Assessing the impact of the metacognitive pedagogical cycle on adult EFL learners' proficiency and awareness: Evidence from Chilean classrooms

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Abstract

The benefits of metacognitive instruction for the improvement of students' L2 listening comprehension and metacognitive awareness have been documented in the literature. However, it is necessary to evaluate the impact of a process-based approach such as the metacognitive pedagogical cycle (MPC) on less-skilled English as a foreign language (EFL) learners in contexts with reduced out-of-classroom interaction. Therefore, the present quasi-experimental study sought to assess the impact of the MPC on the listening comprehension and listening metacognitive awareness of 75 low-proficiency adult EFL learners. Participants were divided into an experimental group, which received MPC instruction, and a control group that received regular listening instruction over a twelve-week period. Pre- and post-listening proficiency and metacognitive awareness test results revealed that the experimental group significantly increased their proficiency and metacognitive awareness scores in a more consistent and robust manner than the control group. Additionally, learners who were exposed to MPC instruction outperformed the control group in almost all aspects of metacognitive awareness. Results indicated that less skilled learners could benefit from a metacognitive approach to listening instruction in the selected EFL setting. Pedagogical implications are discussed.

Keywords: metacognitive pedagogical cycle; listening comprehension; process-based approach; metacognitive awareness; EFL learning.

Resumen

Los beneficios de la instrucción metacognitiva en la mejora de la comprensión auditiva de la L2 y la conciencia metacognitiva de los estudiantes se han documentado en la literatura. Sin embargo, es necesario evaluar el impacto del ciclo pedagógico metacognitivo (MPC) en estudiantes menos cualificados en contextos de inglés como lengua extranjera (EFL) en donde existe una reducida interacción fuera del aula. El presente estudio cuasiexperimental buscó evaluar el impacto del MPC en la comprensión auditiva y la conciencia metacognitiva auditiva de 75 estudiantes adultos de EFL con bajo nivel de competencia. Los participantes se dividieron en un grupo experimental que recibió instrucción MPC y un grupo de control que recibió instrucción auditiva tradicional durante un período de doce semanas. Los resultados revelaron que el grupo experimental aumentó significativamente sus puntajes de competencia auditiva y conciencia metacognitiva de una manera más consistente y sólida que el grupo de control. Además, los alumnos que estuvieron expuestos a la instrucción MPC superaron al grupo de control en casi todos los aspectos de la conciencia metacognitiva. Los resultados también indicaron que los estudiantes menos hábiles podrían beneficiarse de un enfoque metacognitivo para la instrucción auditiva en el entorno educacional seleccionado. Se analizan las implicaciones pedagógicas.

Palabras clave: ciclo pedagógico metacognitivo; comprensión auditiva;enfoque basado en procesos; conciencia metacognitiva; aprendizaje de inglés como lengua extranjera.

1. Introduction

The importance of comprehension skills for successful communication has been underscored in the literature (Kobayashi, 2018; Matsumoto, 2011). According to Celce-Murcia and Olshtain (2000), the most frequently used communication skill in people's day-to-day interactions is listening. It is considered a "critical life competency" since it is the first communication skill that humans develop (Worthington & Fitch-Hauser, 2018, p. 4). In second language (L2) learning settings, listening comprehension is regarded as one of the most effective activities to learn a language (Nation & Newton, 2020). Despite its important communicative role in the learning process, listening has been the most neglected and undervalued skill in language teaching (Goh & Vandergrift, 2022). Additionally, many L2 learners often regard it as a difficult language skill to master (Hasan, 2000). These outcomes are to a certain extent influenced by the teaching approach to which learners are exposed. Some teachers tend to equate teaching L2 listening comprehension with testing it (Graham, Santos, & Francis-Brophy, 2014), which emphasizes a product-oriented focus (Nazari, 2018).

Listening comprehension instruction typically involves listening to recordings and providing answers to comprehension questions that seek to elicit how much (or how little) has been understood. This approach increases anxiety, which in turn hinders the development of listening comprehension strategies (Goh & Vandergrift, 2022). Thus, it is necessary to assess the impact of more strategic approaches that can enhance listening comprehension development. Vandergrift (2004, 2007) originally proposed a metacognitive approach to listening comprehension that included pedagogical stages through a process-based approach. This approach allows learners to monitor their own cognition and thus control their learning behavior by means of a metacognitive pedagogical cycle (MPC; Goh & Vandergrift, 2022). The MPC is supported by evidence suggesting that highly skilled listeners use a repertoire of metacognitive strategies to regulate their listening process (Goh & Vandergrift, 2022; Vandergrift, 2003). However, this approach needs to be assessed with a focus on low proficiency learners in English as a Foreign Language (EFL) contexts where listening tasks are less prominent in the classroom and are more product-based in nature. Therefore, the present study sought to assess the impact of a process-based metacognitive pedagogical cycle on the listening comprehension and listening metacognitive awareness of low-proficiency adult EFL learners. The study contributes to research describing how adult EFL learners may benefit from a systematic approach that implicitly teaches L2 listening strategies.[1] The research questions are as follows:

1. Does the metacognitive pedagogical cycle (MPC) increase the listening proficiency of adult EFL learners?
2. Does the MPC increase the metacognitive awareness of adult EFL learners?

