

Implementing the Metacognitive Pedagogical Cycle: Effects on Listening Performance and Learners' Perceptions

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Abstract

This study evaluates the effects of the metacognitive pedagogical cycle on EFL learners' listening performance and their perceptions regarding the metacognitive pedagogical cycle. A total of 62 learners from two intact classes participated in this study based on the convenience sampling technique. One class was randomly selected as the experimental group (N=31), which received the metacognitive pedagogical cycle as the intervention, and the other class was the control group (N=31), which underwent the conventional approach. After 14 weeks of intervention, a listening test for TEM-4 was used to evaluate learners' listening comprehension performance, and a semi-structured interview was utilized to collect learners' attitudes toward the metacognitive pedagogical cycle. Results showed that learners in the experimental group outperformed learners in the control group regarding listening performance. Moreover, learners held positive attitudes toward the metacognitive pedagogical cycle. Furthermore, this metacognitive process-based approach to listening is recognized to have transferability beyond the second language classroom. At last, suggestions were made for implementing metacognitive instruction within the existing education system.

Keywords: *The metacognitive pedagogical cycle, EFL learners, Perceptions, Listening.*

INTRODUCTION

Listening lies at the core of language acquisition and is frequently considered a challenging linguistic skill for EFL learners and instructors to impart in the classroom effectively. In recent years, the pedagogy of listening in English classrooms has garnered increased attention in academic literature compared to its historical reception, leading to a multitude of advancements and innovations. Traditional approaches to L2 listening are gradually being supplanted by methods that center on cognitive processes and metacognition, among which metacognitive instruction has gained a growing interest over the last decade. Among the approaches for applying metacognitive instruction in L2 listening to develop learners' awareness of the listening process is the metacognitive pedagogical cycle. Plenty of research has been conducted to probe into the effects of the metacognitive pedagogical cycle on listening performance. However, the conclusion of the effectiveness of the metacognitive pedagogical cycle seems inconsistent. Moreover, there has been a lack of emphasis on the perception of pedagogical instruction by learners, whose perspectives are crucial for educators to gain insight into how to effectively facilitate the development of their listening skills (Siegel, 2013). Therefore, this paper investigates the effects of the metacognitive pedagogical cycle on listening performance and mainly reports on learners' perspectives regarding the metacognitive pedagogical cycle.

LITERATURE REVIEW

Metacognition

While metacognition may be considered somewhat nebulous, numerous scholars have endeavored to provide descriptive definitions. According to Flavell (1976), metacognition entails understanding cognitive processes and their outcomes. It involves actively monitoring, regulating, and coordinating these processes. Paris and Winograd (1990) define metacognition as any knowledge about cognitive states or processes, while Leahey and Harris (1997) view metacognition as the knowledge, awareness, and monitoring of one's own cognition. Metacognition is the awareness of these processes and how they can be effectively utilized to achieve learning objectives. Zimmerman (2008) describes metacognition as the ability to adapt behavioral and environmental

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functioning in response to changing learning demands. Anderson (2002) regards metacognition as thinking about thinking. McCormick (2003) integrates metacognition into the individual’s knowledge, awareness, and conscious efforts to regulate their cognitive activities, suggesting that engagement is involved in text processing. According to Echevarria et al. (2000), metacognition is characterized by 1) flexibly selecting problem-solving strategies suitable for specific learning situations, 2) articulating learning objectives, 3) scrutinizing the comprehension process through self-questioning, and 4) taking corrective action when comprehension falters. Additionally, metacognition pertains to an individual’s conscious control and regulation of cognitive processes, focusing on cognitive activities or learning endeavors.

Various scholars (Flavell, 1979; Garner, 1992; Anderson, 2002) have classified the components of metacognition. While the components have been categorized differently, there is consensus on three essential elements: knowledge of cognitive processes, regulation of mental processes, and effective utilization of strategies. In summary, metacognition comprises three key components: metacognitive knowledge, metacognitive regulation, and metacognitive experience, as depicted in Figure 1.

