Effects of the Shadowing Technique on English Listening Comprehension for Chinese EFL Senior High School Students

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ABSTRACT

The shadowing technique has gained attention in language education for improving listening comprehension and linguistic skills (Hamada, 2024; Lestari, 2022). This study examined the impact of the shadowing technique on enhancing listening comprehension among 30 Chinese EFL senior high school students through two months of targeted instruction. Data were collected through a listening comprehension test, a questionnaire, and student logs. Analyzed test scores using paired-sample t-Tests indicated significant improvements in listening comprehension. Questionnaire results, evaluated through Mean and Standard Deviation, highlighted progress in linguistic skills such as speaking, pronunciation, vocabulary acquisition, and intonation. Log data were examined using qualitative content analysis, revealing cognitive benefits, including enhanced working memory, improved listening focus, reduced anxiety, and increased motivation. Despite these positive outcomes, challenges were encountered, including

unfamiliar vocabulary, complex sentence structures, fast speech delivery, and tedium from repetitive exercises. These findings underscore the importance of scaffolding linguistic knowledge, segmenting tasks into manageable stages, and providing structured support to optimize the application of the shadowing technique in language learning.

Keywords: shadowing technique, listening comprehension

Introduction

Listening comprehension holds a vital role in ESL and EFL learning, as it is essential for the development of other language skills in the classroom (Shahani & Tahriri, 2015). In second language contexts, listening constitutes 40-50% of daily communication in second language contexts, speaking makes 25-30%, reading 11-16%, and writing 9% (Vandergrift & Goh, 2012). This highlights the need for effective listening comprehension instruction and learning methodology to build communicative competence in EFL learners. In China, listening is a key part of senior high school English and the college entrance exam. The General Senior High School English Curriculum Standards (2020 Revision) focus on developing students' ability to gather information and solve real-life problems in English. Exploring effective listening methods is vital for improving language proficiency and students' core competencies (Huang & Chen, 2019).

EFL senior high school teaching and learning of listening comprehension face significant obstacles. In Vietnam, exam-driven curricula prioritize tests over communication skills, partly due to large class sizes and grammar-focused assessments (Tran & Duong, 2020). Thailand struggles with unqualified teachers, heavy workloads, and exam-oriented systems that neglect practical skills (Noom-Ura, 2013). Similarly, in China, traditional methods, outdated materials, regional dialect interference, and poor facilities hinder comprehension (Zou, 2023). What's more, the restricted capacity of short-term memory influences listening comprehension, as it is essential for processing spoken input by segmenting utterances. Without establishing links to long-term memory, newly acquired information may be forgotten (Call, 1985; Goh, 2000). For L2 learners, rapid speech delivery, complex grammar, unfamiliar vocabulary, memory limitations, varying accents, and personal factors complicate the development of listening skills (Amoah & Yeboah, 2021; Goh, 2000; Nushi & Orouji, 2020). Cultural and linguistic barriers further increase these challenges (Gilakjani & Sabouri, 2016).

Research on Chinese listening comprehension mainly focuses on well-resourced regions (Li, 2024; Zou, 2023), neglecting rural areas like

Yunnan. In this region, characterized by its ethnic diversity, many people speak three or four languages, which can result in negative language transfer. Additionally, as Yunnan is located inland, students there have fewer opportunities to use English in daily life compared to coastal cities (Zhao, 2017). Consequently, in Yunnan, "Deaf-mute English" is common, a phenomenon in which students struggle to listen and speak accurately due to a lack of focus on pronunciation, hindering their ability to recognize standard English pronunciation (Liu, 2020). The region's diverse dialects cause frequent confusion of sounds like /æ/ and /e/, /n/ and /l/, /s/ and /θ/, and /z/ and /ð/ (Wang, 2017), affecting comprehension. Teachers often use traditional methods, such as "translation" and "play-listen-answer", prioritizing grammar and vocabulary over listening, which accounts for minimal assessment in exams (Liu, 2020). Additionally, low motivation due to limited job opportunities, many of which require English competence further complicates the issue. These challenges highlight the need for more effective teaching and learning methods or techniques for developing listening comprehension.

When it comes to methods or techniques of improving English listening comprehension, shadowing has become one of the most intuitive and effective. Originally used in interpreter training, it is now widely applied in EFL settings (Hamada, 2016a). In shadowing, learners track and repeat speech as accurately as possible, focusing on both the words and context they hear. This task involves auditory input, speech output, repetition, divided attention, and engages in the working-memory system (Takeuchi et al., 2021).

By applying shadowing, students can gain benefits in several ways. Firstly, research has shown that the shadowing technique is highly effective in enhancing various language skills, including listening comprehension, speaking, pronunciation, intonation, and vocabulary acquisition (e.g., Astuti, 2020; Goto, 2024; Hamada, 2018; Hamada, 2024; Utami & Morganna, 2022, Yavari & Shafiee, 2019). Moreover, shadowing stimulates the phonological loop in working memory. Repetition and imitation, which is central to this method, strongly enhance memory and cognitive functions. Shadowing activates bottom-up processing in listening comprehension (Hamada, 2016b). As a result, it is considered an ideal solution for addressing both linguistic and psychological challenges faced by listeners (Thao & Van Tuong, 2021).