2. Literature Review

2.1. L2 listening instruction

Listening is an active mental ability that helps individuals understand the world around them and is one of the necessary components to ensure successful communication (Rost, 2016). Moreover, listening is considered to be a complex process due to its psychological – i.e., cognitive – and social – i.e., interactive – nature (Bueno, Madrid, & McLaren, 2006). Vandergrift and Tafaghodtari (2010) recognized the complexity of the skill and the role it has in assisting learners to understand spoken L2 input and facilitating the development of the other language skills. Three types of second language listening instruction approaches are identified by Goh and Vandergrift (2022): Text-oriented, communication-oriented and learner-oriented. Text-oriented instruction drew from grammar translation methodologies (Shintani & Wallace, 2014). More specifically, this approach to listening instruction

prompted learners to recognize and understand the different components of listening input such as sounds and phonological features of key words and phrases (Goh & Vandergrift, 2022). The activities carried out in the approach involved teachers reading aloud written texts as learners completed dictation exercises or cloze-type tasks (Shintani & Wallace, 2014). Learners were given comprehension tasks only after they had listened to a passage, so they typically did not know the purpose of the activity beforehand, which hindered listening development (Brown, 2006). The search for more successful second language learning experiences prompted the emergence of the communicative language teaching (CLT) methodology in the 1970's (Goh & Vandergrift, 2022), which signified a reformulation of the current approaches to syllabus design and methodology at the time (Richards, 2006). Regarding listening instruction, authentic listening materials and pre-listening activities were included to activate prior topic knowledge in the listening task (Shintani & Wallace, 2014). Although both speaking and listening were included in CLT activities, Goh and Vandergrift (2022) argued that listening was often "the sleeping partner in the business of oral communication" and that "little attention was given to learner efforts at listening outside the classroom" (p. 10). This gains particular relevance in EFL settings, where learners do not usually engage in out-of-classroom interaction with L2 speakers. Thus, the focus was shifted to learner-oriented instruction, and the skills and strategies employed by successful listeners (Shintani & Wallace, 2014). Learners were instructed on "how to listen" by means of scaffolded listening practice and teacher modeling (Goh & Vandergrift, 2022). The approach is validated by early research on listening strategies suggesting that successful listeners used a more varied repertoire of listening strategies than unsuccessful learners (Goh, 2000; Vandergrift, 2003). Particularly, successful listeners frequently use metacognitive strategies, which in turn was found to have a positive impact on learners L2 listening development (Goh, 2008; Vandergrift, Goh, Mareschal, & Tafaghodtari, 2006; Vandgergrift & Tafaghodtari, 2010). Although learner-oriented instruction has become an important feature in language curriculum and more recognition has been given to its status and development (Goh & Vandergrift, 2022), the "listen - answer - check" pattern is still followed by many listening instructors (Siegel, 2013).

Goh and Vandergrift (2022) highlight three aspects that help understand the process of becoming a competent listener in a broad range of contexts. First, the cognitive model of language processing identifies two perspectives on listening: bottom-up and top-down processing (Brown, 2006; Lynch, 2006). Brown (2006) and Goh and Vandergrift (2022) refer to bottom-up listening comprehension processing as the segmentation of the sound stream, word meanings, and discourse markers into meaningful units to interpret the message. As for top-down listening comprehension processing, learners use prior knowledge and experiences to activate a conceptual

framework for understanding the message by forming hypotheses and modifying them to match new incoming information (Goh & Vandergrift, 2022). Learners will need to deploy and efficiently coordinate both bottom-up and top-down processing skills to achieve successful L2 listening (Brown, 2006). Proficient listeners are able to control and regulate top-down and bottom-up processing through their use of metacognitive knowledge, which in turn enhances effective text comprehension (Goh & Vandergrift, 2022). Second, listeners rely on a set of knowledge sources (namely, prior knowledge, linguistic knowledge, pragmatic knowledge, and discourse knowledge) in order to understand and make sense of what they hear (Vandergrift, 2015). Prior knowledge is stored in long-term memory (Vandergrift, 2015) and allows listeners to "match what they hear (the linguistic input) with what they know about how things work in the world (their prior knowledge)" (Goh & Vandergrift, 2022, p. 27). This connection can be nurtured in learners by means of pre-listening activities that help them predict and monitor comprehension (Vandergrift & Goh, 2022). Linguistic knowledge – i.e., vocabulary knowledge, phonological knowledge (phonemes, stress, intonation, and speech modifications such as assimilation and elision), and syntactic knowledge (grammar) – is considered fundamental for listening comprehension (Vandergrift & Goh, 2022). In fact, vocabulary has been found to be a strong predictor of effective L2 listening (Vandergrift, 2015). Pragmatic knowledge in listening allows the learner to interpret the speaker's intended message by going beyond the literal meaning of a word (Vandergrift, 2015). Second language listeners need to draw inferences when certain speech acts (e.g., requests) are presented with figurative language and culture-bound content that is closely related to sociocultural and sociolinguistic knowledge (Goh & Vandergrift, 2022). Finally, discourse knowledge refers to comprehension at the level of text organization, which can be combined with prior knowledge (transferred from the learner's L1) so that learners can anticipate the type of information that might be later accessed in a listening task (Vandergrift, 2015) and the type of questions they might be asked. Goh and Vandergrift (2022) state that these knowledge sources "are stored in the listener's long-term memory in the form of schemata (e.g., complex mental structures that group all knowledge concerning a concept)" (p. 19), and that the information retrieved from them plays a role in how cognitive processing is achieved and how successful it is. Third, the environmental features of listening are also relevant to how the process is carried out. Interactive listening refers to "the ability to interact with speakers of the target language in social situations, such as conversations" (Goh & Vandergrift, 2022, p. 29). This type of listening has transactional, interactional, or social goals that are met through successful interactions (Goh & Vandergrift, 2022). One-way listening – i.e., listening to the radio – is only transactional in nature. Its main goal is message or content-oriented (Gu, 2018), and does not require learners to interact with a speaker (Goh & Vandergrift, 2022). Listeners who take part in

