

Enhancing TOEIC Listening Performance Through Explicit Lexical Stress Instruction

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Abstract

English listening comprehension remains a significant challenge for many EFL learners, particularly in high-stakes testing contexts such as the TOEIC, where rapid speech and prosodic features can hinder understanding. Among these features, lexical stress plays a crucial role in speech perception, yet it is often underemphasized in instruction. This study examined the impact of explicit lexical stress instruction on the TOEIC Listening performance of Thai engineering undergraduates. Seventy-three fourth-year mechanical engineering students participated in a 15-week intervention that integrated pronunciation-focused instruction with TOEIC-style listening practice. Data included a 50-item lexical stress pre/posttest, a mock TOEIC Listening pre/posttest, and a post-instruction focus group interview. Quantitative analyses revealed substantial improvement in stress identification accuracy, with a mean gain of 12.56 points ($p < .001$). TOEIC Listening scores also increased significantly. Qualitative results indicated that lexical stress training enhanced general listening comprehension, facilitated vocabulary retention, improved recognition of noun-verb stress contrasts, and strengthened learners' confidence and exam readiness. Participants reported that accurate stress practice enhanced their listening ability, "enabling more efficient segmentation of natural-speed input. Thematic vocabulary grouping and AI-assisted pronunciation tools further supported learning. The findings confirm that lexical stress awareness plays an important role in improving English listening comprehension and high-stakes test outcomes.

Keywords: lexical stress, listening comprehension, pronunciation instruction, TOEIC Listening, Thai learners

1. Introduction

Standardized English proficiency assessments such as the Test of English for International Communication (TOEIC), play a pivotal role in evaluating English language competence for academic, professional, and international purposes. In many non-English-speaking countries including Thailand, TOEIC scores are widely used by universities, government agencies, and private employers as benchmarks for job readiness and communicative ability. For university students, especially those in technical fields such as engineering, the achievement of a satisfactory TOEIC score is often a graduation requirement and a prerequisite for employment opportunities (Wongsa, 2018). As a global standard for measuring receptive language skills, the TOEIC not only functions as an assessment tool but also drives English language instruction and learner motivation (ETS, 2020).

Previous research studies have shown that Thai test-takers face persistent challenges with listening comprehension due to factors such as fast speech, reduced forms, unfamiliar vocabulary, and difficulty segmenting continuous speech (Kanoksilapatham, 2025; Kanoksilapatham & Pariwatananont, 2024; Watcharapunyawong & Usaha, 2013). These problems are closely linked to limited exposure to authentic input and insufficient phonological awareness. In particular, weak command of suprasegmental features, including stress, rhythm, and connected speech, has been identified as a major barrier to effective listening among Thai learners (Kanoksilapatham, 2014).

A growing body of research indicates that explicit pronunciation instruction, especially instruction targeting suprasegmental features, can significantly enhance learners' ability to perceive spoken language (Derwing & Munro, 2005; Field, 2005; Goh, 2000; Hahn, 2004). Yet, within the Thai EFL context, pronunciation is often marginalized, receiving limited instructional time (Kanoksilapatham, 2025). Consequently, many learners struggle to comprehend naturally spoken English, a concern that is particularly relevant in TOEIC listening contexts, where rapid delivery, reduced speech, and native-like fluency are standard.

Although some Thai studies have explored pronunciation learning strategies (Taladgnoen, Pinsak, & Chuenchomnakiad, 2020) and attitudes toward pronunciation instruction (Bakoko, Waluyo & Songkhai, 2023), few have investigated its direct impact on TOEIC listening performance. Existing research also tends to focus on English majors rather than learners in technical or vocational disciplines. A recent study by Rutamornchai, Manokarn, Petchmongkon, Thinthonglang, Montreewong, Jiamanukunkij, and Thatsakhorn (2024), for instance, found that Thai engineering students experienced marked difficulty decoding reduced speech in TOEIC listening tasks and expressed a need

for more targeted listening support.

This study addresses this gap by examining the effectiveness of a pronunciation-based instructional intervention with the aim of improving TOEIC listening scores among fourth-year engineering students in Thailand. The intervention centers on suprasegmental features, with a particular focus on lexical stress placement. The research seeks to answer two questions: 1. What is the impact of lexical stress instruction on TOEIC listening comprehension among Thai engineering undergraduates? and 2. What are students' attitudes toward such instructional approach? By examining a population preparing to enter the job market, this study offers practical pedagogical insights for instructors and curriculum designers working in EFL contexts, where standardized test performance carries significant academic and professional consequences.

2. Literature Review

This section is organized into two subsections: an overview of the TOEIC listening component, and a review of research on the relationship between pronunciation, particularly lexical stress and listening comprehension.

2.1 TOEIC Listening: An Overview

The Test of English for International Communication (TOEIC), developed by ETS, is a globally recognized assessment measuring English proficiency required for professional communication. Current TOEIC products include the TOEIC Listening & Reading (L&R), TOEIC Speaking & Writing (S&W), and TOEIC Bridge test for lower-proficiency learners. The TOEIC L&R test remains the most widely used, evaluating learners' ability to comprehend workplace-related spoken and written English. The TOEIC L&R test consists of 200 multiple-choice items, administered over approximately two and a half hours. Each section produces scaled scores, ranging from 5 to 495, yielding a total score between 10 and 990. Scores are statistically equated to ensure comparability across administrations and remain valid for two years (Hsieh, 2023). Scores from the L&R test, often used alongside S&W test results, inform decisions related to hiring, placement and promotion.

This study focuses on the listening section, which assesses test-takers' ability to comprehend spoken English in realistic workplace situations. Because effective communication in professional settings is heavily reliant on listening, understanding instructions, participating in meetings, and responding to announcements, the listening score is a strong indicator of practical communicative competence. To better contextualize this focus, the structure and content of the TOEIC Listening section are outlined below.