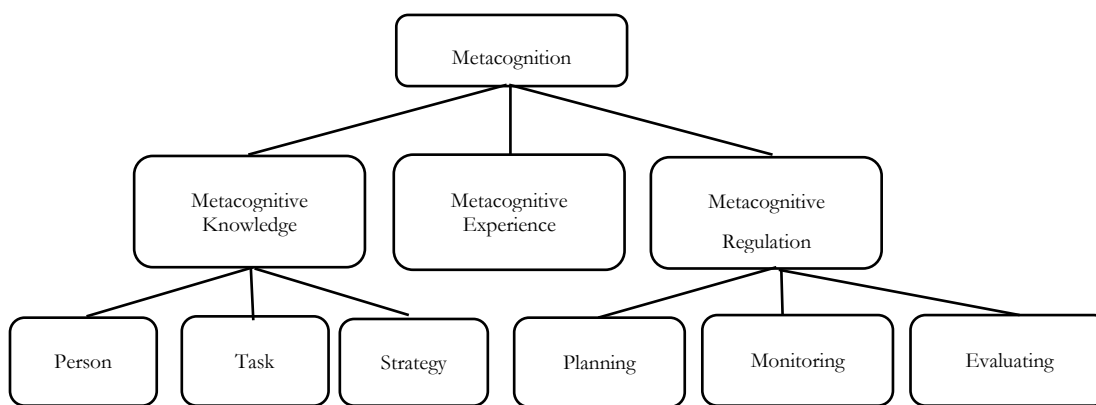


Figure 1. Components of Metacognition

Source: Adapted from Vandergrift & Goh, 2012

Metacognitive Instruction In Listening

Metacognitive instruction was initially coined by Vandergrift and Goh (2012). In the realm of second language listening, metacognitive instruction refers to a pedagogical approach that empowers learners to actively engage in the process of listening in order to enhance their awareness of metacognitive knowledge pertaining to themselves, the demands of listening, and effective strategies for comprehension (Vandergrift & Goh, 2012). This instructional approach encompasses both direct teaching on how to employ relevant strategies and support in developing learners' metacognitive knowledge (Goh & Taib, 2006). By incorporating metacognitive instruction into L2 listening education, learners are guided through a learning process that fosters the development of metacognitive knowledge and regulatory skills (Toapanta, 2022), enabling them to strategically plan, monitor, and evaluate their progress during the instructional period. Moreover, this student-centered approach encourages interaction among learners as they make choices and assess and reflect on their own learning processes. Ultimately, metacognitive instruction facilitates reflection upon one’s learning journey to manage L2 listening (Chero, 2023) effectively.

The primary objective of employing metacognitive instruction in L2 listening is twofold: first is the development of metacognition knowledge; second is promoting strategic use. It aims not only to raise awareness about the nature of L2 listening but also to foster an understanding of oneself as a second-language listener. Furthermore, it seeks to encourage comprehension and utilization of various strategies for enhancing listening skills while promoting self-management.

In contemporary L2, listening education practices have shifted towards viewing teaching as a dynamic process rather than focusing solely on outcomes such as correct answers provided by learners, which serve as

indicators for comprehension success (Graham & Santos, 2015).

Drawing from the guidelines established by Veenman et al. (2006), as previously mentioned, Goh (2008) devised two distinct types of instructional activities. The first type involves integrated experimental listening tasks for metacognitive instruction. These tasks engage learners in the social-cognitive processes of listening comprehension during their participation in various listening activities, typically found in their course materials or provided by instructors. By intertwining everyday listening exercises with activities designed to heighten metacognitive awareness, learners are able to develop a conscious understanding of the intricate processes involved in effective listening (Goh, 2008). Subsequently, they can apply and refine these newfound skills beyond the confines of the classroom environment (Kobayashi, 2020), delving into self-perception as listeners, implementing appropriate strategies, and identifying factors that impact their comprehension.