either one-way or interactive listening make use of prior (i.e., top-down) knowledge to decode meaning, and linguistic (i.e., bottom-up) knowledge to distinguish sounds that are familiar. This "parallel processing" allows learners to successfully perceive, interpret, and respond to the information being heard (Lynch & Mendelsohn, 2020).

2.2. Metacognition and listening instruction

Metacognition can be defined as "a set of processes an individual uses in monitoring ongoing cognition so as to effectively control his or her own behavior" (Rhodes, 2019, p. 1). This definition positions the individual as the agent who carries out a behavior and, simultaneously, reflects on that behavior. As Goh and Vandergrift (2002, p. 88) state, metacognition allows us to be "agents of our own thinking". This critical and reflective approach to one's thinking "may result in making specific changes in how one learns" (Anderson, 2012, p. 170). Goh and Vandergrift (2022) view metacognition as comprising metacognitive knowledge, metacognitive experience, and strategy use. Metacognitive knowledge allows learners to "select, evaluate, revise, and abandon cognitive tasks, goals, and strategies considering their relationships with one another and with one's own abilities and interests with respect to that enterprise" (Flavell, 1979, p. 908). Flavell (1979) identified three types of knowledge about cognition: person, task, and strategy. Person knowledge refers to how an individual learns and how certain personal factors affect their learning, such as their motivations, strengths, and weaknesses. Task knowledge consists of learners' knowledge of features of different types of real-life listening tasks, such as discourse, grammatical, and phonological features of the words and phrases in the spoken text. Finally, strategy knowledge refers to knowledge of the strategies that can be deployed to complete a specific listening goal or to improve general listening ability (Goh & Vandergrift, 2022). Thus, language learners demonstrate various degrees of metacognitive knowledge about themselves as L2 listeners and the listening process (Graham, 2006; Goh, 1997). Metacognitive experience emerged from Flavell's (1979, p. 906) idea that thinking and learning are accompanied by other "conscious cognitive and affective experiences". These experiences reflect the individual's response to the task before it is solved or the outcome of monitoring the resources they require (e.g., feelings, estimates, and ideas) to solve the task (Akama, 2006). Goh and Vandergrift (2002, p. 90) state that metacognitive experience is useful to learners if it "leads to some productive application of strategies or further understanding about the task, themselves, and/or the world around them". In relation to strategy knowledge, increased interest in nurturing learner autonomy by means of strategy awareness has been documented over the past decades. Goh and Vandergrift (2022, p. 91) define strategy use as "the deployment of specific procedures or actions to make learning easier, faster, more enjoyable, more self-regulated, more effective, or more transferable to new situations".

Therefore, strategy knowledge can be supported by increasing awareness of the ways in which a strategy can be used, and the appropriate time for it to be deployed. Moreover, using strategies prompts cognitive processing, which can lead to deeper learning and improved performance, especially among learners who are struggling with listening comprehension tasks (Wenden, 1998).

2.3. Metacognitive processes and the metacognitive pedagogical cycle (MPC)

Teachers in many EFL contexts rely mostly on approaches whose main focus is placed on assessing learners' ability to answer listening comprehension questions rather than on the process that those learners undergo to achieve that comprehension (Goh 2010; Graham, Santos, & Vanderplank, 2011). Listening instruction research has sought to change its focus from product-based listening (listening to learn) to process-based listening (learning to listen), which has signified a shift toward metacognitive strategies (Lynch & Mendelsohn, 2020). Metacognitive instruction prompts teachers to act as guides, instructing learners on how to listen by enhancing their strategy knowledge and strategy use, and how to work on their listening without teacher support beyond the classroom (Kobayashi, 2018). Hence, a metacognitive process-based approach can assist learners in shifting their focus from listening performance to listening skill development (Bozorgian, 2014) and, honing their ability to use appropriate strategies (Goh, 2008; Maftoon & Alamdari, 2016).