The listening section comprises 100 items delivered in approximately 45 minutes and is divided into four parts. Part 1 entails the selection of the statement that best describes an image. Part 2 involves choosing the most appropriate reply to a brief question or statement. Part 3 requires answering questions based on short dialogues involving two or more speakers. Finally, Part 4 requires responding to questions about monologues such as announcements or brief presentations. All audio is played once at natural speed by native or near-native speakers, placing high perceptual demands on test-takers. Overall, the TOEIC Listening section offers an integrative measure of learners' ability to comprehend real-world spoken English. Its alignment with workplace communication makes it a valuable tool for evaluating the listening skills essential in today's globalized professional environment.

2.2 Previous Research on Lexical Stress

A central finding in English language speech research is that heightened awareness of lexical stress significantly enhances learners' listening comprehension. Evidence from experimental, technological, psycholinguistic, and pedagogical studies consistently shows that sensitivity to lexical-stress cues facilitates segmentation, prediction, and lexical access during real-time listening (Costille, 2024; Sagarra, Fernández-Arroyo, Lozano-Argüelles, Casillas, 2024; Stoughton & Kang, 2024; Yenkimaleki, van Heuven, & Moradimokhles, 2023).

Experimental research on prosody instruction provides strong support for the claim that explicit prosody training improves listening performance. Yenkimaleki et al. (2023) demonstrated that interpreter trainees, who received explicit prosody training which is focused on stress, rhythm, and intonation, outperformed peers without such instruction on listening comprehension tasks. Their study also highlighted the importance of instructional methodology in determining the magnitude of learning gains, reinforcing that listeners rely heavily on suprasegmental cues to anticipate word boundaries and process speech efficiently.

Technology-assisted pronunciation instruction further underscores the value of lexical-stress instruction. Sardegna and Jarosz (2023) found that digital pronunciation tools helped learners improve their attention to stress cues and rhythmic patterns, resulting in more accurate perception of polysyllabic words. Similarly, Stoughton and Kang's (2024) systematic review on mobile-assisted pronunciation instruction reported consistent improvements in learners' perception and production of prosodic features. Complementary research by Ma, Mei, and Qian (2024) showed that data-driven pronunciation training supports learners' noticing and acquisition of word-stress patterns, leading to improved comprehension of spoken English.

Additional studies offer further empirical support. Costille's (2024) pilot study, which incorporated real-time speech visualization and shadowing practice, demonstrated improvements in learners' accuracy in perceiving and producing lexical stress. Enhanced stress accuracy contributed to faster lexical access and greater listener comprehension. Replication research by Nagle and Hiver (2024) similarly confirmed that instruction targeting suprasegmental features, including stress, reliably improves English speech outcomes. Broader methodological syntheses, such as Kostromitina, Sudina, and Baghlaf, 2025, report consistent gains in intelligibility and comprehensibility across well-designed pronunciation studies.

Psycholinguistic findings also highlight why lexical stress is vital for listening. Sagarra et al. (2024) demonstrated that L2 stress processing is shaped by learners' first-language prosodic systems, proficiency levels, and exposure, indicating that stress perception is learnable and responsive to instruction. Ruan and Saito (2023) further showed that learners with weaker auditory-processing abilities benefit most from explicit phonetic focus during communicative tasks, suggesting that stress instruction may help empower learners with limited bottom-up processing skills.

Collectively, these studies provide strong empirical support for the claim that lexical-stress awareness contributes to more efficient and accurate listening comprehension. Enhanced sensitivity to stress cues aids in segmenting continuous speech, predicting upcoming lexical items, and reducing cognitive load during real-time processing. Moreover, learners can improve their stress awareness through various instructional approaches, including explicit prosody instruction, technology-enhanced practice, data-driven learning, and feedback-based production training.

Despite the growing evidence base, significant gaps remain. To the best of the researchers' knowledge, no study seems to have examined the role of lexical-stress training among Thai learners, whose tonal and syllable-timed first language poses unique challenges for acquiring English stress patterns. Also, no research has explored how lexical-stress awareness affects performance on high-stakes tests such as the TOEIC Listening test. Addressing these gaps is essential, as the findings are relevant not only to Thai learners but also to English learners in other contexts. The outcomes may further inform pedagogical practices for preparing students for a range of listening test formats.

3. Method

This study was conducted at a medium-sized public university in central Thailand. The Faculty of Engineering, specifically the Department of Mechanical Engineering, sought to support graduating students preparing for the job market. Because TOEIC scores are commonly required by employers, a supplementary TOEIC preparation course was offered to help students meet this requirement. Due to the students' demanding academic and laboratory schedules, the course was limited to two hours per week. To ensure that the limited instructional time addressed students' most urgent needs, the course singly focused on enhancing learners' listening skill. This study pursued two primary objectives: 1. to examine students' ability to correctly identify word-stress placement and its relationship with improved TOEIC listening performance, and 2. to explore students' attitudes toward pronunciation training and its perceived impact on TOEIC readiness.

3.1 Participants' Profile

A cohort of 73 students, who were fourth-year Mechanical Engineering students in the final semester of their studies, voluntarily enrolled in this supplementary course. They ranged in age from 19 to 22. Their English proficiency was assessed using the university's in-house placement test, corresponded to CEFR B1. None of the participants had previously received TOEIC-specific training.

Before joining the study, as stipulated in the curriculum, the students completed two foundational English courses in their first year that emphasized general English skills. These were followed by two additional required courses: Technical English in their third year and Communicative English in their final year of study. All courses were taught by experienced Thai instructors specializing in English language teaching. In total, students completed 12 compulsory English courses during their undergraduate program. No instruction from native-English-speaking teachers was offered at the faculty.

