female	7	25%
Experimental	Male	27	75%
	Female	9	25%

### 3.4 Instruments

The following instruments were used to assess how listening practice with MOODLE affected the listening proficiency of freshmen majoring in English.

IELTS 15 (test 2) and 16 (test 4) designed with the same format by Cambridge Exams Publishing were used to administer the pre-test and post-test and ensure the

validity of the tests. The research and the tests were clearly explained to every student in the first week. To evaluate students' listening proficiency before the impacts of MOODLE-assisted listening practice, a pre-test was also administered in the first week of class. In the ninth week, students took the post-test because if they were unable to do it that day, they would take it the final week. Students were urged to take the tests honestly and with confidence to assess their real listening proficiency, but under the teacher's supervision to prevent cheating. The best classroom, loudspeaker, seats, and time were used when the students took their tests in the cool mornings. The tests were meticulously scored by the teacher and the TN Maker scoring application, after that the students may review their results and compare them to the teacher's right answers and transcripts. When students had questions, the teacher assisted them by providing detailed explanations.

A normality test, independent T-tests, and paired-samples T-tests were primarily employed to compare the test results between the control group and the experimental group. The researcher evaluated the test mean scores of the two groups using SPSS version 25 to determine whether there was a statistically significant difference between the two group's listening proficiency.

### **3.5 Treatment**

A control group and an experimental group with the same level of English were all freshmen in the research. The two groups used the same textbook (Q-Skills for Success Listening and Speaking 3, Units 1–5 with the attached audios), the same study methods (Communicative language teaching method, Task-based language teaching method, integrated teaching methods), and the same study materials throughout the class. With the exception of the two weeks for the tests, there were eight practices in eight weeks. The eight listening practices had well-designed pre-listening tasks that required vocabulary learning support (meaning, phonetic symbols/pronunciation, spelling).

Even nevertheless, the listening techniques used for the two groups were different. The control group was given files and printed materials for their listening practices; they completed the practice and sent in their answer sheets to the teacher. Then, the answers were then given to the students by the teacher after they had listened to the audio again and double-checked their answers with the transcripts for the second submission, so if students did the exercises correctly with the transcript support in the second submission, the teacher could help with their possible listening challenges. The teacher graded the practice and gave the results to the students, allowing them to compare their results between the first and second submissions. The teacher assisted the students and provide an explanation if they had any questions. In order to help score the practices exactly, the TN-maker scoring application was used to handle grading weekly practice papers for a large number of students that had multiple-choice questions.

The experimental group, on the other hand, completed the same eight practices as the control group, but the practices were created using the MOODLE system and supported by pictures/images, separate word pronunciation sounds for vocabulary,

automatic cut audio/video feedback, and correct/incorrect feedback for each question. There were three steps with particular deadlines in each practice. The MOODLE system automatically provided feedback on whether the response was accurate, along with cut audio that included the appropriate response for each question after the first submission. If the response was incorrect, the students could listen to the MOODLE system's automated feedback of cut audio for the best answer in the second submission. The students were able to focus more on the answer and identify it more easily with the shortened audio with key information for the correct answer than with the lengthy audio. After their second submission, students automatically received feedback with a transcript that highlighted the pertinent details for each question. If they were unable to hear them while listening, the transcript with the underlined keywords helped the students better distinguish the right answer. Then, in order to solve their listening obstacles and tricks, they needed to listen to the cut audio again to identify the listening challenges or tricks and become familiar with the pronunciation, intonation, and link-in words. The students then submitted the practice for the last time and received all of the feedback for the automatic correct answers. After submitting the practice three times, students compared their own responses to the system's feedback. Students received assistance and explanation from the teacher if they needed them. Following that, there were no more time constraints for the practices and students were free to practice without deadlines. The teacher set deadlines for each practice submission in order to ensure that students completed them and manage their learning process. The teacher would also readily assist students if they encountered any difficulties, particularly technological issues. These practices were specially created on MOODLE to investigate the effects of MOODLE-assisted listening practice on the listening proficiency of freshmen majoring in English.