Goh and Vandergrift (2022) state that the goals of a metacognitive approach to listening are to develop learners who understand the challenges of L2 listening, think about and increase their learning development individually and in collaboration, make plans to self-direct and manage their own listening progress, make a proper use of listening strategies, and display self-efficacy and motivation toward listening. Several metacognitive processes underlie these goals. Learners typically have a purpose for listening (e.g., listening to a song, having a conversation), and this purpose shapes the way they listen and helps them listen more effectively (Brown, 2006). Thus, listeners "prepare themselves for what they will hear and what they are expected to do, instead of barreling into the activity without thinking" (Goh & Vandergrift, 2022, p. 116). Then, learners must monitor their comprehension by detecting gaps in their knowledge or identifying knowledge that is deficient. Learners can thus avoid misconceptions that hinder true understanding (Dunlosky & Rawson, 2012; Roelle, Nowitzki, & Berthold, 2017). When learners encounter comprehension difficulties, they can engage in remediation planning in a subsequent step (Glogger et al., 2012). Learners must also solve comprehension problems while performing a listening task in order to reconstruct a text's main points and relevant details (Goh & Vandergrift,

2022). Learners finally evaluate whether the adjustments that were made helped them understand the listening text, which allows them to identify weaknesses in the listening process that can be avoided in future tasks. These metacognitive processes do not necessarily follow a linear pattern, as they can interact in various ways to construct meaning and comprehension (Goh & Vandergrift, 2022). In order to address these aspects by means of a pedagogical approach, Vandergrift (2004, 2007) and Goh and Vandergrift (2022) presented a metacognitive pedagogical cycle (MPC) to guide L2 learners through their metacognitive processes. The MPC involves conscious attention to one's thoughts and knowledge construction (Roelle et al., 2017) by means of five stages: Planning/predicting, first verification, second verification, final verification, reflection and goal setting. Theoretically, the metacognitive pedagogical cycle draws from knowledge about comprehension instruction derived from cognitive psychology, implicit learning, and self-regulation (Vandergrift & Tafaghodtari, 2010). It contains top-down and bottom-up dimensions of listening that can help learners increase their awareness of one-way listening processes, and nurture the creation of metacognitive knowledge, which is a key component of self-regulation and listening comprehension (Goh & Vandergrift, 2022; Vandergrift, 2007). As Roussel et al. (2017, p. 42) state, during the listening comprehension tasks self-regulated language learners are able to "plan, monitor, solve comprehension problems, and evaluate their comprehension in real time". The repeated use of the cycle with a variety of texts allows listeners with different ability levels to make progress and refine their comprehension in their own manner and at their own pace (Cross, 2010). The methodology allows them to access knowledge about listening processes by generating and verifying hypotheses and by applying prior knowledge to offset gaps in understanding (Bozorgian, 2014). Furthermore, the approach has pedagogical value, as its implementation is straightforward and can be carried out with learners of different ages, levels, and educational contexts (Cross 2010; Vandergrift, 2004).

2.4. Empirical research on the metacognitive pedagogical cycle (MPC)

Research conducted in diverse contexts has evaluated the metacognitive approach with a focus on listening outcomes and metacognitive awareness. Vandergrift and Tafaghodtari (2010) investigated the effects of the MPC on 106 French as a second language learners over a semester. They asked students in the experimental group to listen to texts through MPC-guided instruction, while learners in a control group listened to the same texts with regular instruction. Metacognitive development in L2 listening was assessed by means of the Metacognitive Awareness Listening Questionnaire (MALQ), an instrument that includes five factors based on metacognitive processes, namely, planning and evaluation, problem solving, directed attention, mental translation, and person knowledge. Results revealed

that the experimental group significantly outperformed the control group on a comprehension test and evidenced growth in problem solving and mental translation. In addition, listeners who were less skilled made more listening gains in the experimental group than highly skilled listeners. Similar results were reported by Bozorgian and Alamdari (2017), Rahimirad and Shams (2014), and Wang (2015) in EFL contexts. Positive responses to process-based MPC instruction when compared to regular product-based instruction were also reported by Mahdavi and Miri (2017) for listening comprehension and metacognitive awareness in high-beginner EFL learners. In a small-scale study, Cross (2010) measured the impact of the MPC on 20 Japanese advanced adult EFL learners. Pre- and post-test scores suggested that the MPC approach had a stronger impact on less-skilled listeners and that these gains were less prominent at higher skill levels.

In more recent studies, research on metacognitive instruction and the MPC has yielded further evidence of their effectiveness. Becker (2021) investigated the instructional benefits of metacognitive strategies in improving listening comprehension and increasing the automaticity of listening processes. Sixty-nine French as a foreign language learners were assigned to an experimental (metacognitive instruction) or a control group condition. Results revealed a significant improvement in the experimental group that was influenced by initial listening proficiency and metacognitive awareness. That is, low proficiency learners made more listening gains in both conditions, and learners in the experimental group who displayed low starting metacognitive awareness were able to make more listening gains. The author concludes that the baseline metacognitive awareness reported by learners can impact listening comprehension gains over time, which adds support to the idea that nurturing metacognition is beneficial for listening. Taghizade et al. (2022) evaluated the impact of a metacognitive intervention on the listening comprehension and metacognitive awareness of upper-intermediate introvert EFL learners. Their results indicated that the MPC-based intervention significantly enhanced introvert EFL learners' listening comprehension and metacognitive awareness, while learners reported that they were more capable of recognizing their weaknesses and strengths, their anxiety decreased, and their motivation, attention to task, and self-confidence increased. In line with Becker (2021) and Vandergrift and Tafaghodtari (2010), a stronger impact of the metacognitive approach on the listening gains of less skilled learners was reported by Chero (2023), who divided 20 young learners enrolled in an A1 general English course into two groups: skilled listeners and less-skilled listeners. The author found that the intervention significantly increased the scores of less-skilled listeners, while the MALQ questionnaire data revealed that both skilled and less-skilled listeners made significant gains in two MALQ factors (person knowledge and strategy use). Although the number of participants was somewhat reduced for quantitative analysis,