3.2 Instruments

To address the study objectives, a set of instruments was designed, devised, or selected. These include: 1. pronunciation pre/posttest, 2. instructional materials, 3. a mock TOEIC listening pre/posttest, and 4. a focus group interview question. Each instrument is described below.

3.2.1 Pronunciation Pre/Posttest

A wide range of print and digital TOEIC preparation resources was reviewed to inform the development of the pronunciation materials, or specifically, word stress instructional materials. The review revealed ten common TOEIC listening themes covered by the test: 1. occupations, 2. workplace scenarios, 3. travel and transportation, 4. shopping and customer service, 5. dining and restaurants, 6. health and medical situations, 7. entertainment and leisure, 8. housing and real estate, 9. training and education, and 10. banking and finance.

From the review of multiple TOEIC preparation glossaries of the above resources, ten multisyllabic vocabulary items pertaining to each theme were extracted, yielding a total of 100 words. Based on these 100 words, lexical stress pre/posttest materials were developed to measure students' ability to identify primary stress in words frequently found in TOEIC listening tasks (see Appendix A). To avoid possible cognitive overload on test-takers, five core multisyllabic words per theme were subsequently selected, yielding 50 words on the test. To select the words to be included in this test, for instance, borrowed words (e.g., *entrepreneur*) and words with multiple acceptable stress patterns (e.g., *television*, with the primary stress on the first or third syllables) were avoided. Additionally, only one word with several derivatives (e.g., *photograph* and *photography*) and with grammatical stress shifts (e.g., *record* as a noun or a verb), was included. Subsequently, a pronunciation expert and a renowned university faculty member reviewed the final list for stress accuracy and appropriateness. The same validated test was used for both the pretest and posttest to measure improvement. Appendix A also contains the selected 50 words highlighted in bold.

3.2.2 Instructional Materials

The instructional materials consist of two major components: pronunciation or word stress, and listening. The pronunciation instruction component was closely associated with the pre/posttest to ensure a seamless transition. That is, based on the list of 100 words across ten themes, a number of language tasks and activities, particularly focusing on lexical stress, were devised by the instructor, with assistance from AI tools.

A wide range of print and digital TOEIC preparation resources was reviewed to inform the development of the listening instructional materials. These resources commonly provided comprehensive coverage of listening question types, strategies for identifying distractors, and step-by-step exercises for improving test-taking skills. Many included timed practice tests, online audio files, and detailed answer explanations.

Adhering to the ten themes, listening tasks were developed in alignment with the TOEIC listening format (photographs, question-response, conversations, and short talks). AI tools, prompted by the course instructor, were used to help generate high-quality audio materials representing each part. Appendix B illustrates a shortened version of the integrated pronunciation and listening instructional materials for the “occupations” theme.

3.2.3 Mock TOEIC Listening Pre/Posttest

A standardized mock TOEIC listening test, selected from a highly reviewed commercial preparation book, was used to assess abilities in listening comprehension. The test replicated the official TOEIC format, timing, and difficulty.

3.2.4 Focus Group Interview Question

To explore students’ attitudes towards the instructional approach, a focus group interview was conducted in Thai to facilitate accurate expression. One guiding question was: What are students’ overall opinions of the course focusing on word-stress training?

Collectively, the listening instructional materials, pronunciation materials and corresponding pre/posttest, TOEIC mock pre/posttest, and focus group interview questions, enabled comprehensive data triangulation. Quantitative measures captured gains in pronunciation accuracy and listening performance, while qualitative data provided insights into learners’ perceptions and experiences.

3.3 Instructional Intervention

The intervention examined whether explicit pronunciation instruction, specifically word-stress placement, improved students’ TOEIC listening performance and how students perceived this training. The instructional intervention was delivered over 15 weeks, with weekly 100-minute sessions.

In weeks 1–2 (TOEIC orientation), students were introduced to the TOEIC test structure and listening task types. In week 3 (pretests), two pretests were administered: word-stress test and the mock TOEIC listening test. From weeks 4 to 13 (10 weeks total, integrated pronunciation and listening lessons), each weekly session focused on one thematic unit and its ten vocabulary items, pronunciation training preceded listening tasks, and AI tools supported additional practice. The details of the intervention are as follows.

3.3.1 Pronunciation Component Instruction (30-45 minutes)

Pronunciation components (see Appendix B) included a range of instructional activities designed to develop learners’ awareness and control of lexical stress. These activities began with stress discrimination drills and listening tasks focused on identifying stressed syllables, followed by repetition and imitation exercises using native-speaker recordings. Learners also engaged in minimal pair practice to distinguish noun-verb stress contrasts (e.g., *REcord* vs. *reCORD*, *CONtract* vs. *conTRACT*). In addition, explicit instruction on stress rules was provided where applicable, particularly in relation to word families and stress shifts (e.g., *PHOtograph* – *phoTOgrapher* – *photoGRAPHic*). Together, these components aimed to reinforce both perceptual and productive aspects of lexical stress.

The instruction went beyond the identification of stressed syllables, it also evaluated the knowledge of syntactic categories, related word forms, and usage in sentence level. Examples of sentences illustrating the word usage were provided to ensure that the students clearly understood the words and how they function in sentences. This comprehensive coverage ensured that students gained a deeper understanding of how vocabulary functions both phonetically and semantically.

Once students mastered the target words at the stress level, they practiced recognizing and producing those words in sentence contexts. In the initial weeks, approximately 45 minutes were required due to students’ unfamiliarity with word-stress concepts. However, as students became more accustomed to the material and instruction, the pronunciation component was gradually reduced to about 30 minutes per lesson. As shown in Appendix B, audio materials allowed students to practice identifying stressed syllables in occupation-related vocabulary.