There are many previous studies on using shadowing technique in listening comprehension. Zahran and Owusu (2020) conducted a quasi-experimental study with ninth-grade EFL students using a listening checklist, test, and motivation scale. They found shadowing improved listening skills and motivation, with a suggestion for further research on motivation. Thao and Van Tuong (2021) implemented pre- and post-tests, an interview, and observation with 28 English majors, finding that shadowing enhanced

listening comprehension and students also developed a positive attitude toward it. In China, Zou (2023) employed tests and evaluation forms with high school students and teachers in Sichuan province, showing that shadowing improved listening skills and classroom effectiveness. Li (2024) conducted an experiment using tests and an interview with junior high school students in Jining and found that shadowing boosted listening comprehension, pronunciation, and motivation.

From the studies above, despite these contributions, several gaps remain in the literature. Firstly, most studies have focused on students of different levels and well-resourced regions of China, such as Sichuan and Jining, with limited research conducted at senior high schools in rural areas like Yunnan, where educational contexts may differ. Secondly, many studies relied on quantitative methods, such as pretests and post-tests and questionnaires, which provide valuable data but offer limited insights into students' learning experiences. Qualitative methods, such as interviews, may not fully capture the depth of students' opinions or feelings, especially in cultures where shyness inhibits open communication, as is often the case in China (Liu & Jackson, 2008). However, student logs, which offer more reflective and in-depth insights, have been underutilized. These logs allow students to express their personal thoughts, feelings, and challenges in response to learning activities, capturing nuanced perceptions. Compared to interviews, logs offer the advantage of anonymity, allowing students to reflect freely without the pressure of completing a formal task. This encourages more honest and detailed responses (Stephens & Winterbottom, 2010). By reflecting on their experiences, students provide valuable insights into how they engage with the material, their emotional reactions, and their evolving understanding. This self-reflection offers a deeper view of their learning process, one that traditional assessments or interviews may not fully capture.

Therefore, this study aimed to address this gap by analyzing student logs to explore the link between shadowing technique and listening comprehension among senior high school students in Yunnan Province. Despite regular listening practice in class, Grade 10 students from a senior high school in Yunnan province, China, continue to struggle with understanding spoken English. The listening materials at this level are increasingly complex, requiring students to process information efficiently and infer meaning from context. This experiment was therefore conducted at a private high school in Xuanwei County, Yunnan, with Grade 10 students as the research subjects. Since the freshmen had just entered high school, had not yet encountered new teaching content, and had not yet developed new learning patterns, they were more receptive to shadowing training techniques. Additionally, this setup facilitated the author's observation and assessment of the teaching effects. Therefore, investigating the impact of shadowing

techniques on their listening comprehension and exploring their perceptions of this method is valuable. The study focused on two key research questions:

1) To what extent does the shadowing technique enhance the listening comprehension of Chinese EFL high school students in a rural Yunnan context?

2) What are students' perceptions of the shadowing technique in listening comprehension?

This study expanded shadowing research by examining its impact on listening comprehension and student perceptions. Unlike prior studies relying on tests or interviews, it used student logs for deeper insights. Focusing on high school students in Yunnan, it broadened the geographic scope of existing research. By combining quantitative and qualitative methods, it bridged the gap between performance outcomes and learning experiences. The findings offer valuable guidance for educators and policymakers on implementing shadowing techniques in EFL classrooms.

Literature Review

Listening Comprehension

Listening comprehension is the process of understanding meaning by identifying and analyzing spoken dialogue (Rosyada et al., 2024). Mastery of this skill enables students to perform tasks such as identifying main ideas, key details, specific information, as well as interpreting the speaker's attitudes and opinions (Each & Suppasetseree, 2021). It is a complex process relying on both linguistic and background knowledge—such as vocabulary, sounds, and grammar— to accurately interpret spoken language (Tran & Duong, 2020). Listening comprehension involves receiving, processing, and constructing meaning from auditory input, and is foundational to the development of other language skills, including speaking, writing, and reading (Rost, 2002).

Listeners process information through bottom-up and top-down approaches. Bottom-up processing derives meaning from individual language elements, such as vocabulary, grammar, and pronunciation aspects to build overall comprehension. In contrast, top-down processing depends on existing knowledge such as background knowledge to facilitate overall comprehension rather than focusing on discrete segments. These complementary processes often occur together, and teachers should integrate both into their listening lessons (Utomo & Sulistyowati, 2022). Based on this, the interactive model is a synthesis of the bottom-up and top-down models (Flower & Miller, 2005), though originally designed for reading, it is equally applicable to listening. The model posits that language processing occurs simultaneously at multiple levels, with listeners concurrently utilizing

phonological, syntactic, semantic, and pragmatic knowledge to decode information. One key advantage of the interactive model is its flexibility, accommodating different learning styles and individual or group needs. Since it combines elements from both bottom-up and top-down models, listeners can choose the processing approach that best suits their needs (Trang, 2020).

These theoretical frameworks—bottom-up, top-down, and interactive models—underlie the challenges learners face in developing listening comprehension. Learners often struggle to effectively balance these processes. Over-reliance on bottom-up processing may overwhelm them with details, while excessive use of top-down processing can lead them to miss key information. The interactive model helps address these issues by allowing learners to use both approaches simultaneously, integrating specific language elements with broader contextual cues. This integration of processing approaches directly relates to the typical challenges learners encounter in real-world listening tasks.

Problems in Developing English Listening Comprehension

Linguistic knowledge is critical to listening comprehension, with lexical capacity and word association strongly linked to understanding spoken texts (Zhang & Zhang, 2022). However, many Chinese students learn vocabulary by mere repetition, lacking access to opportunities for contextual learning, which reduces engagement and effectiveness (Dai, 2023). Secondly, pronunciation and phonological features, such as stress, intonation, and speech rate, also significantly impact comprehension. For instance, Chinese learners often confuse sounds like /n/ and /l/ due to native language interference and frequently add the short vowel /ə/ at the end of words. They also struggle with consonants like /s/ and /θ/ or /z/ and /ð/, and their poor command of intonation, stress, and rhythm leads to misplaced emphasis in spoken sentences (Wang, 2017). Lastly, grammatical knowledge supports sentence processing but is often overshadowed by a focus on content words, limiting its role in listening comprehension.