Furthermore, integrated experimental listening tasks also encompass language-focused activities wherein learners dissect the linguistic elements present within a given listening text. Such endeavors enhance learners' grasp of task knowledge, while collaborative mini-projects provide an avenue for co-constructing metacognitive knowledge through joint efforts.

Turning our attention towards guided reflection for listening - the second type of metacognitive instructional activity - it aims to extract latent L2 listening knowledge from learners and facilitate the development of new insights as they interpret their own experiences with auditory stimuli (Goh, 2008). These reflective practices may necessitate learners to strategize, monitor progress, and evaluate both their learning process and overall comprehension levels (Vandergrift & Goh, 2012). While primarily intended for post-class exercises, these reflective activities can be seamlessly incorporated before or after a dedicated lesson on active listening techniques.

Metacognitive Pedagogical Cycle

In order to implement metacognitive instruction, several theoretical frameworks have been proposed by a variety of esteemed scholars (Anderson, 2002; Vandergrift, 2004; Vandergrift & Goh, 2012). As the preeminent model in empirical research and educational application, the metacognitive pedagogical cycle serves as a guiding framework for learners to navigate through the processes of anticipation, problem recognition, self-regulation, focused attention, and introspection. The metacognitive pedagogical cycle represents a comprehensive approach to metacognitive instruction in second language listening, encompassing process-based lessons that afford learners the opportunity to cultivate a heightened awareness of unidirectional listening processes (Tanewong, 2019). Initially proposed by Vandergrift in 2004 and subsequently refined by Vandergrift and Goh in 2012, this model is designed to enhance learners' listening comprehension through targeted metacognitive instruction focused on the intricacies of the listening process. Within this framework, learners are afforded ample opportunities to hone their listening skills regardless of their proficiency level (Vandergrift 2004), thereby enabling them to regulate their comprehension effectively and achieve success in their auditory endeavors.

The metacognitive pedagogical cycle comprises five distinct stages: pre-listening (planning/prediction stage), first listening (first verification stage), second listening (second verification stage), final listening (third verification stage), and post-listening (reflection and goal-setting stage) (Vandergrift & Goh, 2012).

The initial phase involves strategic planning and predicting. Learners are introduced to the concept of metacognition and provided with illustrative instances of how to generate ideas for various topics. Consequently, learners are empowered to anticipate the vocabulary or information they may encounter during listening exercises. This stage serves to cultivate a heightened awareness of the strategic planning and predicting process.

The second stage marks the first verification stage. The teacher presents the listening materials for the first time, prompting learners to evaluate their earlier predictions while simultaneously listening and adding further details based on their comprehension. This stage allows learners to monitor both their previous assumptions and their grasp of the listening passage, as well as observe others' performance. Furthermore, it enables them

to discern which crucial information they need to pay closer attention to in the subsequent stage.

In the third stage, also known as the second verification stage, a specific metacognitive strategy is introduced to learners. Subsequently, they engage in a second listening of the audio file, during which they actively monitor their comprehension and make note of any information missed during the previous stage. Following this, they share their performance with their partners and mutually monitor each other's listening proficiency.

In the fourth stage, namely the final verification stage, learners are afforded an opportunity for purposeful listening in order to retrieve any missed information or acquire additional details necessary for task completion.

In the final reflection stage, learners engage in introspection regarding their performance and the strategic approaches employed when tackling listening tasks.