Authentic recordings of native speakers and practical pronunciation tips were also incorporated. Once students demonstrated sufficient mastery of word-level stress, practice activities expanded to include sentence-level recognition and production of the target vocabulary. The audio materials for the “occupations” topic illustrate the type of exercises used to train students to identify the stressed syllables in the selected words. Multimedia resources were integrated to increase engagement and motivation.

3.3.2 Listening Component Instruction (about 45–70 minutes)

After the pronunciation instruction, the lesson shifted to TOEIC listening practice for the remaining 45 to 70 minutes. Students were to complete TOEIC-style listening tasks or activities aligned with the four parts of the TOEIC listening test (photographs, question-response,

conversations, and short talks). However, time constraints initially made it difficult to complete all four parts during a single class session. Yet, as the students became more efficient in completing the stress placement tasks, full TOEIC-format lessons became feasible. In summary, each weekly lesson centered on a single thematic topic and its ten associated vocabulary items, integrating pronunciation training with listening comprehension tasks. This dual focus task allowed students to build both phonological awareness and test-taking familiarity in a balanced manner.

To complement in-class instruction, students were strongly encouraged to use AI-based tools (e.g., *ChatGPT*, *Luvvoice*, and *Voicemaker*) for additional exploration or extended practice beyond the classroom, while boosting motivation and promoting independent personalized learning. These AI tools allowed the students to target weaker areas in listening. The combination of AI resources with classroom teaching provided variety, adaptability, and accessible practice opportunities for stress placement checking, pronunciation practice, vocabulary development and review, additional listening exposure, immediate feedback, and test preparation.

Therefore, from weeks 4 to 13, each 100-minute lesson centered on a single thematic topic and its associated ten vocabulary words and listening exercises. Instruction provided a balanced focus on form (pronunciation, stress, syntax, semantics) and meaning (listening comprehension tasks).

Week 14 was devoted to review key concepts from the intervention in the preceding weeks. Various game-based activities and class competitions were incorporated to reinforce learning in a relaxed, yet purposeful manner. Finally, week 15 was a posttesting week. Both the word-stress posttest and the mock TOEIC listening posttest were administered using the same procedures as the pretests.

3.4 Data Collection

Data were collected from three sources: 1. word stress pre/posttest scores for the 50 target words, 2. mock TOEIC listening pre/posttest scores, and 3. qualitative focus group interview responses. The first and second quantitative datasets were collected in weeks 3 and 15. The word stress test was delivered via Google Forms, requiring the students to select the syllable carrying primary stress for each word. The time allotted was 15 minutes. At this juncture, to prevent internet connectivity issues, the TOEIC listening test was administered as a hard-copy version, aligned with official TOEIC structure, taking approximately 45 minutes, while answers were submitted through Google Forms. These word stress and TOEIC listening tests were designed with the broader goal of not only improving students' listening abilities but also preparing them for real-world employment scenarios and boosting their confidence in undertaking TOEIC assessments.

One week after the course ended, an online focus group interview was conducted to gather qualitative data that would complement the quantitative data and capture students' perception of the instructional approach. To select the participants for this activity, attendance records were consulted; 68 of 73 students attended at least 12 of the 15 sessions (above 80 percent attendance rate). From this pool, nine students (S1–S9) were randomly selected to participate in the focus group interview. The interview lasted approximately 45 minutes to explore the students' perception of the pronunciation-focused listening instruction.

3.5 Data Analysis

The two quantitative datasets (word stress and TOEIC Listening scores) were analyzed using descriptive statistics and paired-samples t-tests to determine whether pre/posttest score differences were statistically significant. The qualitative dataset containing all focus group responses was transcribed and translated into English. Subsequently, the data were analyzed through thematic content analysis, in which student responses were coded and categorized to identify major themes, patterns, and representative comments or viewpoints relevant to the research questions.

4. Results

The results of the analysis are presented individually in the following sections.

4.1 Lexical Stress Pre/Posttest

The participants' pre/posttest scores of lexical stress were statistically analyzed and shown below.

Table 1. Lexical stress pre/posttest results (n=73)

Measure	Min	Max	Average	SD
Pretest	14	38	28.71	5.87
Posttest	20	50	41.27	7.28

As shown, students' mean score increased from 28.71 on the pretest to 41.27 on the posttest, with corresponding increases in both minimum and maximum scores. A paired-samples t-test was conducted to examine the effectiveness of the instructional intervention. Results showed that posttest scores ($M = 41.27$, $SD = 7.28$) were significantly higher than pretest scores ($M = 28.71$, $SD = 5.87$), $t(72) = 18.23$, $p < .001$, yielding a mean improvement of 12.56 points. These findings demonstrate a strong positive effect of the instruction on students' ability to identify stressed syllables in multisyllabic words.

4.2 Mock TOEIC Listening Test

The participants' pre/posttest scores of the mock TOEIC listening test were statistically analyzed and shown below.

Table 2. Mock TOEIC Listening test results (n=73)

Measure	Min	Max	Average	SD
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Pretest	24	83	47.97	14.72
Posttest	25	87	51.99	17.94

The mean score increased from 47.97 to 51.99, following the intervention, with an average gain of 4.01 points. A paired-samples t-test revealed that this improvement was statistically significant, $t(72) = 2.42$, $p = .018$, indicating that the instructional approach contributed meaningfully to enhanced TOEIC Listening performance.

4.3 Focus Group Interview

Nine students participated in a post-course focus group interview to explore perceptions of the stress-based instruction. Thematic analysis identified six major themes, each reflecting learners' views on the value and impact of the instructional approach. Individual themes are presented and accompanied by the corresponding students' excerpts translated into English and key phrases in bold.

Theme 1: Positive Impact of Stress Placement on General Listening Comprehension

Participants consistently reported that explicit stress instruction improved their ability to understand spoken English. They noted that recognizing stressed syllables helped them differentiate similar-sounding words, interpret meaning more efficiently, and overcome the common experience of "hearing but not understanding." Several students highlighted that pronunciation-based activities were more engaging and effective than traditional listening practice.