the findings highlight the effectiveness of a metacognitive instruction approach in improving the listening performance of low proficiency learners. Overall, these studies have reported consistent evidence suggesting that metacognitive instruction increases L2 listening comprehension and metacognitive awareness in the EFL classroom. When learners' metacognitive awareness is increased through instruction, their listening comprehension and overall language proficiency can also be enhanced. Still, there is a lack of studies assessing the effectiveness of the MPC in less-skilled learners and in EFL contexts where listening tasks are less frequent in the classroom and more product-based in nature.

3. Methodology

3.1. Research design

To address the research questions, the present study employed a quasi-experimental research design to measure the effect of listening instruction that is based on the metacognitive pedagogical cycle (MPC) on learners' listening comprehension performance and metacognitive awareness. Participants were placed in an experimental group that received MPC instruction and a control group that received regular listening instruction for a period of twelve weeks. Pre- and post-TOEIC Bridge listening tests, together with pre- and post-Metacognitive Awareness Listening Questionnaires (MALQs) were administered to participants in both groups to assess listening comprehension and metacognitive awareness gains, respectively.

3.2. Participants and context

The participants in the study were 75 adult EFL students (20 females, 55 males) enrolled in the third semester of an elementary EFL course in 2022 at a professional institute in Santiago, Chile. These participants belonged to four intact classes that were divided into an experimental (n = 38) and a control (n = 37) group. Participants in both groups received six hours of EFL instruction per week. The teacher delivering the classes in the experimental group was trained in the MPC and received support to plan the listening lessons. The teacher was asked to complete the treatment in a 12-week period, with 90 minutes of MPC instruction per week. The institute where the study took place is constituted as a private non-for-profit foundation that offers both technical and professional careers. Its EFL department serves more than 70.000 students in diverse technical and professional programs. Teachers follow a communicative approach to help EFL learners communicate in the L2 orally and in written form. EFL lessons are typically delivered in classrooms that do not exceed 20 students, and students are able to work with customizable, high-quality, and authentic learning materials from well-known publishers. EFL students sit the TOEIC Bridge

once they finish their EFL courses (elementary and intermediate) and are expected to reach CEFR (Common European Framework Reference for Languages) level B1 after four semesters.

3.3. Instruments

3.3.1. TOEIC Bridge listening section

The listening section of the TOEIC Bridge was administered before and after the 12-week treatment period. This instrument offers reliable global benchmarks for English language proficiency levels among individuals aged 15 and above, whose native language is not English, particularly at beginner and pre-intermediate stages. The listening comprehension segment comprises 50 questions categorized into three question formats: photographs, brief conversations, and question-answer sets. Test-takers are required to listen to spoken content, including statements, inquiries, or short interactions, and choose the accurate response from multiple-choice options. The participants in the two groups were similar in terms of baseline listening proficiency (CEFR level = A1). A *t*-test did not find significant differences (p = .548) between the baseline TOEIC Bridge listening means for the experimental group (M = 19.61) and the control group (M = 18.76).

3.3.2. Metacognitive Awareness Listening Questionnaire (MALQ)

Vandergrift et al. (2006) created the Metacognitive Awareness Listening Questionnaire (MALQ) utilizing Flavell's (1979) framework of metacognition. The purpose of the instrument is to evaluate the metacognitive awareness of second language (L2) listeners and their self-reported utilization of listening strategies. It consists of 21 statements in a six-point Likert scale ranging from "strongly disagree" to "strongly agree". The statements are subcategorized into the five components of metacognitive strategies proposed by Vandergrift et al. (2006) and Goh and Vandergrift (2022): Planning and evaluation (1, 10, 14, 20, and 21), directed attention (items 2, 6, 12, and 16) person knowledge (3, 8, and 15), problem solving (5, 7, 9, 13, 17, and 19) and mental translation (items 4, 11, and 18). Items 3 and 8 in person knowledge and item 16 in directed attention are reverse coded to reduce response bias. All the items in mental translation are also reverse coded since they address online mental translation strategies (e.g., item 4: "I translate in my head as I listen") that should be avoided by L2 learners because they are considered "an inefficient approach to listening comprehension" (Vandergrift et al., 2006, p. 450). The MALQ instrument has been validated through extensive use in related research (Becker, 2021; Goh & Hu, 2013; Taghizade et al., 2022). Reported internal reliability estimates (Cronbach's α) for the instrument are good and range from 0.68 to 0.78 (Vandergrift et al., 2006), which are

similar to the values obtained in the present study (Cronbach's α ranging from 0.65 to 0.77). The MALQ was translated into the learners' first language (Spanish) to ensure comprehension and was then piloted with 40 EFL students in similar EFL courses to identify confusing items. Student feedback was useful to adjust the verb forms and concepts in the L1 translation in some items. For example, some students pointed out that the L1 translation for item 15 "I don't feel nervous when I listen to English" was too vague, as they did not know the type of listening activity the item was referring to. Thus, the L1 translations of several items were modified to include the idea of listening to audio in the context of learning activities carried out in an EFL classroom. Apart from these minor translation issues, no further comprehension issues with the items or the instructions were reported. The translated MALQ items (Oyarzún, 2019) can be found in appendix A.

