

ENHANCING ENGLISH LISTENING SKILLS THROUGH AI-BASED DICTATION: A STUDY OF THE PARROTO MOBILE APPLICATION AMONG FIRST-YEAR NON-ENGLISH MAJORS AT HONG DUC UNIVERSITY

Le Thi Huong¹, Nguyen Thi Thuy Ngan¹, Le Thi Thanh Huong¹

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Abstract: *This study investigates the impact of the Parroto mobile application on students' listening comprehension and their experiences with AI-supported dictation. A total of 106 first-year non-English majors were divided into an experimental group (n = 58) and a control group (n = 48). The study employed a mixed-methods design over an eight-week period during the first semester of the 2025–2026 academic year. Data were collected through pre-tests, post-tests, a post-treatment questionnaire, and semi-structured interviews. Results show that the experimental group improved more in listening performance than the control group. Dictation activities helped learners focus better on spoken input and improve sound and word recognition. Students reported positive experiences, especially regarding usability, structure, and immediate feedback.*

Keywords: Parroto, listening comprehension, AI-supported dictation.

1. Introduction

1.1. Background of the study

In October 2025, the Prime Minister of Vietnam issued Decision No. 2371/QĐ-TTg approving the project entitled “Making English a Second Language in Schools for the period 2025-2035, with a vision to 2045.” The policy reflects the growing importance of English in education and students' future academic lives. For university students, listening is an important part of language learning because it provides essential input for developing other language skills (Rost, 2011).

However, listening is often difficult for non-English major students, especially those with low English proficiency. From the researchers' experience of teaching these students at Hong Duc University, many first-year learners have difficulty identifying individual sounds and words in spoken English, particularly when speakers talk quickly or when words are connected in natural speech. The diagnostic results also showed that all participants were at the A1-A2 level. These difficulties suggest that students need more opportunities to practise listening beyond regular classroom lessons. At the same time, artificial intelligence (AI) has made it easier for learners to access additional language practice outside the classroom. AI-based tools can provide flexible practice and immediate feedback, allowing students to practise at their own pace (Chang & Sun, 2024; Yan et al.,

¹ Faculty of Foreign Languages, Hong Duc University; Email: nguyenthingocnn@hdu.edu.vn

2025). For the present study, Parroto was chosen because its activities combine listening with dictation. Students listen to short audio or video clips, type what they hear, check their answers, and repeat the activity when necessary. This process provides repeated exposure to spoken English while drawing attention to individual sounds and words. Parroto was therefore considered a supplementary tool for focused listening practice.

Although AI has received increasing attention in language education, research on Parroto remains limited. In particular, little is known about its use with first-year non-English majors in a Vietnamese university context or how these learners experience AI-supported dictation. This study therefore examines Parroto at Hong Duc University, focusing on changes in listening performance and students' experiences with the application. The study addresses two research questions:

- (1) *To what extent does the Parroto application improve students' listening skills?*
- (2) *How do students perceive the use of Parroto in their learning?*

1.2. Theoretical framework

1.2.1. The role of AI-based applications in enhancing listening skills

In recent years, Artificial intelligence is increasingly being integrated into language learning contexts, particularly as a tool to support listening practice. One key benefit is that it allows learners to study in a more flexible and individualized way instead of relying only on traditional classroom routines (Chapelle & Sauro, 2017). Another important feature is the ability of these systems to deliver instant feedback, which helps learners recognize and correct their errors more efficiently (Zawacki-Richter et al., 2019; Chang & Sun, 2024).

In addition, learners can be exposed to a wider range of listening materials, including authentic speech and different accents. Such exposure is essential because progress in listening largely relies on frequent exposure to authentic language in real contexts (Brown, 2001; Rost, 2011). In addition, AI supports structured practice activities such as dictation, which require learners to process spoken language more deeply (Nation & Newton, 2009). Recent reviews have highlighted the potential of AI-supported language learning to provide flexible, interactive, and personalized practice (Chang & Sun, 2024; Yan et al., 2025).