Supporting excerpts

- (1) The instruction **helps reduce problems** of not being able to catch what is being said or not understanding what is heard. (S3)
- (2) Stress syllables are **important clues in grasping meaning**. (S1)
- (3) Practicing pronunciation trains the ear to **understand English more accurately and quickly**. (S8)
- (4) I used to not know whether I heard 'forty' or 'fourteen.' Thinking about **stress helps me decide**. (S6)
- (5) **I like doing the stress-placement exercises** for each word that the teacher gives us in class. It's not boring because I get to practice pronunciation. (S4)
- (6) The lessons and **exercises are very helpful** because it makes me hear the word more clearly and understand the meaning the speaker wants to convey better, so **I understand the conversation more**. (S1)

Theme 2: Enhancement of TOEIC Listening Performance

Another strong theme that emerged throughout the collected data is that the participants perceived a clear and direct improvement in TOEIC Listening performance as a result of stress placement instruction. Some participants emphasized that, because the TOEIC audio is played only once, recognizing stressed syllables allowed them to identify important words quickly. The ability to distinguish between noun-verb pairs (e.g., *DEcrease* vs. *deCREASE*, *REcord* vs. *reCORD*) was viewed as critical for avoiding misunderstandings during the test. Many reported answering questions more quickly, with greater accuracy, and within time constraints, contributing to higher scores in mock tests and improved overall test readiness.

Supporting excerpts

- (7) I think that learning about stressed syllables is **important for TOEIC Listening**. The more accurately we understand the principles of placing strong and weak stress in words, the more correctly we can pronounce them. (S9)
- (8) Practicing stress helps separate words more quickly in **TOEIC Listening**. (S5)
- (9) In **TOEIC Listening**, audio plays only once. If we know where the stress is, we can understand immediately. (S2)
- (10) **TOEIC Listening** often uses words like *reCORD* and *REcord*. If you don't know which syllable is stressed, you may not know if it's a noun or verb and end up misunderstanding. (S1)
- (11) The instruction helps us perform much better in the **TOEIC Listening section**. (S8)

Theme 3: Support Vocabulary Acquisition Retention

The participants responded very positively to learning vocabulary through thematic topics and word families. They noted that organizing words by thematic category made memorization easier and facilitated immediate recognition during posttests or mock exams. Moreover, organizing vocabulary by topics commonly appearing on the TOEIC exam helped learners make meaningful associations and recall words more quickly, contributing to improved performance in the TOEIC Listening section. Many participants reported that knowing that the chosen topics closely matched common TOEIC categories also increased their motivation and engagement and facilitated long-term retention. That is, thematic grouping enhanced listening comprehension by helping them infer meaning in context.

Supporting excerpts

- (12) Sorting vocabulary **by topic** makes it **easier to remember and recognize** during the mock exam. (S7)
- (13) **Word families and topic grouping** help me **recall vocabulary** more quickly. (S2)
- (14) Knowing the **topics matched TOEIC categories motivated** me to learn. (S5)

Theme 4: Improved Auditory Awareness and Native-like Listening

Stress placement instruction was perceived as helping students develop heightened auditory sensitivity to more native-like listening skills. Many students explained that practicing accurate pronunciation not only improved their own speaking but also “trained the ear” to recognize authentic English stress patterns. This increased auditory sensitivity and familiarity enabled them to identify or catch words more quickly in real-life speech, natural speech, or TV series; words they previously could not identify due to significant differences between Thai-accented pronunciation and native stresses. Several participants highlighted that stress-focused exercises sharpened their perception of natural prosody or “the real sound” of English, reduced confusion or misunderstanding due to Thai-accented stress patterns, and helped them interpret meaning more accurately. In short, this theme reflects a shift toward more native-like auditory processing.

Supporting excerpts

- (15) Practicing correct pronunciation helps me hear English **the way native speakers speak**. (S4)
- (16) After learning correct syllable stress as produced by **native speakers**, when I heard these words in exercises or Mock Exams, I could recognize and understand them in the sentences. (S3)
- (17) When I think about it, once we practice pronouncing words with correct stress, our brain becomes familiar with the rhythm or tone of how **native speakers** actually say the word. As a result, when we listen, we can catch that word more quickly, even when it’s spoken fast or with reduced syllables. (S6)

Theme 5: Increased Confidence and Exam Preparedness

Across the dataset, the learners expressed significantly increased confidence in preparing for the TOEIC Listening exam. The combination of stress placement instruction, thematic vocabulary learning, and exposure to TOEIC-style questions helped them feel more prepared and more aware of what to expect. They also appreciated learning visually how different TOEIC parts are structured and laid out, how to manage time, and how to identify which content areas they needed to strengthen. For instance, the participants can assess where to start each part, estimate time per part, and identify topics to study. Their familiarity with exam structure improves planning and test readiness. The students reported lower anxiety and greater clarity regarding which skills required improvement. Many stated that this instruction made them realize the value of strategic awareness and thus feel more capable of handling exam demands and contributed to stronger overall readiness for listening components. In short, the combined approach of stress instruction, thematic vocabulary learning, and TOEIC-format practice heightened motivation and increased learners’ confidence and readiness for the actual exam. Many students felt better equipped to manage time, anticipate question types, and identify which skills required improvement.