Previous Studies

Numerous empirical studies have delved into the influence of the metacognitive pedagogical cycle on learners' listening performance. The earliest investigations into this cycle occurred within a foreign second language context, revealing positive effects on listening comprehension. There is an increasing trend towards integrating metacognitive strategies within pedagogical cycles designed to enhance listening instruction in the realm of English as a Foreign Language (EFL) classrooms. Several other studies (Bozorgian et al., 2022; Mahdavi & Miri, 2019; Robillos, 2023) have also underscored the advantages of incorporating metacognitive pedagogical cycles for EFL/ESL learners. While most prior research indicates that metacognitive instruction enhances second language listening performance, certain unforeseen discoveries exist (Milliner & Dimoski, 2021; Renandya & Farrell, 2011). Given the inconclusive impact of the metacognitive pedagogical cycle on listening comprehension, further investigation and modification are warranted to enhance the efficacy of this model of metacognitive listening instruction.

Studies on students' perceptions of metacognitive instruction have been exceedingly limited. Li et al. (2022) conducted a comprehensive survey on undergraduates at a prestigious university in China. A meticulously designed questionnaire and individual interviews were administered after the initial, third, and final sessions of metacognitive instruction to delve into students' perceptions and document the evolution of their perspectives. The findings unveiled that following the first session, students professed heightened motivation and diligent engagement during class activities. Furthermore, in addition to these three discernible advantages, students expressed gratitude for the teacher's guidance after the third session. Subsequently, following the culmination of the instructional period, students continued to report experiencing previous benefits from the intervention, and some even began to feel more adept at employing cognitive strategies independently. However, it is worth noting that there were also some negative comments about the instruction, specifically regarding challenges with successfully implementing strategies and a preference for practical application over theoretical learning. Overall, though, it was evident that most students found great enjoyment in and derived substantial benefit from participating in metacognitive instruction as they exhibited strong motivation towards active engagement.

Robillos and Bustos (2022) asserted that there was a noticeable increase in student motivation and confidence as a result of their participation in metacognitive instruction. Students acknowledged an enhanced awareness of listening comprehension through this pedagogical approach while emphasizing its necessity within the educational framework using a pedagogical cycle model. Moreover, they reported being afforded ample time for communication and collaboration with their peers, which further enriched their learning experience.

Based on the findings of previous research, it can be asserted that the majority of students express satisfaction with the metacognitive pedagogical cycle. However, further investigation is necessary to delve deeper into learners' perceptions of the metacognitive pedagogical cycle, including their individual perspectives on each of the five stages.

Therefore, this study underscores the effectiveness of the metacognitive pedagogical cycle and the perceptions of EFL learners in higher education concerning the metacognitive pedagogical cycle

implemented in listening classes. Data from a listening test from the TEM-4 was collected to probe into the effects on listening performance. Furthermore, this research expands upon the data gathered through semi-structured interviews to provide a comprehensive insight into the EFL learners' understanding of the metacognitive pedagogical cycle. The following research questions were formulated:

Question 1: What is the effectiveness of the metacognitive pedagogical cycle on listening performance?

Question 2: What are EFL learners' perceptions of the metacognitive pedagogical cycle?

METHOD

Research Design

Aiming to measure the impact of the metacognitive pedagogical cycle on EFL learners' listening comprehension and investigate the perceptions of EFL learners towards the metacognitive pedagogical cycle, this study adopted a quasi-experimental research design. Data were collected using a quantitative instrument, a listening test from TEM-4, and qualitative data from semi-structured interviews were collected to address the learners' perception regarding the metacognitive pedagogical cycle.

Participants

The study included 62 first-year undergraduate English majors from two intact classes at the university. Since perceptions of the metacognitive pedagogical cycle were investigated in this study, only 31 learners in the experimental group were the potential participants for the semi-structured interview. These students are enrolled in a four-year diploma program and must complete English Listening courses for three semesters in addition to successfully passing other courses focused on reading, writing, speaking, and more. Moreover, they are encouraged to undertake the TEM-4 in their fourth semester and the TEM-8 in their eighth semester to evaluate their academic achievements. None of them were native English speakers and had few chances to speak English outside the classroom. They all had more than nine years of experience learning English. Finally, fifteen learners were randomly selected to partake in individual post-study interviews, with their consent, to gain deeper insights into EFL learners' perceptions of the metacognitive pedagogical cycle.