1.2.2. Dictation and Its Role in Enhancing Listening Skills

From a practical perspective, dictation remains a widely used classroom activity, especially for improving learners' listening accuracy over time. During dictation tasks, learners are required to process spoken input attentively and reproduce it in written form (Davis & Rinvolutri, 1988). Dictation helps learners become more attentive to pronunciation features such as stress, intonation, and sound patterns. Over time, repeated practice helps students become more familiar with natural speech patterns (Nation & Newton, 2009). It also requires concentration, since learners cannot rely on passive listening (Brown, 2001). Another advantage is that students can compare their written version with the correct transcript, which helps them notice their own errors. This process helps learners recognize their errors and become more aware of language use (Harmer, 2007). For these reasons, dictation is still widely considered a practical technique for improving listening skills.

1.2.3. *The Parroto application and its key features*

The Parroto application is a mobile learning tool designed to support listening practice through dictation tasks. In each activity, learners listen to audio or video clips and type what they hear. The system then checks their answers automatically and highlights mistakes, giving immediate feedback. What makes Parroto different is that it uses real-world listening materials, including natural speech and different accents. This helps learners get used to how English is actually spoken outside the classroom. The learning process is quite structured. Students listen, transcribe, check their answers, and then repeat the task if needed. This cycle encourages continuous practice rather than one-time learning. In this study, Parroto was used as a supplementary tool to support regular listening instruction.

2. Methodology

2.1. *Research Design*

The study used a quasi-experimental design with two groups: a control group taught using conventional textbook-based listening practice, and an experimental group instructed using the Parroto application. To examine the effectiveness of the Parroto application in enhancing listening comprehension, both groups took a pre-test and a post-test.

The research was conducted over an eight-week period during the first semester of the 2025-2026 academic year. Both groups were instructed by the same teacher to control for potential teacher-related variables.

2.2. *Participants*

Two classes of non-English major students from Hong Duc University were selected as the experimental and control groups. The participants were first-year university students majoring in pedagogy. The study involved 58 students in the experimental group and 48 students in the control group. Based on a researcher-designed listening diagnostic test administered prior to the study, all participants were at the A1-A2 level of English proficiency, and none had prior experience with practising listening using the Parroto application.

2.3. *Instruments and Data Collection*

Three primary instruments were employed in this study:

Listening Comprehension Tests: The researcher developed a pre-test and a post-test to assess students' listening comprehension before and after the eight-week intervention. Each test consisted of 20 multiple-choice questions designed for A2-level learners. The listening materials covered familiar, everyday topics and assessed several aspects of listening, including understanding the main idea, identifying specific details and key words, making simple inferences, and recognizing sounds and words in spoken English. For each item, students listened to a short recording twice and selected one answer from four options (A–D). Each correct answer was awarded 0.5 points, giving a maximum score of 10.

The two tests followed the same format and were designed to be comparable in content and difficulty. The test administration procedures were also kept consistent for both groups. The test content was aligned with the listening skills and language level targeted

in the course and the intervention. However, no formal statistical reliability coefficient was calculated for the tests. Therefore, this limitation should be taken into account when interpreting the findings. Teaching and Learning Materials and Procedures:

Control group: Audio materials from Speakout: Elementary (Pearson Education/Longman) were used as the main listening input, with scripted recordings and textbook exercises.

Experimental group: In the first four weeks, students practiced listening and dictation with A1-level videos on the Parroto app, then moved to A2-level in the next four weeks. Students completed five videos per week, and the content matched the weekly topics in *Speakout*.

Student Feedback Questionnaire: A post-treatment questionnaire consisting of five open-ended questions was administered to the experimental group to explore students' experiences of using the Parroto application and the challenges they encountered during self-study. In addition, semi-structured interviews were conducted with five selected participants to gain further insights into their learning experiences. The questionnaire responses and interview data were analyzed thematically.

Data collection and data analysis: Both quantitative and qualitative data were gathered for analysis. The quantitative data came from the pre-test and post-test scores of the two groups. These tests were administered before and after the eight-week intervention under the same conditions. In addition, qualitative data were collected through a post-treatment questionnaire and semi-structured interviews with selected participants in the experimental group.