Supporting excerpts

- (18) The instruction increases my **confidence** in taking the TOEIC exam. (S7)
- (19) This class helps me see the **structure of the exam** and how to **handle** each part. (S6)
- (20) Practicing this way builds **confidence** for taking the actual exam. (S1)
- (21) This project helped improve my listening skills a lot. For example, I learned that I need to be careful with words of similar pronunciations but different meanings. This made me **more conscious** about choosing the right meaning based on the context when practicing the Listening part. (S4)

Theme 6: Development of Listening and Test-Taking Strategies

A final overarching theme reflects the development of strategic listening and test-taking strategies and behaviors. The learners described gaining practical strategies for dealing with TOEIC listening questions such as focusing on content words, using stress patterns to infer meaning, and distinguishing grammatical functions through stress. Additionally, the participants gain strategies for practicing listening test questions to find correct answers within the allotted time, including time management, strategic starting points, and topic prioritization. Their experience with realistic test scenarios practicing ensures better speed, accuracy, and answer selection under time pressure. Some students also reported staying engaged in self-directed learning by using AI tools to reinforce their understanding of stress rules, indicating the emergence of self-directed strategy extended practice beyond class.

At this juncture, the participants felt that stress placement instruction equipped them with practical and transferable strategies for dealing with homophones, minimal pairs, and morphological variations commonly encountered in TOEIC Listening tasks that improved efficiency and accuracy in TOEIC Listening tasks. Evidently, development of listening and test-taking strategic preparation leads to more efficient and accurate performance.

Supporting excerpts

- (22) Stress patterns **help me find correct answers faster**. (S4)
- (23) I gained **strategies for answering listening questions** within the allotted time. (S7)
- (24) Understanding exam structure helps me **plan and manage time** effectively. (S8)

Taken all together, the results show that stress placement instruction had a broad and substantial positive impact on learners’ listening abilities. Quantitatively, participants demonstrated significant improvement in both stress identification and TOEIC Listening performance. Qualitatively, students reported enhanced comprehension, stronger vocabulary retention, increased auditory awareness,

greater confidence, and improved strategic competence. Together, these findings indicate that lexical stress instruction is an effective and well-received component of TOEIC Listening preparation.

5. Discussion

The present study examined the effects of explicit lexical stress instruction on the listening comprehension of Thai engineering undergraduates preparing for the TOEIC. The integration of three datasets—lexical stress test scores, TOEIC Listening scores, and qualitative learner perceptions—provides strong converging evidence that explicit suprasegmental instruction can significantly enhance listening performance. These findings align with a growing body of research highlighting the importance of lexical stress awareness for segmentation, lexical access, and real-time speech processing (Field, 2005; Hahn, 2004; Sagarra et al., 2024).

One of the findings showed that improvement in lexical stress positively impacted general listening comprehension. Learners demonstrated substantial gains in lexical stress identification, with posttest scores exceeding pretest results by more than 12 points. This improvement indicates that explicit, focused instruction can rapidly enhance learners' sensitivity to stressed syllables—an outcome consistent with research showing that suprasegmental cues reduce cognitive load during listening (Field, 2005; Vandergrift & Goh, 2012).

Qualitative reflections further demonstrated how stress awareness transformed students' listening experience from "hearing but not understanding" to effective meaning extraction. This echoes findings by Sardegna and Jarosz (2023), who argue that lexical stress training strengthens both perception and production, thereby improving bottom-up decoding. Recent technology-enhanced pronunciation studies (Stoughton & Kang, 2024; Costille, 2024) similarly show that systematic practice with stress cues facilitates more accurate recognition of polysyllabic words in connected speech.

These gains are particularly noteworthy in the Thai context. Thai, a tonal and syllable-timed language without lexical stress, provides learners with no L1-equivalent cue system; thus, Thai speakers often misplace English stress, resulting in mismatches between expected and actual acoustic signals (Kanoksilapatham, 2025; Kanoksilapatham & Takrudkaew, 2025). The present results demonstrate that such L1-induced challenges can be effectively mitigated through explicit instruction.

The improvement in lexical stress also enhanced TOEIC Listening performance. Although the mean gain in TOEIC Listening scores (approximately four points) was smaller than that of the lexical stress test, it was statistically significant and pedagogically meaningful. TOEIC Listening is highly demanding: it is fast, delivered in a single play, and contains reduced forms, accent variation, and lexical distractors. Prior research shows that identifying stressed syllables enables listeners to locate content words more efficiently and segment spoken input more accurately (Ma et al., 2024; Ruan & Saito, 2023). This skill is particularly critical in single-play listening contexts (Field, 2015; Holzknicht & Harding, 2024).

Learners also reported that stress awareness helped them differentiate noun–verb stress pairs (e.g., *REcord* vs. *reCORD*), a long-recognized difficulty among Thai learners (Rutamornchai et al. (2024)). This enhanced sensitivity improved real-time interpretation of key lexical items, contributing directly to their improved TOEIC performance.

Qualitative data reinforced the quantitative findings. All participants indicated that stress-based instruction improved comprehension, confidence, test readiness, and vocabulary retention. Their comments reflected increased ability to recognize words quickly, interpret meaning in fast natural speech, and apply more strategic listening behaviors—skills highlighted in previous work on effective L2 listening (Goh, 2000; Vandergrift & Tafaghodtari, 2010).

Students also emphasized the usefulness of thematic vocabulary and word-family groupings, echoing research showing that semantic and morphological clustering enhances rapid retrieval during listening (Li & Zhang, 2019). This integrated approach appears to support both phonological and semantic processing.

A noteworthy finding was students' perception that accurate pronunciation practice "trained the ear." Exposure to native-like stress patterns helped them internalize rhythm and prosody, supporting Costille's (2024) claim that visualizing and practicing stress improves both perception and production. Some learners noted improved recognition of words in authentic media (e.g., TV shows), suggesting emerging native-like auditory processing and sensitivity, as well as reduced L1 interference.