Instruments

The instruments used in this study were a listening test from TEM-4 and a semi-structured interview.

The initial instrument utilized was a listening comprehension test of TEM-4, specifically designed for sophomore English majors, in order to gauge the learners' auditory proficiency both pre-intervention and post-intervention. The TEM-4 listening section comprises dictation, talk, and conversation components, each carrying an equal weightage of 10 points for a total score of 30. This standardized test is administered by the Higher Education Department of China's Ministry of Education on a national level, thus lending it an authoritative status and ensuring its validity.

The interview protocol for EFL learners comprised two distinct sections: personal information and perception of the metacognitive pedagogical cycle. The initial section on background information included two introductory questions designed to establish rapport with the interviewees and gather pertinent details about their English listening experiences. Subsequently, the metacognitive pedagogical cycle perception segment encompassed seven probing inquiries and also five questions intended to delve into learners' perspectives on the utilization of pair work within the context of metacognitive pedagogical cycle instruction.

RESULTS AND DISCUSSIONS

Question 1: Effectiveness Of The Metacognitive Pedagogical Cycle On Listening Performance

Descriptive statistics were computed for the listening test scores across the pre-tests and post-tests, enhancing our understanding of the performance distribution (Table 1).

Table 1. Descriptive Statistics for the Listening Score across Pre-tests and Post-tests

Test	Group	N	Mean	SD
Pre-test	EG	31	14.9	4.59
	CG	31	14.3	4.05
Post-test	EG	31	19.5	4.06
	CG	31	15.6	4.41

Given the nearly identical mean scores of the two groups, it can be inferred that their average English listening proficiency was equal. Hence, prior to the implementation of the intervention, both groups demonstrated comparable levels of listening proficiency. Consequently, this equivalency in the listening proficiency before the intervention ensured a valid comparison between the posttest listening proficiency of the experimental and control groups (Huang et al., 2024).

The paired-sample t-test in the experimental group indicated that the listening scores were significantly higher on the post-test (M=19.5, SD=4.06) than on the pre-test (M=14.9, SD=4.59), with a p-value of 0.000. The listening scores were higher on the post-test (M=15.6, SD=4.41) than on the pre-test (M=14.3, SD=4.05), with a p-value of 0.786.

Moreover, in order to account for any potential disparities in the participants' initial listening proficiency, ANCOVA was conducted to determine the impact of the pedagogical intervention. As shown in Table 2, the experimental group continues to demonstrate a statistically significant difference in post-test scores for listening performance compared to the control group (p=.001<.05). This indicates that even after controlling for the influence of the pretest, the experimental group outperformed the control group in post-tests of listening performance.

Table 2. ANCOVA on listening post-test, with pretest as the covariate

Source	df	F	Sig.	Partial Squared	Eta
pretest	1	9.369	.003	.137	
Group	1	12.996	.001	.181	

The results suggest that the experimental group showed significant improvement after the implementation of the metacognitive pedagogical cycle for 14 weeks. The rationale behind the remarkable positive impact of the metacognitive pedagogical cycle on enhancing listening proficiency may lie in learners' familiarity with the integrated metacognitive processes across the five stages. This knowledge empowers students to regulate their listening processes and facilitate their overall listening development. These findings are consistent with previous studies by Bozorgian, Yaqubi, et al. (2022), and Gokmen (2023), which corroborated the beneficial influence of metacognitive intervention within a pedagogical cycle on learners' listening performance.