For data analysis, descriptive statistics such as percentages and score distributions were used to compare students' performance between the pre-test and post-test in both groups. The results were then interpreted to identify any changes in listening comprehension. Qualitative data from the questionnaire and interviews were analyzed thematically to explore students' experiences, perceptions, and challenges when using the Parroto application.

3. Results and discussion

This part presents a detailed analysis of both quantitative and qualitative findings. The results are structured into two main sub-sections: (1) an analysis of pre-test and post-test results, (2) Students' learning experiences and challenges faced with dictation activities on the Parroto application

3.1. Comparison of Pre-test and Post-test Results in Both Groups

To examine changes in students' listening performance after the eight-week intervention, both groups completed a pre-test and a post-test. The results were compared using mean scores, standard deviations, and the distribution of students across four score levels. The findings are presented in Tables 1 and 2.

Table 1. Descriptive Statistics of Pre-test and Post-test Scores

Group	n	Pre-test M (SD)	Post-test M (SD)	Mean gain
Control	48	5.13 (2.08)	5.48 (2.04)	+0.35
Experimental	58	5.49 (2.05)	6.03 (1.94)	+0.53

The two groups had fairly similar starting points, although the experimental group had a slightly higher pre-test mean ($M = 5.49$) than the control group ($M = 5.13$). After eight weeks, scores increased in both groups. The increase was greater in the experimental group, which gained 0.53 points compared with 0.35 points in the control group.

The score distribution shows a similar pattern. In the control group, the proportion of students in the Poor category fell from 31.25% to 22.92%, while in the experimental group it fell from 31.03% to 17.24%. The proportion of students in the Excellent category remained unchanged in the control group (6.25%) but increased from 8.62% to 12.07% in the experimental group. In both groups, 50% of students were in the Average category in the post-test, indicating that a considerable proportion of students remained at the middle level.

Table 2. Distribution of Students by Listening Score Level

Score level	Control Pre-test n (%)	Control Post-test n (%)	Experimental Pre-test n (%)	Experimental Post-test n (%)
Poor (<4)	15 (31.25%)	11 (22.92%)	18 (31.03%)	10 (17.24%)
Average (4–6.5)	21 (43.75%)	24 (50.00%)	25 (43.10%)	29 (50.00%)
Good (6.5–8.5)	9 (18.75%)	10 (20.83%)	10 (17.24%)	12 (20.69%)
Excellent (≥ 8.5)	3 (6.25%)	3 (6.25%)	5 (8.62%)	7 (12.07%)
Total	48 (100%)	48 (100%)	58 (100%)	58 (100%)

Overall, both groups improved, but the experimental group showed a somewhat larger gain. One possible explanation is the repeated listening and dictation practice provided through Parroto. Students listened to short recordings, typed what they heard, checked their answers, and repeated the task when necessary. This required them to pay close attention to sounds and words and may have helped them process spoken English more carefully. This interpretation is in line with the role of repeated and focused listening practice discussed by Nation and Newton (2009).

However, the results need to be interpreted with caution. The analysis is descriptive and does not indicate whether the difference in gains between the two groups was statistically significant. The experimental group also started with a slightly higher pre-test mean. Therefore, the results point to a more favorable improvement trend in the Parroto group, but they do not by themselves provide sufficient evidence to claim a causal effect of the application.

3.2. Students' Learning Experiences and Challenges in Using the Parroto Application

The qualitative data from the open-ended questionnaire and the semi-structured interviews were analyzed thematically. Four main themes were identified: (1) learner perceptions of usability and engagement, (2) instructional design supporting dictation, (3) perceived gains in listening development, and (4) challenges encountered by learners.

3.2.1. Learner Perceptions of Usability and Engagement

For the most part, students had quite positive first impressions of the Parroto application. Many mentioned that the interface was clear and easy to use, which helped them feel comfortable using the app on their own. The short video lessons were also seen as interesting and helped make the learning process less boring. Several students pointed out that the lessons were short, which made it easier for them to practice regularly without feeling pressured. For example, interviewee 3 said, *“The lessons are short, so I can study every day without feeling overwhelmed”*. Interviewee 5 shared, *“The interface is easy to use, and the videos are interesting”*. These responses show that when the app is simple to use and the lessons are not too long, students are more likely to keep practicing.