Learners reported using stress cues to predict grammatical category, distinguish homophones, monitor comprehension, infer meaning from partial information, and manage attention during TOEIC tasks. These behaviors reflect metacognitive engagement (Zimmerman, 2000) and align with established models of strategic L2 listening (Vandergrift & Tafaghodtari, 2010). Their use of AI tools (e.g., ChatGPT) further supported autonomous learning—consistent with evidence that AI-mediated pronunciation training enhances self-regulation and feedback-driven improvement (Kanoksilapatham, 2023; Lai, 2017; Li, 2020).

Taken together, improvements in both test scores and learner perceptions provide robust triangulated evidence that explicit lexical stress instruction enhances TOEIC performance and general listening comprehension. These outcomes align with research demonstrating that suprasegmental cues (lexical stress) reduce cognitive load, support segmentation, and facilitate lexical access.

5.1 Pedagogical Implications

This study offers several pedagogical implications for English instructors, curriculum designers, and TOEIC preparation programs. First, the findings highlight the importance of integrating suprasegmental features into listening instruction. Lexical stress should be treated as a core listening strategy rather than a peripheral pronunciation topic. The substantial gains in both stress perception and TOEIC listening

performance suggest that stress instruction enhances decoding of fast, reduced, or accented speech and supports native-like auditory discrimination. Integrating suprasegmentals into listening instruction is essential.

Second, teaching lexical stress alongside high-frequency TOEIC vocabulary is particularly beneficial. Thematic vocabulary and word-family groupings improve retention and facilitate immediate recognition during high-stakes listening tasks. Pronunciation training that precedes listening activities also promotes transfer of stress patterns to authentic tasks. Incorporating minimal pairs and noun–verb stress contrasts can further reduce lexical ambiguity. Teaching lexical stress alongside high-frequency vocabulary thus boosts retention and recognition.

Third, TOEIC Listening requires a broad array of linguistic and metacognitive skills. Learners need training in listening for gist and keywords, predicting content, processing rapid speech (Field, 2015; Goh, 2000), handling accent variation (Derwing & Munro, 2005), expanding lexical repertoire through suprasegmental cues (Li & Zhang, 2019; Nation, 2024), and employing metacognitive monitoring strategies (Vandergrift & Tafaghodtari, 2010). Mock TOEIC tests should accompany instruction to help manage anxiety and build familiarity with real-time conditions. In short, TOEIC Listening requires combined training in bottom-up decoding, strategy use, and metacognitive monitoring.

Fourth, the role of technology merits continued attention. Structured, stress-focused practice integrated with AI-supported tools can extend learning beyond class time and provide individualized feedback—particularly valuable in contexts with limited access to native-speaker input. That is, AI tools offer individualized practice and extend learning beyond the classroom.

Finally, explicit attention to L1 transfer is essential. Training learners to anticipate English stress patterns can strengthen both bottom-up decoding and top-down prediction. Collectively, these implications support calls for integrated pronunciation–listening instruction in L2 education (Kostromitina et al., 2025). Addressing L1–L2 phonological differences improves listening efficiency.

5.2 Limitations of the Study

Despite the promising outcomes, several limitations warrant consideration. First, the absence of a control group restricts the extent to which improvements can be attributed solely to the stress-focused intervention. It is possible that gains in listening performance were influenced by increased exposure to TOEIC formats or general listening practice over time.

A second limitation concerns the use of mock TOEIC materials rather than official ETS tests. Although the selected materials were high quality, they may not fully reflect official test difficulty. Additionally, the intervention duration, while productive and sufficient to yield measurable gains, may have been insufficient to capture longer-term developments in listening ability, which typically evolves gradually.

The sample characteristics also impose constraints on generalizability. All participants were Thai engineering students, representing a relatively homogeneous group in terms of academic background, proficiency level, and L1. Learners of different backgrounds or proficiency levels may respond differently to suprasegmental instruction. Thus, caution should therefore be exercised when applying these findings to broader educational contexts.

Finally, qualitative data were based on self-reported perceptions, which may be shaped by social desirability or rapport with the instructor. Although triangulation with quantitative data strengthens confidence in the findings, self-report bias cannot be entirely ruled out.

5.3 Suggestions for Future Research

These limitations also point to valuable directions for future research. Subsequent studies could incorporate control or comparison groups to better isolate the instructional effects of lexical stress training. Longitudinal studies would be beneficial for examining long-term retention effects of stress placement training and their sustained impact on listening performance.

Since learners differ widely in cognitive, affective, and experiential factors, future research could also explore the role of individual differences such as auditory processing ability, motivation, or prior exposure to English media. Another promising direction involves expanding stress instruction beyond the lexical level to include sentence-level and discourse-level prosody, to determine whether higher-level suprasegmental features produce comparable or even greater gains in listening comprehension.

Additionally, studies involving learners from varied academic majors, age groups, and proficiency levels would enhance generalizability. The investigation of stress placement instruction in other L1 contexts to determine cross-linguistic effects could be quite elucidating. Given the positive role of technology observed in this study, future research could investigate AI-assisted pronunciation tools as stand-alone or hybrid interventions to compare their effectiveness with traditional instruction.

Finally, researchers may wish to examine how lexical stress interacts with other listening subskills such as recognizing reduced forms, parsing fast speech, or processing connected speech phenomena. Understanding how suprasegmental training fits within a broader constellation of listening competencies will deepen our understanding of suprasegmental instruction supports high-stakes listening performance.

6. Conclusion

This study provides converging quantitative and qualitative evidence that explicit lexical stress instruction significantly enhances listening comprehension, TOEIC performance, vocabulary retention, perceptual accuracy, strategic behaviors, and learner confidence. These results align with extensive research underscoring the importance of suprasegmental awareness in L2 listening comprehension (Derwing & Munro, 2005; Field, 2005; Hahn, 2004; Yenkimaleki et al., 2023). Building on these findings, important pedagogical implications

emerge. Listening difficulties are multifactorial; thus, stress-focused instruction should be viewed not as a narrow pronunciation activity but as a comprehensive support mechanism for listening. Educators and trainers should provide targeted interventions that integrate vocabulary development, stress-focused practice, and metacognitive strategy training, while offering extensive exposure to spoken English and test-like conditions to reduce anxiety and strengthen TOEIC readiness. Taken together, the integration of lexical stress pronunciation instruction with listening preparation contributes to more efficient, accurate, and confident performance in high-stakes listening assessments.