### **3.6 Research process**

In this section, the actual data analysis process was thoroughly explained. The researcher first gave an introduction, requested consent from the participants, and asked them to participate in the research. The data analysis was completed based on the findings of the investigation. Using SPSS, the researcher compared the quantitative data from the pretest and post-test results to determine whether there was a statistically significant difference between the two groups' test results. The research conclusion focused on whether and how the technology-assisted listening practice on MOODLE had affected the students' listening proficiency based on the findings of the quantitative data analysis.

### **3.7 Data analysis procedure**

In the first week of the ten-week semester, after the researcher gave a thorough explanation of the tests students took the pretest. Then, the students used the MOODLE system for eight practices in eight weeks. The students took the post-test until week nine because they could take it in the final week if they had problems with being absent from the post-test. In order to determine whether the technology-assisted listening exercise on MOODLE had an impact on the freshmen's listening proficiency, the results of the two

tests were carefully compared and analyzed. Below is a full explanation of the technique for analyzing quantitative data.

#### 4. Results and Discussion

##### 4.1 Participants' listening proficiency comparison between the two groups before and after the intervention

The IELTS listening pre-test and post-test were administered to students in the control group and experimental group before and after the intervention, as indicated in Chapter 3. The IELTS scale was used to determine the listening test scores, which ranged from 2 to 9.

Both pretest and post-test were highly reliable because their Cronbach's Alphas were gradually 0.807 and 0.830 (see Table 2).

**Table 2:** The reliability of the pretest and post-test

Test	Number of participants	Cronbach's Alpha
Pilot pretest	32	.818
Official pretest of the two groups	64	.807
Pilot post-test	32	.837
Official post-test of the two groups	64	.830

The findings of the Kolmogorov-Smirnov test were interpreted since each test for both groups had more than 50 participants ( $N = 64 > 50$ ), as can be seen in Table 3.

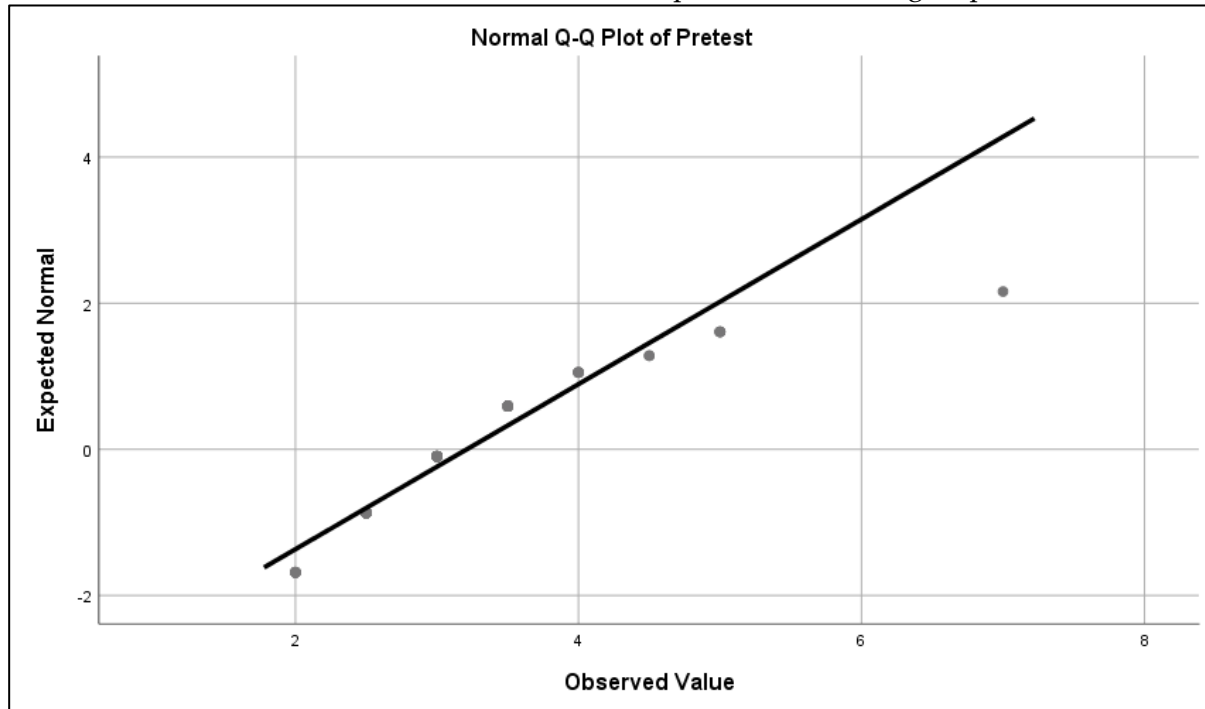
As described in Tables 4 and 5, both the pretest and post-test p-values (Sig.) for the two groups were 0.00, less than 0.05. Data were normally distributed because the majority of the data points were near the chart's diagonal line. In conclusion, the pretest and post-test were normally distributed and the null hypothesis had to be rejected as shown by the following Normal Q-Q Plots of the pretest and post-test.