3.2.2. Instructional Design Supporting Dictation

Another important point is how the lesson design supports dictation. In particular, students found the sentence-by-sentence format very helpful. Students perceived the sentence-by-sentence format as making it easier to listen and write at the same time. Interviewee 1 explained, *“Breaking the audio into sentences helps me catch each word more clearly”*. Interviewee 4 said, *“I can listen and write step by step, so I understand the sentence better and pay more attention to pronunciation”*. In general, this suggests that smaller, more manageable chunks of audio can help students handle dictation tasks more effectively.

3.2.3. Perceived Gains in Listening Development

Students also talked about several ways dictation helped them improve their listening. A common point was that they had to focus more when listening. Because they needed to listen many times, they paid closer attention to what they heard. For example, interviewee 3 shared, *“I had to listen again and again, but each time I understood a bit more”*. Interviewee 2 said, *“I had to pay really close attention, especially to the ending sounds”*. These responses suggest that dictation encouraged students to listen more carefully. Students also mentioned that they became more used to natural speech, especially fast speaking and how words are connected. Interviewee 4 said, *“At first, I could not follow the fast speech of native speakers, but now I understand more because I get used to the speed”*. Interviewee 5 added, *“Dictation helps me notice how words are linked together”*. Another benefit was that students became more aware of their mistakes. By checking their answers with the transcript, they could see exactly what they missed. For example, one student wrote, *“I know which words I didn’t hear correctly when I check the answers”* (Questionnaire response). This was also mentioned in interviews, such as: *“It shows me exactly what I miss”* (Interviewee 1).

3.2.4. Challenges Encountered

Besides the benefits, students also faced some difficulties. One common problem was that they could not always catch what was being said, especially when the speaker talked too fast or the pronunciation was not clear. As interviewee 2 said, *“Sometimes I just can’t catch what they’re saying, especially when it’s too fast”*. Limited vocabulary was

another issue. When students did not know a word, it became very difficult for them to write it down correctly. Interviewee 3 explained, “*If I don’t know the word, I can’t really write it down correctly*”. Some students also felt that dictation takes time and can be tiring. Since they had to listen many times, the activity sometimes felt a bit demanding. Interviewee 5 shared, “*I have to listen again and again, so it takes a lot of time*”.

All things considered, the results show that dictation on the Parroto application can support listening practice in a meaningful way. At the same time, factors such as speech speed, vocabulary knowledge, and the amount of effort required can affect how effective the activity is. While Parroto provides meaningful support for listening practice, learners may benefit more when it is used alongside appropriate guidance or instructional support.

4. Conclusion

4.1. Main findings

This study examined the use of the Parroto application as a supplementary tool for English listening practice among first-year non-English majors at Hong Duc University. After eight weeks, both groups showed improvement, with a larger gain in the experimental group. Students also generally responded positively to the application, particularly its short lessons, clear interface, sentence-by-sentence dictation, and immediate feedback. At the same time, fast speech, unfamiliar vocabulary, and the need to listen repeatedly remained challenges for some learners.

4.2. Pedagogical implications

The findings suggest that Parroto can provide useful additional listening practice outside the classroom. Dictation activities, repeated listening, and immediate feedback may encourage students to pay closer attention to spoken English and notice their own errors. However, these activities work best with appropriate teacher guidance, especially for lower-level learners who may struggle with fast speech or unfamiliar vocabulary. Parroto is therefore better used to complement classroom instruction rather than replace it.

4.3. Limitations and future research

This study has several limitations. The participants came from one university, the sample was relatively small, and the intervention lasted only eight weeks. In addition, the quantitative findings were based on descriptive statistics and did not establish statistical significance, while the qualitative data came from a limited number of students. Future studies could involve larger samples, longer interventions, and inferential statistical analysis to examine the effects of AI-supported dictation more rigorously.

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