Declaration of AI use

During the preparation of this article, the authors used ChatGPT 5.0 to assist with improving the readability and language of the article. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the article.

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Author contributions

Prof. Dr. Budsaba Kanoksilapatham was responsible for study design. Dr. Tangpak Takrudkaew was responsible for teaching and data collection. Prof. Dr. Budsaba Kanoksilapatham drafted and revised the manuscript. Both authors read and approved the final manuscript.

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Data sharing statement

No additional data are available.

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Appendix A.

The 100 core word list pertaining to the ten themes and the 50 words tested in bold.

No.	Theme	10 Core Word List and Selected Words
1	Occupations	architect, consultant , employer , engineer, executive, manager , novelist, receptionist, supervisor , technician
2	Workplace scenarios	agenda , campaign, colleague , conference , document, presentation , promotion, proposal , stationery, submission
3	Travel and transportation	announcement, accommodation, departure , destination, itinerary, luggage , passenger , reservation , schedule , transfer
4	Shopping & customer service	catalog , complaint, customer , delivery , discount, exchange, inventory, warranty , receipt , satisfaction
5	Dining & restaurants	appetizer , atmosphere , beverage , cuisine, dessert , flavor, ingredient , menu, specialty, vegetarian
6	Health & medical situations	advice , allergy, appointment , diagnosis, emergency, insurance , prescription , pharmacy, therapy, treatment
7	Entertainment & leisure	admission , auditorium, cinema, concession, exhibition , festival , intermission, performance , spectator, vacation
8	Housing & real estate	apartment , advertisement , inspection, maintenance , property , residence, renovation, tenant , utilities, rental
9	Training & education	approach, assignment , certificate , curriculum, diploma, enrollment , lecture , qualification, tutorial, seminar
10	Banking & finance	account , balance , currency, deposit , interest , investment, mortgage, statement, transaction , withdrawal

Appendix B.

The integrated pronunciation and listening instructional materials for the “occupations” theme.

Theme 1: Occupations

Task 1. For each word below, mark an ‘X’ in the box that indicates the stressed syllable. (The answers are provided.)

No.	Word	Number of syllables	Stressed syllable			
			1	2	3	4
Sample	photographer	4		×		
1	architect	3	×			
2	consultant	3		×		
3	employer	3		×		
4	engineer	3			×	
5	executive	4		×		
6	manager	3	×			
7	novelist	3	×			
8	receptionist	4		×		
9	supervisor	4	×			
10	technician	3		×		



Now check the answer by carefully listening to each word. As you listen, repeat each word aloud.



Task 2: For each part, you will hear a woman describing people in different occupations. As you listen, fill in the missing word in the space to complete the statements. (The answers are provided in italics.)

1. A(n) _____ is typing on a computer at her desk. (*employee*)
2. A(n) _____ is holding a clipboard while watching the workers. (*supervisor*)
3. The _____ is giving a presentation in a meeting room. (*manager*)
4. A(n) _____ is looking at blueprints on a large table. (*architect*)
5. A(n) _____ is writing in a notebook while sitting by a window. (*novelist*)
6. A(n) _____ is answering the phone at the front desk. (*receptionist*)
7. A(n) _____ is repairing a machine in a factory. (*technician*)
8. A(n) _____ is sitting at a desk with a laptop and a cup of coffee. (*executive*)
9. A(n) _____ is pointing at a chart during a business meeting. (*consultant*)
10. A(n) _____ is wearing a hard hat and inspecting a construction site. (*engineer*)



Task 3: Look at each photo. You will hear four statements about the photo. You will hear each statement only ONCE, and the statements are not on your worksheet. Choose the best statement that best describes the photo and mark 'X' on A, B, C, or D.

Part 1: Photographs

1.



- A) She is pointing at a laptop.
 B) She is holding a mobile phone.
 C) There are some plants on the desk.
 D) She is writing on a piece of paper.

Task 4: Listen to the questions or statements and the three possible responses. You will hear them only once, and they are not on your worksheet. Choose the best response and mark 'X' on A, B, C, or D.

Part 2: Question-Response

1. Who is responsible for training the new employee?
 A) In the conference room.
 B) The supervisor is.
 C) Yes, it's on the schedule.
2. When will the supervisor arrive at the site?
 A) At 3:00 PM.
 B. He sent the report.
 C. No, she didn't leave.



Task 5: Listen to a conversation between two speakers. Then choose the correct answers to the three questions about the conversation and mark 'X' on the letter A, B, C or D.

Part 3: Conversation

Script:

W: Hi, Mark. The technician said the printer should be working now.

M: Great. I have to print the draft of a novel for our new novelist customer.

W: Oh, right. Isn't she meeting with our architect at 2 p.m. to discuss the book's cover design.

M: Yes, so I need to get these pages ready before she arrives.

1. What was the problem?
 - A) A computer virus
 - B) A broken printer
 - C) A timing problem
 - D) A missing draft

Task 6: Listen to a conversation between two speakers. Then choose the correct answers to the three questions about the conversation and mark 'X' on the letter A, B, C or D.

Part 4: Short Talk

Script:

M: Attention, all employees. The manager would like to remind everyone that the company's annual training workshop begins at 9 a.m. tomorrow in Conference Room A. A special executive guest speaker will discuss effective leadership and communication. Please arrive early.

1. Who is the announcement for?
 - A) Customers
 - B) Technicians
 - C) Consultants
 - D) Employees