Cognitive factors can also affect L2 listening comprehension (Trang, 2020). Recent cognitive studies emphasize the importance of both top-down and bottom-up processing in listening comprehension (Oh, 2020). In China, most students and teachers are not familiar with this theory and often rely on the "play-listen-answer" method in listening instruction, which does not incorporate any of the aforementioned cognitive processes involved in listening. Additionally, Chinese students often face difficulties with listening comprehension due to a low working memory capacity (Kang, 2019). Working memory is essential for language comprehension, serving dual functions: storing information for later retrieval and processing it in real time

(Namaziandost et al., 2018), so a working memory deficit can negatively impact listening comprehension.

Affective factors such as anxiety, stress, and lack of confidence are key barriers to L2 listening comprehension, as they disrupt focus, time management, and self-belief, ultimately impairing learners' ability to process and understand oral texts (Nushi & Orouji, 2020). Unfortunately, Chinese students often experience high anxiety and a lack of confidence in their learning. This issue can stem from various causes, including language learning environments, testing conditions, and limited opportunities to practice English listening. Furthermore, motivation plays a crucial role in listening comprehension (Ketphommavong & Wasuntarasophit, 2024), and Chinese students' low motivation further hinders their listening comprehension.

To address above issues, many Chinese teachers have used dictation to improve listening comprehension. Dictation, which involves listening to a text and transcribing it, has been shown to reinforce listening accuracy and grammar practice (Saragih, 2022). However, other research indicates that dictation is more suitable for high-proficiency students (Syakur, 2020). The participants in this study, attending a private school after failing the entrance exam, struggled with standardized textbooks designed for all senior students, making dictation ineffective. In contrast, shadowing, which requires simultaneous listening and repeating, enhanced both listening and speaking skills. By focusing on imitation rather than complex comprehension, this method was more accessible for lower-proficiency learners (Hamada, 2019).

Shadowing Technique

The shadowing technique is a language learning approach where learners listen to a target language text and repeat it aloud simultaneously with a native speaker (Hamada, 2016a). Shadowing is also viewed as a teaching method where the goal is to repeat what is heard as accurately as possible (Li, 2024). Thirdly, it is defined as "a paced, auditory tracking task involving the immediate vocalization of auditorily presented stimuli" (Lambert, 1992, p. 266). Shadowing is an online, highly cognitive activity where learners listen and speak simultaneously without pauses, focusing mainly on phonology. In contrast, repetition is an offline task that includes silent pauses, allowing learners to process both phonology and meaning. While shadowing appears passive, it requires active engagement and has a higher cognitive load, making it more demanding than repetition (Hamada, 2014).

The mechanism of shadowing is commonly explained as being linked to the working memory system proposed by Baddeley (2012). According to Baddeley (2012), the shadowing technique enhances speech understanding by strengthening the phonological loop, a component of individual working

memory, leading to improved listening skills. This means that shadowing supports students' cognitive resources and working memory capacity (Kadota, 2007), allowing them to handle various aspects of incoming sounds. Scholars support the shadowing technique for various reasons. First, it is widely recognized as an effective method for enhancing language acquisition, particularly in improving listening comprehension. This technique combines top-down and bottom-up cognitive processes, focusing on the real-time repetition of auditory input to improve learners' listening skills (Hamada, 2016b). Additionally, the shadowing technique aligns closely with key theories in second language acquisition (SLA), such as the "Noticing Hypothesis" (Schmidt, 1990), which plays a critical role in improving listening comprehension. Schmidt's Noticing Hypothesis suggests that learners must consciously notice language features to acquire them. Shadowing compels learners to focus on and repeat the language they hear, prompting them to pay attention to pronunciation, intonation, and other language features (Zou, 2023). This heightened awareness contributes to better language understanding and retention. Thus, shadowing bridges these cognitive theories by engaging learners' working memory and increasing their awareness of language patterns, both of which significantly enhance listening comprehension in second language learners.

Various types of shadowing have been proposed in the literature. For instance, Norman (1969) introduced phrase and phonemic shadowing, while Murphey (2001) classified shadowing into three types: complete, selective, and interactive. Meanwhile, Kadota (2007) proposed six types of shadowing, including shadowing, slash shadowing, silent shadowing, part shadowing, part shadowing with comments, and part shadowing with questions. Among these, the final type is the most complex, as it requires learners to formulate comments and questions addressing the target text, thereby increasing cognitive demands (Lestari, 2022).

For learners with lower proficiency levels in rural areas, such as students in Yunnan province, class sizes are typically very large, with more than 50 students in each class. As a result, teachers may struggle to effectively conduct listening classes, as they cannot focus on teaching students individually or managing the class well. Therefore, simpler shadowing methods are more practical in such settings. Kadota and Tamai (2004) proposed a step-by-step approach to shadowing, which includes a four-stage progressive process: (1) *Mumbling*, focusing on sounds without stressing pronunciation; (2) *Synchronized Reading*, shadowing with a script to replicate intonation; (3) *Prosody Shadowing*, emphasizing rhythm and intonation without a script; and (4) *Content Shadowing*, focusing on the comprehension of meaning. Building on this, Hamada (2012) introduced additional steps tailored to support learners: (1) *Parallel Reading*, shadowing with script support; (2)

Checking Understanding, reviewing bilingual scripts to ensure comprehension; (3) *Repetitive Shadowing*, repeating utterances for reinforcement; and (4) *Checking Details*, clarifying unclear sounds or meanings.