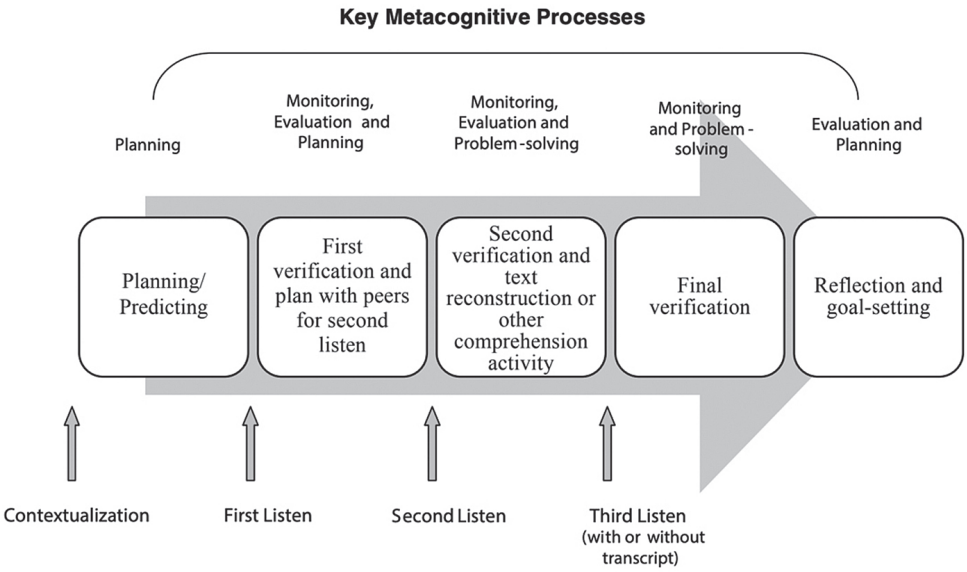
3.4. Instruction approaches

The coursebook used during the 12-week period in both the experimental and control groups was "American English File" (Latham-Koening & Oxenden, 2018). In the experimental group, five listening passages from the units being covered during the intervention weeks were selected and completed following the MPC listening guide worksheet adapted from Goh and Vandergrift (2022). Students in the control group completed the same listening activities but focused on the product-based activities included in the coursebook.

3.4.1. Experimental group

Over the 12-week duration of the study, participants regularly attended their mandatory English classes, during which one 90-minute session per week was dedicated to administering the intervention. Within these sessions, participants engaged with the five listening texts aligned with the topics covered in the English course textbook. Every treatment session was structured following the metacognitive pedagogical cycle (MPC) proposed by Vandergrift (2004, 2007) and Goh and Vandergrift (2022). Figure 1 illustrates the stages within the MPC and how they correspond to the primary metacognitive processes involved in listening.

Figure 1: Stages and processes in the metacognitive pedagogical cycle for listening instruction (Goh & Vandergrift, 2022)



The five stages were incorporated in the lessons plans for the experimental group. In the "planning/predicting" stage, listeners made decisions about their listening task and the steps they could take to make it successful (e.g., students predicted the nature of the information and the potential words they could hear). Then, during the "first verification stage," students verified their initial hypotheses and compared their understanding with that of their peers. In the "second verification stage," students focused on identifying missing information they had not deciphered earlier and resolved any discrepancies in comprehension. The "final verification stage" allowed students to further reconstruct the main points and crucial details of the text. Finally, in the "reflection and goal-setting" stage, students corrected as required, decided on the important details still needing resolution, discussed the strategies used to tackle comprehension issues, and established objectives for their next encounter with a listening task. Appendix B contains a sample lesson plan (Oyarzún, 2019) portraying the MPC stages and the activities carried out.

3.4.2. Control group

Control group participants were asked to listen to the same texts and for the same number of times as the students in the experimental group (three times), but they were not exposed to the MPC stages. They did not receive a listening guide

and did not have the opportunity to verify their predictions or collaborate with peers between listening rounds. They did not have time to review the information that was understood between listening rounds and did not receive a text script to assess their overall listening performance. Moreover, they were not asked to reflect on encountered difficulties or future listening tasks. Instead, they underwent traditional coursebook instruction involving product-based activities, following a conventional "listen-answer-check" approach. In each session, students listened to the text twice, taking notes of any information that was understood, followed by a third listening where they answered comprehension questions or completed charts with the information that they were able to decode. The teacher only intervened to verify task completion accuracy.