**Table 3:** The normality of the pretest and post-test of the two groups

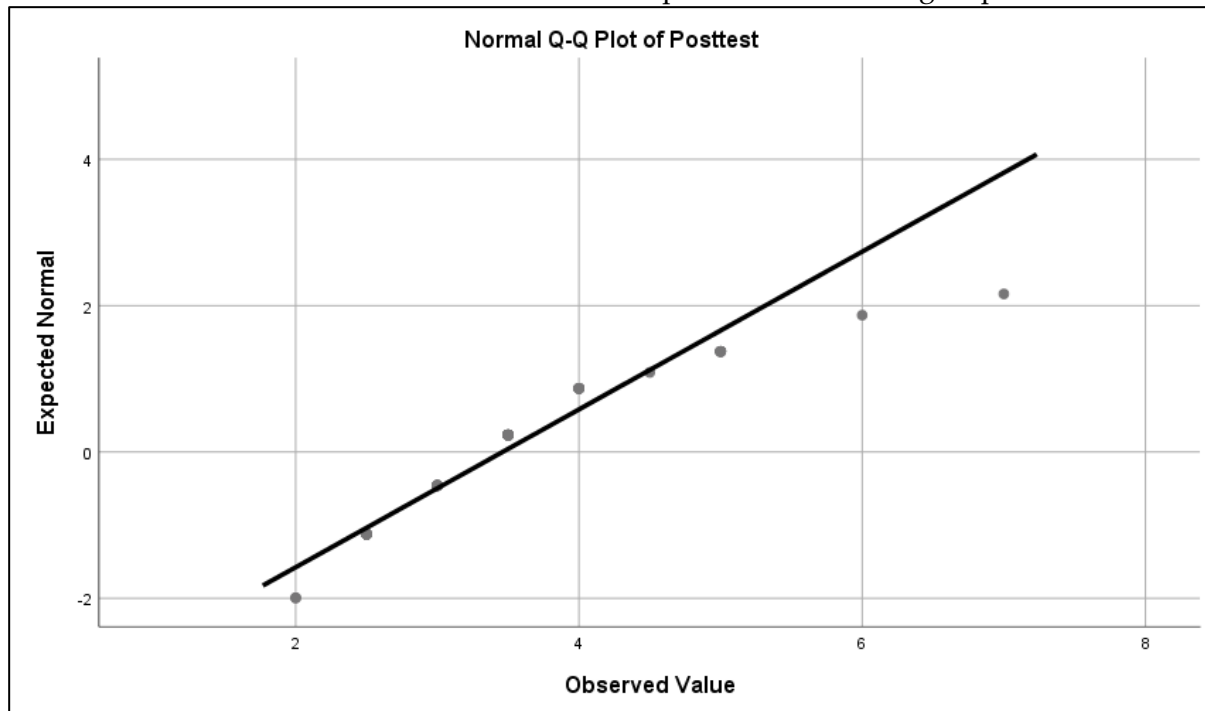
Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.219	64	.000	.851	64	.000
Posttest	.249	64	.000	.871	64	.000

a. Lilliefors Significance Correction

**Table 4:** The distribution of the pretest of the two groups



**Table 5:** The distribution of the post-test of the two groups



The following parametric tests were used because of the normality test's above results, which showed that the pretest and post-test data were normally distributed and that the null hypothesis was rejected. To determine if the control group and experimental group had the same level of listening proficiency in the pretest and post-test, independent-samples T-tests were used to compare the results of the pretest and post-

test between the control group and experimental group. Finally, paired-samples T-tests were performed to assess the growth in listening proficiency between the pretest and posttest in each group.