These combined frameworks form the theoretical foundation for the current study, which has adopted these methods as applied to a classroom setting. The detailed proposal for implementing shadowing in listening activities is summarized as follows:

Table 1

A Proposal for Shadowing in a Classroom Setting for Listening (adapted from Hamada, 2012)

	Procedure	Details
1	Listening	Listen to the passage twice and fill in the blank.
2	Parallel reading	Shadow while reading. Understand the script and use a dictionary if needed.
3	Mumbling (Twice)	Shadow sounds silently. Focus on pronunciation and intonation.
4	Check understanding	Verify meaning and pronunciation. Refer to translations.
5	Synchronized reading	Read aloud while shadowing an audio source. Ensure correct pronunciation.
6	Prosody shadowing	Shadow without a script. Repeat speech using play/pause buttons.
7	Check Details (answers)	Review correct answers. clarifying unclear parts.

This shadowing model, which includes steps like "Checking Understanding" and "Checking Details," is essential for students with limited English proficiency. These steps help students confirm comprehension and address unclear sounds or meanings, improving understanding. For learners struggling with nuances in spoken English, these additions bridge gaps in their listening skills. The model's progressive structure, starting with simpler tasks and moving to more complex ones, helps students build their listening abilities at a manageable pace. It is particularly effective in large classes, where individual attention is limited, offering a clear and accessible learning path.

Methods

Research Design

This study applied mixed-methods design, integrating quantitative and qualitative approaches (Creswell, 2012). It utilized a single-group experimental method to evaluate the influence of the shadowing technique

on Chinese learners' listening comprehension, based on pre-test and post-test results. Participant logs were also collected to gather qualitative data on their perceptions of the shadowing technique.

Participants

The population of this study comprised 800 Grade 10 EFL students from a senior high school in Yunnan province, China, who were pre-identified as struggling with listening comprehension with sub-standard pronunciation. These weaknesses combined with limited exposure to standard English audio recordings resulted in their inability to recognize what speakers were saying on the radio.

The final participants were selected from Classes 37 and 38 (totaling 100 students), with 30 EFL students chosen through purposive sampling. The inclusion criteria were: (1) Students with an intermediate level of listening comprehension performance, as indicated by regular test scores, suggesting potential for improvement; (2) Students with pronunciation issues at an intermediate level of listening proficiency; (3) Active participation in classroom activities and willingness to engage in the study.

Teaching Materials

This study used materials from *Aisi English*, a listening practice workbook selected by the school as a supplementary resource for English instruction. Specifically designed to prepare students for the University entrance listening exam (Gaokao), the book aims to enhance listening comprehension through various exercises, including dialogues, monologues, and spoken passages accompanied by comprehension questions. It focuses on key listening skills tested in previous Gaokao exams and includes a selection of past exam questions, helping students familiarize themselves with exam formats, common question types, and essential listening strategies. As the designated resource, all teachers structured their lessons around it. Five topics from the workbook were selected for the shadowing technique to improve students' listening comprehension in line with Gaokao requirements.

Table 2

Topics of Materials

Topic	The theme of Monologue and Dialogue	Question formulation
Topic 1.	People and Events	What did he do?

		What is she doing?
		What are they going to do?
Topic 2	Places and Destinations	Where did she go?
		Where are the speakers going?
		Where are the speakers?
Topic 3	Numbers and Calculations	When will the film start?
		How much is the food and drink?
Topic 4	Background and Relationships	What is the most probable relationship between the speakers?
		What does the man do?
Topic 5	Main Ideas and Purposes	What are the speakers talking about
		What is the woman complaining about?
		What will listeners probably hear next?

The teaching materials in this study were based on topics commonly featured in the Gaokao listening exam (University entrance listening exam), such as People and Events, Places and Destinations, Numbers and Calculations, Background and Relationships, and Main Ideas and Purposes. The aim was to enhance students' listening comprehension in preparation for the Gaokao (Chinese university entrance exam).

Research Instruments

Listening Comprehension Test: Identical pre- and post-listening tests were administered to assess the impact of the shadowing technique. Although the tests were the same, students were not allowed to discuss or check the answers at any time, nor could they keep the test papers or learn their scores after each test. Section 1 comprised five conversations, each followed by multiple-choice questions (three options: A, B, and C). Students were allowed 10 seconds to answer after each conversation, with each dialogue played only once. This section evaluated basic listening comprehension, focusing on immediate understanding of the content. Section 2 featured five more complex dialogues or monologues, each followed by multiple-choice questions. Prior to listening, students had 5 seconds to read the questions, and 5 seconds to answer afterward. Each dialogue or monologue was played twice. The questions in this section were designed to test higher-level skills, such as the ability to infer, retain, and process information over an extended period. The 16-question test encompassed topics aligned with the Chinese Gaokao English listening exam. Content validity was established through review by three experts, while reliability was assessed via a pilot study. The test demonstrated moderate difficulty (average index: 0.49) and discrimination (average index: 0.22). Consequently, some items were revised to enhance their effectiveness in evaluating student performance.