3.5. Data collection procedures and method of analysis

Before the study was conducted, informed consent from the participants was secured. They were informed about the characteristics of the intervention and were told that their personal details would not be disclosed and would be safely stored. Two weeks prior to the initial intervention and two weeks subsequent to the final intervention, students completed the listening section of the TOEIC Bridge as a pre-test and post-test, respectively. Thus, listening proficiency was assessed by two different versions of this test. As for the MALQ, the instrument was administered a week before the initial listening session and a week after the sessions in both groups ended. Descriptive statistics were computed for the TOEIC Bridge listening section and the MALQ data. To answer the first research question, a mixed 2x2 (time*listening condition) ANOVA was conducted with the TOEIC Bridge listening section scores. As regards the second research question, a series of mixed 2x2 (time*listening condition) ANOVAs were run with the MALQ components and the total MALQ scores. Data was examined for normality and homogeneity of variances by means of Shapiro-Wilk's tests and Levene's tests, respectively. The tests revealed that, overall, the data for all the variables did not severely depart from normality and displayed fairly equal variance in most instances.

4. Results

4.1. Descriptive statistics for the TOEIC Bridge listening section

Table 1 reports descriptive statistics for the listening section of the TOEIC Bridge. The means for participants in the experimental group prior to the intervention (M = 19.61; SD = 6.08) and following the intervention (M = 27.16; SD = 5.38) indicate a consistent improvement after the treatment. The overall means in the control group before (M = 18.76; SD = 6.11) and after the intervention (M = 20.68; SD = 6.84) suggest rather modest listening gains.

Table 1: Descriptive statistics for TOEIC Bridge listening data

Instrument	Group	Statistic	
TOEIC Bridge listening pre-test	Experimental	Mean	19.61
		SD	6.08
	Control	Mean	18.76
		SD	6.11
TOEIC Bridge listening post-test	Experimental	Mean	27.16
		SD	5.38
	Control	Mean	20.68
		SD	6.84

4.2. Descriptive statistics for the MALQ scores

Table 2 presents descriptive statistics for the overall MALQ and its components pre- and post-intervention.

Table 2: Descriptive statistics for the MALQ and its components

MALQ components	Group	N	Pre MALQ		Post MALQ	
			M	*SD*	M	*SD*
Planning and Evaluation	Experimental	38	4.1	.94	5.19	.44
	Control	37	3.97	.85	4.15	.82
Directed Attention	Experimental	38	4.4	.83	4.74	.64
	Control	37	4.03	.73	4	.66
Person Knowledge	Experimental	38	2.78	.98	3.13	.77
	Control	37	2.41	1.02	2.65	.86
Mental Translation	Experimental	38	2.8	.93	3	.90
	Control	37	2.77	1.2	2.59	1.18
Problem-solving	Experimental	38	4.68	.74	5.19	.46
	Control	37	4.54	.84	4.47	.76
Total MALQ	Experimental	38	3.75	.40	4.25	.24
	Control	37	3.54	.36	3.57	.37

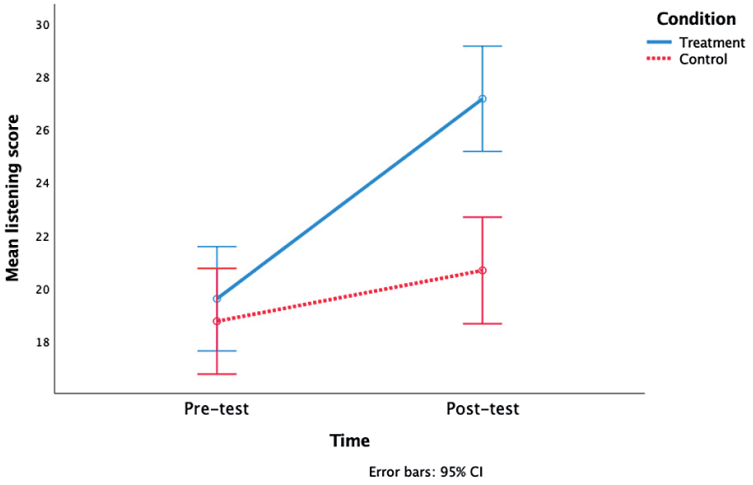
The mean scores for the overall MALQ before (M = 3.75; SD = 0.40) and after (M = 4.25; SD = 0.24) the treatment was delivered in the experimental group indicate an increase in participants' metacognitive awareness. Conversely, this trend was not observed in the control group, where MALQ mean scores before the intervention (M = 3.54; SD = 0.36) and after the intervention (M = 3.57; SD = 0.37) remained relatively consistent. Regarding the components, participants in the experimental group consistently improved their metacognitive awareness in the five components. This contrasts with the data for the control group, as the post-test MALQ means were lower than the pre-test data in directed attention, mental translation, and problem-solving.

4.3. Inferential statistics

*4.3.1. Mixed 2x2 (time*listening condition) ANOVA for TOEIC Bridge listening section data*

In order to assess the impact of the MPC on listening proficiency, a mixed 2x2 (time*listening condition) ANOVA was conducted with the TOEIC Bridge listening section data. Results revealed a significant time*listening condition interaction [$F(1, 73) = 51.01$, $p < .001$, $\eta_p^2 = .41$]. Planned comparisons indicated that participants made significant gains in both the experimental group [$t(37) = -11.705$, $p < .001$, $d = 1.9$, 95% CI: -8.86 to -6.25] and the control group [$t(36) = -4.304$, $p < .001$, $d = 0.71$, 95% CI: -2.82 to -1.02], but the effect size for the former was very robust. Figure 2 displays this trend.