The pretest p-value (Sig.) was 0.06, higher than 0.05, as shown in Table 6, hence the result was taken into consideration for the first row (Equal Variances Assumed). The two-tailed p-value was 0.465 and was higher than 0.05, indicating that there was no significant difference in the pretest results between the two groups. As a result, before using technology-assisted listening practice on MOODLE to educate the experimental group's listening comprehension, the listening proficiency of the two groups was relatively at the same level. The findings also hypothesized that any differences between the experimental group's and the control group's listening proficiency in the post-test could be attributed to the experimental group's use of the technology-assisted listening practice on MOODLE.

Similarly, the post-test p-value was 0.004, lower than 0.05, so the two-tailed p-value was 0.883, higher than 0.05, not statistically significant. As a result, the post-test results showed no significant difference between the two groups. In other words, after using MOODLE's technology-assisted listening practice to teach listening comprehension to the experimental group, the listening proficiency of the two groups was almost at the same level.

**Table 6:** The participants' listening proficiency comparison between the two groups in the pretest and post-test

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
Pretest	Control	28	3.304	1.0915	.2063
	Experimental	36	3.139	.6929	.1155
Posttest	Control	28	3.482	1.2284	.2321
	Experimental	36	3.444	.6185	.1031

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Pretest	Equal variances assumed	3.665	.060	.735	62	.465	.1647	.2240	-.2830	.6124
	Equal variances not assumed			.697	43.297	.490	.1647	.2364	-.3120	.6414
Posttest	Equal variances assumed	9.093	.004	.160	62	.873	.0377	.2354	-.4329	.5083
	Equal variances not assumed			.148	37.571	.883	.0377	.2540	-.4767	.5521

#### 4.2 Participants' listening proficiency comparison in each group before and after the intervention

From the pretest to the post-test, there was a different improvement in listening proficiency between the experimental group and the control group. As presented in Table 7, the two-tailed p-value of the control group's post-test and pretest was 0.265, indicating that there was no statistically significant change in the control group's listening proficiency from the start to the completion of the listening course. However, the two-tailed p-value for the experimental group's post-test and pretest was 0.001, so the experimental group's listening proficiency improved more significantly after the intervention of the MOODLE-assisted listening practice.

In particular, as shown in Table 7, the mean score of Paired Samples Statistics (the pretest and post-test) for the control group only slightly increased by 0.1786 (from 3.304 in the pretest to 3.482 in the post-test), while the mean score of Paired Samples Statistics for the experimental group increased more significantly by 0.3056. (from 3.139 of the pretest to 3.444 of the post-test). Although the experimental group started with a lower mean score (Pretest mean score =3.139) than the control group's (Pretest mean score =3.304), this led to variation among the cases in the experimental group, as the mean scores showed that the listening proficiency of the experimental group made greater progress (1,7 times) than that of the control groups.

Additionally, Table 7 showed that the Standard Deviation values of the control group increased by 0.137, indicating that there was a larger negative gap, indicating that individual students were not equally proficient in the control group in their listening proficiency between the results of the pretest and the post-test. Contrarily, the Standard Deviation values of the experimental group decreased by 0.0744, indicating that the experimental group made a better equal improvement in listening proficiency among single members.