Questionnaire: adapted from Sumiyoshi and Svetanant (2017) and

tailored for this study, covering five categories: (1) listening comprehension, (2) attitudes toward shadowing, (3) motivation, (4) pronunciation, and (5) vocabulary acquisition. This study employed a six-point (as opposed to five-point) Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree) to encourage decisive responses, enhance sensitivity and reduce ambivalence. (Liu & Jackson, 2008). Content validity was confirmed through the Item-Objective Congruence Index, and reliability was confirmed with a Cronbach's Alpha score of 0.971.

Log: addressed the second research question regarding students' perceptions. The study directed students to write one log each week for two months, resulting in a total of eight logs for each student. They focused on attitudes and perceptions of the shadowing technique's impact on listening comprehension. Validity was ensured through 3 expert reviews, and reliability was assessed based on response consistency with interraters.

Teaching Procedure

The study lasted eight weeks, with two 45-minute sessions per week, totaling 12 hours. Participants listened to the audio source six times and shadowed it five times in different steps. The audio was eight minutes long, but only six minutes contained actual content, with a speech rate of about 150 words per minute and around 900 words in total. Adapted from the school-provided textbook, it was designed by experts to meet the language proficiency required for the college entrance exam. The text's readability was appropriate for high school students, and all teachers in this school were required to use this book, which represented natural speech from authentic materials. The process was structured as follows:

1. Pre-listening Stage:

The teacher activated students' prior knowledge by asking questions and explaining key vocabulary and proper nouns related to the listening material, aiming to facilitate comprehension and reduce anxiety.

2. Listening and Shadowing exercise

Step 1: Listening to Audio (8 minutes)

Students listened to the audio source twice, answered pre-set questions to help them familiarize themselves with the content. Students calculated their score so as to compare their answers before and after the shadowing technique to assess its effectiveness.

Step 2: Parallel Reading (10 minutes)

Students altogether shadowed the audio while reading the text to understand its meaning and marked the confusing parts. After that, students could consult a dictionary or the teacher if needed. After students finished, the teacher asked them to summarize the main ideas of the listening content.

The teacher helped them to understand the material and then provided guided pronunciation practice and corrected errors. If students encountered problems, the teacher provided feedback.

Step 3: Mumbling (5 minutes)

Students silently shadowed the audio to become familiar with the pronunciation and intonation. This was done without reading the text, focusing on understanding and enjoyment of the content. The teacher observed to ensure students followed the correct pronunciation and rhythm. The teacher then provided feedback when necessary.

Step 4: Checking Understanding (4 minutes)

Students revisited any parts of the text they struggled with during the shadowing process. Both English and Chinese translations were provided for three minutes to reinforce comprehension. The teacher answered students' questions and clarified difficult language.

Step 5: Synchronized Reading (5 minutes)

Students read the text aloud with the audio to refine their pronunciation, after showing understanding of the text's meaning. The teacher monitored pronunciation and fluency during the group reading aloud session and provided immediate feedback and corrections.

Step 6: Prosody Shadowing (5 minutes)

Students shadowed the audio without a script, focusing on prosody. They used the pause-and-play function when needed. If it was a dialogue, they practiced taking one role and responding accordingly. The teacher provided corrections on rhythm, stress, and intonation for students who couldn't follow the shadowing exercise.

Step 7: Check Details and Answer Verification (2 minutes)

Students listened to the audio again, answered similar questions to evaluate progress, and then reviewed their answers from Step 1 to check for improvement in accuracy. The teacher explained the answers and highlighted important details.

3. Post-Listening Activity:

Students took notes on what they learned in class and recorded their perceptions of the shadowing technique in a log. The teacher facilitated role-plays and encouraged accurate expression, providing feedback on mistakes.

Data Collection and Analysis

Before data collection, the researchers obtained consent and approval from all participants and the senior high school, informing them of the study's purpose and ensuring data confidentiality. Ethical issues in this study were approved by the Human Research Ethics Review Committee at Khon Kaen University.

The 8-week treatment included the following procedures.

Step 1: A pretest on listening comprehension was administered to the experimental groups.

Step 2: Participants were introduced to the shadowing technique via a PowerPoint presentation and video.

Step 3: The shadowing technique was implemented, and students wrote weekly logs reflecting their perceptions.

Step 4: After 8 weeks, a post-test and questionnaire were administered to the 30 participants, with data collected via the Chinese app Wenjuanxing.

To assess the effect of the shadowing technique on students' listening comprehension, a paired sample t-test and mean scores were used to compare pretest and post-test results, identifying any significant improvements.

To examine students' perceptions of the shadowing technique, descriptive statistics, including mean and standard deviation were used to analyze questionnaire responses. Additionally, content analysis was conducted on students' logs to identify recurring themes in their reflections and experiences.

Results

Student Improvement in Listening Comprehension Using Shadowing Technique

Table 3

Comparison of Pre- and Post-listening Comprehension Tests

Paired Sample *t*-Test					
test	N	Mean	S.D.	*t*	*Sig.*
Pretest	30	12.1	3.521	-5.993	0.000
Post test	30	15.98	3.756		

*p<.05

After eight weeks under the shadowing technique treatment, the results of the paired-sample *t*-Test showed a significant improvement in listening comprehension, with the Mean score increasing from 12.1 (SD = 3.521) in the pre-test to 15.98 (SD = 3.756) in the post-test. The standard deviation of the pre-test indicated variability in the students' initial performance, while the slightly higher Standard Deviation in the post-test suggested a wider range of scores, reflecting different levels of improvement among students. The *t*-value of -5.993 and the *p*-value of 0.000 ($p < .05$) confirmed that the improvement was statistically significant, supporting the effectiveness of the shadowing technique in enhancing listening

comprehension.