Question 2: Learners' Perceptions of The Metacognitive Pedagogical Cycle

A thematic analysis was employed to examine the data gathered from the semi-structured interviews. The information obtained from the interviews in this study was transcribed, coded, and categorized using thematic analysis techniques to capture the participants' perceptions regarding the utilization of the metacognitive pedagogical cycle in processing their listening comprehension tasks. A total of 15 transcripts from semi-structured interviews were meticulously gathered and subsequently converted into Nvivo (Version 12) to extract two predominant themes: attitude and competency. The overall favorable perception, as evidenced by the attitudes of the participants, is also evident in the following sub-themes: motivation and confidence. As for competency, knowledge and skills are two sub-themes that emerged from the thematic analysis. The conceptual framework illustrating these themes is visually depicted in Figure 2.

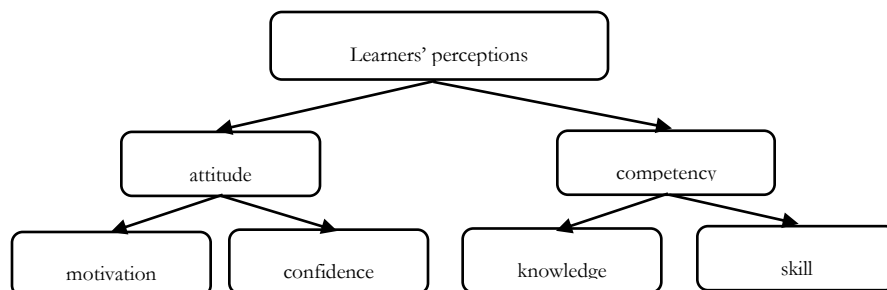


Figure 2: Conceptual framework of themes

Theme 1: Attitude

On the whole, all 15 participants in the interview demonstrated a favorable disposition towards the metacognitive pedagogical cycle, as evidenced by their high level of satisfaction with the listening training lessons. It was unanimously agreed among all learners that the metacognitive pedagogical cycle represented a valuable and novel experience, contributing significantly to improvements in their listening comprehension performance. Subsequently, all participants expressed a collective desire for continued exposure to metacognitive instruction within the framework of the pedagogical cycle in subsequent semesters.

Subtheme 1: Motivation

Motivation is a shift in attitude discerned by participants. The following interview excerpts eloquently illustrate the interconnectedness of motivation with learners' development of listening competence. Some students articulated that the pedagogical intervention enhanced their motivation to engage in the listening through explicit instruction on strategies for experiential learning, which in turn can fuel their intrinsic motivation.

The metacognitive pedagogical cycle in the listening class has proven to be quite effective. The teacher not only imparted the fundamental principles of listening, but also introduced a plethora of advanced strategies aimed at enhancing our overall comprehension skills. I feel motivated to listen and assimilate additional strategies. (Interviewee 1)

The results from the semi-structured interview revealed that employing the metacognitive pedagogical cycle enabled the participants to be more driven to complete listening tasks. This finding is in agreement with Robillos and Bustos (2022), who claim that learners increase their motivation during the early stages of the listening process. By becoming more familiar with the stages of the metacognitive pedagogical cycle, learners could decode critical words and phrases and observe others performing tasks, which could stimulate their prior assumption of success.

Subtheme 2: Confidence

Confidence is a discernible attitudinal shift noted by the participants. This particular attribute was consistently highlighted in their interviews. Despite encountering challenges and pressures when dealing with the listening materials, they expressed an increased sense of self-confidence in tackling these obstacles independently, as evidenced by the following excerpts. Some participants claimed that they had gained a heightened sense of confidence, which could influence their listening performance while completing the listening tasks, as indicated by the comments given by interviewee 5.

I am now convinced of my capability to fulfill listening tasks. Furthermore, I am confident in my capacity to understand what the speakers say without the help of translation. I find the accuracy of my answers has improved gradually. (Interviewee 5)

By involving students in each phase of the metacognitive pedagogical cycle, the teacher encourages them to employ diverse strategies, such as strategic planning, focused attention, and continuous monitoring. All activities serve as catalysts for activating students' prior knowledge and initiating the regulation of their listening process. Their self-assurance is bolstered alongside improvements in their accuracy (Robillos & Bustos, 2022).