**Table 7:** The participants' listening proficiency comparison between the pretest and the post-test of each group

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1 (Control)	Pretest	3.304	28	1.0915	.2063
	Posttest	3.482	28	1.2284	.2321
Pair 2 (Experimental)	Pretest	3.139	36	.6929	.1155
	Posttest	3.444	36	.6185	.1031

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1 (Control)	Pretest- Posttest	-.1786	.8302	.1569	-.5005	.1433	-1.138	27	.265
Pair 2 (Experimental)	Pretest- Posttest	-.3056	.4822	.0804	-.4687	-.1424	-3.802	35	.001

In conclusion, a variance difference between the control groups and the experimental group's proficiency from the pretest to the post-test was evident, as shown by the findings of the analysis mentioned above. The listening proficiency of the experimental group improved statistically from the start to the end of the course, but the control group showed no discernible improvement. The experimental group began with a lower level of listening proficiency compared, even if both groups' listening competence was relative at the same level in the pretest and post-test. In other words, the experimental group improved their listening proficiency more than the control group after receiving the technology-assisted listening exercises on the MOODLE to learn English listening.

The above-analyzed data results helped to confirm the hypothesis at the beginning was correct because technology-assisted listening practice on MOODLE improved the English listening proficiency of learners in this research. Moreover, this research helped to confirm that the findings of related studies mentioned at the beginning on related topics were right. In fact, technology, particularly the MOODLE system, was a useful and flexible tool with abundant attached learning resources for English-majored listener practitioners in both in-class and out-class in Vietnam.

This research's findings also filled the gaps in some related studies. Firstly, Pham and Nguyen (2017) could use only the MOODLE system instead of the complexity of the integration between MOODLE with Quizlet and Hot Potatoes to help learners have flexible lessons. Secondly, Nguyen and Nguyen (2021) should have used the MOODLE system with a large number of management functions while they solely used simple learning resources, Podcasts. Finally, Tran and Ngo (2021)'s conclusion would be more persuasive that MOODLE improved the freshmen's listening proficiency if they employed tests in their research instead of only questionnaires.

Last but not least, why did not the control group make better progress from the beginning to the end of the listening course? The answer might be deemed due to a shorter time of the course, but with the same learning content as the experimental groups. In fact, two weeks of the control group's learning schedule coincided with national holidays, so they had to make up the two-week lessons and two practices in the same two weeks with the other lessons, so they were more overwhelmed than the experimental group. This fact might negatively affect the control group's listening proficiency after the course.

## **5. Recommendations**

In further relevant research, instead of experimental methods with only tests, quasi-methods with tests, questionnaires, and interviews should be employed to investigate the control participants' whole opinions about whether the shorter learning schedule negatively affects participants' listening proficiency after a course and the experimental group's ideas about the effects of MOODLE-assisted listening practice on learners' listening proficiency as well as its drawbacks. Therefore, the research conclusion will



have a whole convincing picture of the participants' learning circumstances and the treatment.

Moreover, as Garrett (2009)'s statement about the negative impacts of short language-learning time on learner's listening proficiency, so a longer period will be better for the investigation because the ten-week semester was considered too short to examine deeply the effects of MOODLE-assisted listening practice on learners' listening proficiency. In fact, during the ten-week semester, both groups had to spend almost two weeks preparing and doing the midterm test and final test. Therefore, they could not completely take advantage of the MOODLE-assisted listening practice for their listening proficiency. Besides, a long semester will be better for flexible compensation learning plans if there are coincident holidays as mentioned, and students can have more time to digest the lessons through the practices.

## 6. Conclusion

In this research, after deep data analysis and discussion on the topic of the effects of technology-assisted listening practice on MOODLE on English-majored freshmen's proficiency, the conclusion includes that

- from the data analysis, technology-assisted listening practice on MOODLE significantly improved English-majored freshmen's proficiency.
- the literature review supported adequate information about how to help students improve their listening proficiency with technology-assisted listening practice on MOODLE.
- from the real learning conditions, further studies on similar topics should be conducted in a long period.

## Acknowledgement

I would like to express my sincere and deep gratitude to my supervisor, teachers, previous researchers, family, and friends for their kind instruction and support that enlightened my mind to fulfill this research meaningfully and successfully.

## Conflict of Interest Statement

The authors declare no conflicts of interest.

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