Table 4

Students' Perceptions on Shadowing Technique

No.	Items	Mean	SD	Interpretation
1	The most satisfying thing for me with the shadowing technique is trying to understand the content as thoroughly as possible.	4.83	0.950	Agree
2	I practice shadowing because I want to speak English as native speakers do.	5.17	0.950	Strongly agree
3	Shadowing is beneficial, and I plan to keep practicing it even after finishing this unit.	4.63	1.033	Agree
4	My ability to listen to English conversations improves as I practice the shadowing technique.	4.83	0.986	Agree
5	I can enhance my listening comprehension with more practice in shadowing.	5.07	1.015	Agree
6	Shadowing is a good way to improve listening comprehension.	5.07	0.691	Agree
7	The shadowing technique can help to improve my accent.	5.23	0.858	Strongly agree
8	Shadowing is effective in improving my pronunciation.	5.00	0.871	Agree
9	My pronunciation and intonation became better after practicing the shadowing technique.	4.83	0.913	Agree
10	Overall, shadowing practice provides me with a valuable learning experience.	4.67	0.922	Agree
11	I would recommend shadowing practice to my friends who are learning foreign languages	4.63	0.850	Agree
12	I will spend some time on shadowing English to improve my overall skills.	4.80	0.925	Agree
13	The shadowing technique can help me to understand how to use vocabulary.	4.87	1.008	Agree
14	My vocabulary has improved after practicing the shadowing technique.	4.77	1.135	Agree
15	I can use some vocabulary to make sentences.	5.03	0.999	Agree
Total		**4.89**	**0.940**	**Agree**

The data highlighted strong positive perceptions of shadowing techniques among students, especially in areas like accent improvement (M = 5.23) and speaking English like native speakers (M = 5.17), both of which received "strongly agree" ratings. Overall, students also agreed that shadowing helped with listening comprehension (M = 5.07), pronunciation

(M = 5.00), and vocabulary usage (M = 4.87). Additionally, they felt that shadowing provided a valuable learning experience (M = 4.67) and were willing to spend some time on shadowing English (M = 4.80). The overall Mean score of 4.89 reflects a generally favorable view of shadowing techniques.

Students' Improvement in English Linguistic Knowledge

The qualitative results obtained from the logs (n=30) were intended to reinforce and affirm the quantitative findings. The content analysis explored Chinese EFL senior high school students' perceptions of the shadowing technique in listening comprehension. Excerpts from these data were translated from Chinese to English for better understanding and clarity. Furthermore, each excerpt included the identification of the participants. Some key excerpts were presented below:

> Extract 1: "Shadowing practice has helped me improve my listening comprehension by recognizing connected speech, such as linking and reductions, making fast-paced English easier to understand."
> Extract 2: "I can now grasp key ideas in conversations more quickly without needing to understand every single word."
> Extract 3: "Shadowing is helpful, but I still struggle with fast speech and unfamiliar accents such as the British and Indian accents."
>
> (Students' Logs)

Based on the log data, the majority of students (27 out of 30) reported that shadowing techniques effectively improved their English listening comprehension. A small subset (3 students) mentioned that the exercises were either too challenging or did not lead to listening improvements. Many participants noted that shadowing enhanced their ability to recognize connected speech patterns, such as linking and reductions, which contributed to better comprehension of fast-paced spoken English. Specifically, 20 participants indicated significant improvement in their ability to grasp key ideas during listening tasks, while 7 participants reported moderate gains. However, some participants faced challenges, particularly with rapid speech (140-150 words per minutes) or unfamiliar accents such as British accents.

> Extract 1: "Shadowing practice has made my pronunciation clearer and my speech sound more natural."
> Extract 2: "I feel more confident speaking English now because my intonation and fluency have improved."

> Extract 3: "While shadowing helps with speaking skills, the repetition limits creative expression. I wish there were more chances to form my own sentences instead of just imitating."
>
> (Students' Logs)

The shadowing technique was also highly beneficial for pronunciation and speaking skills. Nearly all participants (29 out of 30) indicated improvements in articulation, intonation, and fluency. Among them, 18 participants reported that their pronunciation became clearer and more natural, while 11 participants observed more modest progress. One participant, however, felt that the repetitive nature of the exercises limited opportunities for creative language use.

> Extract 1: "Shadowing has helped me learn new words and expressions. I often look up unfamiliar vocabulary words and use them in my speaking and writing, which has improved my overall language skills."
>
> Extract 2: "While shadowing introduced some useful vocabulary, I found that some words were not useful for academic contexts. I think using more diverse materials would help expand the vocabulary relevant to my studies."
>
> (Students' Logs)

In terms of vocabulary acquisition, a substantial number of participants (26 out of 30) acknowledged that shadowing reinforced their vocabulary knowledge and introduced new, practical expressions. Fifteen participants frequently looked up unfamiliar words from the recordings and integrated them into their speaking or writing practice. Nonetheless, 4 participants pointed out that some vocabulary in the recordings was not applicable to academic settings, emphasizing the need for more diverse materials.