The theme of attitude, encompassing motivation and confidence, can be succinctly defined as the psychological readiness required for effective English listening. Prior to engaging in the act of listening, students must first attain a state of psychological preparedness that enables them to dispel any erroneous preconceptions about the process of listening and their roles as language learners. It is only through

embracing a set of accurate values and perspectives that learners can hope to achieve success in their endeavors to comprehend spoken language.

Theme 2: Competency

The acquisition of these competencies thus serves as the benchmark for assessing the effectiveness of the implementation of the metacognitive pedagogical cycle in the listening classes. The following section contains more detailed extracts to show students' perceptions of the metacognitive pedagogical cycle from the two subthemes: knowledge and skill.

Subtheme 1: Knowledge

The first competency reported by the students was knowledge. Learners reported to possess a deeper understanding of themselves, including their strengths and limitations. Some claimed that their listening performance was easily influenced by external factors such as length, speed, and topic familiarity, as evidenced by the reflections given by interviewee 3.

When I listen, I am easily influenced by various factors, such as the length of the passage, the speed of the text, and my familiarity with the topic. When it comes to my preferred topics or types of texts, I am able to swiftly and accurately understand them. However, when encountering unfamiliar or less appealing content, I find myself encountering a sense of reluctance. (Interview 3)

Additionally, they also commented that they had acquired a comprehensive knowledge of the listening text and relevant strategies in order to effectively process textual information and address any challenges encountered during the listening process.

I feel that vocabulary and grammar are not the ultimate goals of listening. I should strive to learn how to listen. The listening classes helped me understand that listening comprehension entails more than simply identifying correct answers or achieving higher scores. (Interview 7)

The teacher taught us different strategies to deal with listening difficulties and drew our attention to the way we listened to the articles. It's useful for me, and it can make my mind clearer and help me understand things better. (Interview 10)

Subtheme 2: Skill

Learners also claimed that their listening skills had improved after the instruction with the metacognitive pedagogical cycle. The metacognitive pedagogical cycle was specifically designed to enhance the listening proficiency of EFL learners. In pursuit of this objective, metacognitive listening strategies were meticulously integrated with the teaching of fundamental listening skills throughout each stage. As a result, participants' feedback indicated that they had also acquired advanced listening abilities. The comments below exemplify the significant progress achieved in mastering various essential listening skills, such as self-questioning and vocabulary acquisition.

By engaging in self-questioning, I can make inferences that delve beneath the surface of the text and facilitate a more profound comprehension of the author's intended message. (Interview 15)

I learned to guess the meanings of unknown words based on contextual clues or my previous background knowledge. (Interview 12)

CONCLUSION

In summary, this study aimed to probe into the effects of the metacognitive pedagogical cycle on listening performance and learners' perceptions of the metacognitive pedagogical cycle in listening classes. The study revealed that the application of the metacognitive pedagogical cycle resulted in enhancements in EFL learners' listening comprehension performance. The qualitative data gathered from students revealed their positive attitudes towards and improved competencies resulting from the metacognitive pedagogical cycle. These participants not only developed a favorable attitude towards listening in English, as evidenced by their accounts but also demonstrated increased motivation and confidence. This positive emotional experience led

them to perceive listening as a process of constructing meaning despite the challenges they faced. Additionally, their confidence received a boost from improvements in comprehension and enriched vocabulary. These transformations can empower students to recognize their own roles and responsibilities in enhancing their knowledge and skills in English listening. Collectively, these achievements reflect the participants' positive responses to the metacognitive pedagogical cycle implemented in listening.

In order to expand upon the findings of this study, future research endeavors may encompass classroom observations in conjunction with the metacognitive pedagogical cycle and teacher perspectives. Furthermore, there is a pressing need to enhance teacher education in relation to the instruction of EFL listening so as to empower educators with the capacity to effectively design and deliver metacognitive guidance.

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