Student Improvement in Cognition and Motivation

> Extract 1: "Shadowing has really helped me stay focused during listening tasks. By listening and speaking at the same time, I can concentrate better and avoid getting distracted."
>
> Extract 2: "I've noticed a significant improvement in my working memory. The repetition in shadowing helps me remember new vocabulary and sentence structures more effectively, and I can use them when speaking."
>
> Extract 3: "When doing long listening activities, I find that I can stay focused longer. Shadowing keeps me engaged and allows me to catch details that I would typically miss during extended listening."
>
> (Students' Logs)

The shadowing technique had a significant impact on participants' cognitive abilities, particularly working memory and attention. Out of 30 participants, most of them (26) reported improved focus during the tasks, as shadowing required using both listening and speaking skills. Additionally, 23 participants felt their ability to retain new vocabulary and sentence structures had improved, indicating a boost in working memory. Furthermore, 20 participants noted better attention during extended listening activities, which enhanced overall engagement and language development.

> Extract 1: "Shadowing has definitely made me more motivated to practice. After each session, I feel a sense of achievement, especially when I can mimic the native speakers' pronunciation and rhythm."
> Extract 2: "Replicating native speech while shadowing has made me more confident and excited to learn. It's rewarding when I manage to copy their speech patterns, and it keeps me motivated to continue."
> Extract 3: "Although shadowing is challenging, I enjoy it, but the fast pace and repetition sometimes make it feel a bit tedious."
>
> (Students' Logs)

The shadowing technique also helped to improve motivation. Of the 30 participants, 24 reported feeling more motivated to practice after engaging in shadowing exercises. Around 21 participants stated that replicating native speech gave them a sense of achievement, which increased their desire to keep learning and reduced their anxiety. Furthermore, 10 participants mentioned that the challenge of shadowing kept them interested and excited about their language learning journey. However, a few (4) participants found the fast pace of some recordings (140-150 words per minutes) and the repetitive nature of the shadowing exercises frustrating and occasionally tedious, which temporarily dampened their enthusiasm.

Discussion and Conclusion

The Effect of the Shadowing Technique

The results of this study indicated that the shadowing technique positively impacted students' listening comprehension. This aligned with earlier studies (e.g., Li, 2024; Thongmak, 2021; Zaidan, 2021; Zou, 2023), which support the effectiveness of shadowing in listening. There were several reasons why the students' listening comprehension had significantly

improved. Firstly, during the pre-listening phase of the lesson, the teacher activated students' prior knowledge by introducing key vocabulary and proper nouns relevant to the listening material, which facilitated their acquisition of background information and enhanced their comprehension. Since the shadowing technique incorporates elements of the top-down listening process and interactive processing, it can develop listening comprehension more effectively, as emphasized in prior research (Manihuruk & Sidabutar, 2022; Utomo & Sulistyowati, 2022). By integrating these three processes, the shadowing technique strengthens the phonological loop in students' memory, thereby enhancing their listening comprehension (Thongmak, 2021). Secondly, the improvements can be attributed to the well-designed lesson plans that included shadowing activities. Iqbal et al. (2021) asserted that a lesson plan was crucial for successful teaching, facilitating student learning, and managing the classroom to achieve intended outcomes, and is therefore considered a key element of teaching quality and improvement. In this study, the researcher developed comprehensive and level-appropriate lesson plans, which aligned with the theoretical frameworks proposed by Hamada (2021), as well as Kadota and Tamai (2004), renowned experts in the field.

In addition to enhancing listening comprehension, the shadowing technique demonstrates effective improvement in pronunciation, intonation, speaking and vocabulary acquisition. These improvements stem from the structured steps of the shadowing technique. For example, the mumbling stage focuses on pronunciation and intonation, while synchronized reading refines pronunciation and speaking accuracy by improving syllable awareness and word stress recognition, such as stress and intonation (Salim et al., 2020; Utami and Morganna, 2022). Moreover, in parallel reading, students can use dictionaries to check unfamiliar words in context, which further facilitates vocabulary acquisition. This aligns with Hamada (2024), who emphasized that selective shadowing enhances both receptive and productive vocabulary skills. Furthermore, reading scripts of listening materials during the shadowing procedure also aids in vocabulary expansion. This aligns with previous studies, which have suggested that learners can acquire new vocabulary and content knowledge by engaging with appropriate listening materials (Putman & Kingsley, 2012). Overall, these elements demonstrate the effectiveness of shadowing techniques in improving various aspects of linguistic knowledge, including listening, pronunciation, vocabulary, and speaking skills.

Students' Perceptions Towards the Shadowing Technique

The data from the logs provided new insights into the shadowing technique. Firstly, shadowing enhances cognition by improving working memory and attention in language learning. While foundational linguistic

skills such as vocabulary and grammar are necessary, they are not sufficient for successful listening comprehension. According to Schmidt (1990), attention plays a key role in controlling awareness, which is essential for acquiring any linguistic feature in an L2. Learners must focus on these features with at least minimal awareness, even if they do not fully understand the underlying rules. This aligns with the findings of Kim and Phillips (2014), who emphasized that effective listening comprehension requires not only distinguishing speech elements and recognizing words but also integrating cognitive processes such as noticing and coordinating top-down and bottom-up mechanisms. Similarly, Leow (2018) reinforced the importance of noticing language input, further supporting Schmidt's theory. Moreover, shadowing serves as a high-quality input source that enhances these cognitive processes. As Wong (2015) pointed out, shadowing strengthens both top-down and bottom-up processing, leading to improved comprehension. This suggests that shadowing is not only beneficial for attention but also plays a crucial role in overall listening proficiency.

Secondly, the findings indicated that participants engaged in shadowing had higher motivation and lower anxiety in studying English listening comprehension. They highlighted motivation as a key to effective learning, leading to better language achievement (Seven, 2020). This improvement can be attributed to the diverse activities provided by the shadowing technique. Firstly, it fosters a more active, student-centered learning environment. For example, through stages such as listening, mimicking, and repeated shadowing exercise, students actively engage with the material, enhancing both their comprehension and confidence (Thongmak, 2021). What's more, the use of Gaokao materials further aligns with students' interests, fostering a sense of relevance and accomplishment. Thirdly, students have expressed a strong desire to continue applying the shadowing technique after the study, reflecting its positive impact on their learning attitudes. These findings align with prior research (Sumiyoshi & Svetanant, 2017), which demonstrate that shadowing increases learner engagement and motivation, thereby enhancing their learning performance.

While the shadowing technique has shown positive effects on students' cognitive abilities, motivation and engagement, it is essential to address the challenges that arose during its implementation. These difficulties offer valuable insights into areas for improvement and will be discussed in the following section.

Problems Encountered While Using the Shadowing Technique

Log data revealed that participants struggled with academic terms, complex sentences, and fast speech delivery, largely due to poor

pronunciation, which hampered their ability to recognize standard pronunciation. This is supported by Kang's (2019) findings that non-standard pronunciation makes it difficult for students to follow speakers and identify correct pronunciation while listening. One reason for this could be attributed to their lack of and unfamiliarity with accents, pronunciation, and intonation. This idea is in line with the work of Kurtuldu and Ozkan (2022), who argued that unfamiliar accents significantly hinder listening comprehension. Moreover, the students' limited mastery of vocabulary and grammatical knowledge also seem to have played a role in their listening comprehension difficulties. This finding corroborates Hadijah and Shalawati's (2016) assertion that inadequate vocabulary and grammar knowledge can negatively impact students' ability to comprehend spoken language. Another cause may be that students failed to understand the exercises, making them more likely to give up, which resulted in distractions. These distractions hindered their performance during the shadowing process through a loss of concentration (Each & Suppasetseree, 2021).

The findings reveal that a few students felt that repetitive practice in the shadowing technique became tedious after seven steps. Prolonged repetition without noticeable improvement can lead to fatigue and reduced engagement, as noted by Kang (2019) and Zou (2023). Another contributing factor could be the lack of variety in the shadowing tasks, which do not sustain students' interest and motivation. Sumiyoshi and Svetanant (2017) highlighted the importance of maintaining motivation by limiting shadowing repetitions to 6-8 times. Additionally, individual personality traits, such as various neurotic conditions, may exacerbate the issue, as students prone to anxiety and negative emotions are more likely to feel demotivated during repetitive tasks (Zhang & Wang, 2023). These findings suggest that addressing task variety and individual differences could enhance the effectiveness of shadowing exercises.

Implications, Limitations, and Recommendations

The findings of this study highlighted the effectiveness of shadowing techniques in improving students' listening comprehension, linguistic knowledge, and cognitive abilities. Therefore, teachers are encouraged to integrate shadowing into their teaching practices to foster engagement, enhance language skills, and motivate students. However, for lower-proficiency students, language teachers should scaffold linguistic knowledge before engaging in shadowing exercises to avoid frustration and maintain motivation. Additionally, tasks should be broken down into manageable steps to support gradual skill development and reduce anxiety. Ongoing guidance is crucial to sustain student engagement, particularly in addressing cognitive

challenges. Curriculum designers should consider working memory, listening anxiety, task variety, and personal learning styles in their program development, as these factors affect listening comprehension and academic performance. Utilizing chunking skills, pre-listening activities, and scaffolded tasks can help with working memory. To reduce anxiety, graded exposure and peer support are effective. Incorporating diverse tasks and creating motivating, low-stress activities will further enhance student engagement and comprehension, improving overall academic performance.

This study revealed several limitations. The use of purposive sampling restricts the ability to generalize the findings, as the sample selected may not have accurately reflected the diversity of the broader student population. Additionally, the reliance on school textbooks as the primary listening source material restricts the variety of listening experiences, as these materials may not capture the diversity of real-world language use. Finally, the short duration of the study (eight weeks) also meant that the long-term effects of shadowing techniques were not assessed.

To address these limitations, future research should establish a more diverse sample and explore a broader range of listening materials, such as authentic media content, to better reflect real-world language use. Additionally, as students have different perceptions of the shadowing technique, investigating how individual traits like personality and motivation affect shadowing technique' effectiveness could lead to more tailored exercises for diverse learners. A longer study duration would allow for a better assessment of shadowing's long-term effects on listening and pronunciation. It would also help track students' progress, reduce short-term fluctuations, and provide more reliable results. Additionally, it could reveal whether shadowing fosters lasting learning habits and offer insights into individual differences, leading to more personalized teaching approaches. Finally, combining shadowing with other language learning strategies could provide a more comprehensive approach to improving language proficiency.

Conclusion

In conclusion, this study highlighted the positive impact of shadowing techniques on learners' listening comprehension by engaging students in active listening. What's more, shadowing reinforces key skills such as pronunciation, speaking, motivation and cognitive functions like working memory and attention. Through structured tasks and guided practice, students can notice, process, and produce language in context, fostering improved language acquisition and overall proficiency. Despite these benefits, challenges remain, particularly for learners with lower proficiency levels who may struggle with aspects such as vocabulary, complex sentence structures,

and unfamiliar accents. Therefore, it is crucial to support these learners with scaffolded tasks and explicit instruction, especially in areas like vocabulary building and accent familiarity. Moreover, considering factors such as working memory and listening anxiety in the course design is vital for maximizing the effectiveness of language learning strategies. To gain a deeper understanding of the long-term benefits of shadowing, future research should explore the long-term benefits of shadowing, its integration with other methods, and the influence of individual traits like personality and motivation.

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