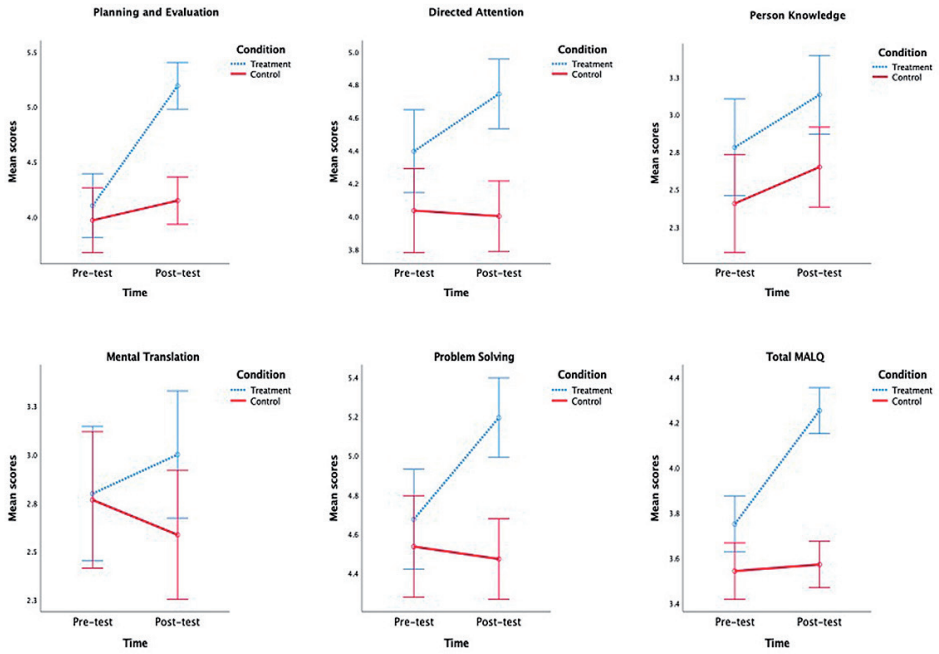
Figure 2: Time*listening condition interaction for TOEIC Bridge listening data



*4.3.2. Mixed 2x2 (time*listening condition) ANOVAs for MALQ data*

The effect of MPC instruction on metacognitive awareness was measured by means of a series of mixed 2x2 (time*listening condition) ANOVAs run with the components and the total scores for the MALQ instrument. For the total MALQ scores, a significant time*listening condition interaction [$F(1, 73) = 60.31$, $p < .001$, $\eta_p^2 = .45$] was found. Similar significant interactions were found for planning and evaluation [$F(1, 73) = 46.48$, $p < .001$, $\eta_p^2 = .39$], directed attention [$F(1, 73) = 11.715$, $p < .005$, $\eta_p^2 = .14$], mental translation [$F(1, 73) = 11.497$, $p < .005$, $\eta_p^2 = .14$], and problem solving [$F(1, 73) = 33.600$, $p < .001$, $\eta_p^2 = .32$]. The only component that did not display significant differences between participants in both conditions was person knowledge [$F(1, 73) = .564$, $p > .05$]. Still, participants in both groups made significant gains in the person knowledge component, so both types of instruction were beneficial for students in this aspect. Thus, with the exception of person knowledge, participants in the treatment group displayed significantly higher listening metacognitive awareness in the post-test than participants in the control group. Figure 3 displays the significant interaction found among the MALQ components.

Figure 3: Time*listening condition interactions for MALQ data (95% CIs)



5. Discussion

5.1. Impact of the MPC on EFL learners' listening outcomes

Results for the mixed ANOVA run with the TOEIC Bridge listening section revealed that the experimental group significantly increased their overall mean scores in a more consistent and robust manner than the control group. The size effect reported suggests that learners who are exposed to MPC instruction make significantly more listening gains than learners who receive regular listening instruction. This is in alignment with previous empirical findings addressing the effect of the MPC on listening performance (Bozorgian & Alamdari, 2017; Cross, 2010; Mahdavi & Miri, 2017; Rahimirad & Shams, 2014; Taherkhani, Aliasin, Khosravi, & Izadpanah, 2022; Vandergrift & Tafaghodtari, 2010). Employing a guided practice approach in the listening process, along with involving learners in the metacognitive processes influencing their learning, facilitated the development of a series of cognitive and metacognitive activities in the listening process, which led to substantial improvements in listening skills. The results also contribute to the evidence suggesting that less skilled learners can benefit from a metacognitive approach to listening instruction (Becker, 2021; Chero, 2023; Vandergrift & Tafaghodtari, 2010), and that listening gains can take place in EFL settings that do not present optimal conditions for learning outside the classroom. The MPC method guided participants in the experimental group to develop substantial implicit metacognitive understanding of L2 listening, which allowed them to create a more explicit view of process-based listening when facing a listening task. As Goh and Vandergrift (2022, p. 137) state, a metacognitive approach to listening "helps learners attend to implicit processes in their listening and make their knowledge of these processes more explicit", and these insights were key to substantially increase listening comprehension gains when compared to the control group. Although learners in the control group made some gains in the TOEIC Bridge post-test (not an unexpected finding, as with any type of learning approach) the product-based goals that were accomplished in this condition focused on teaching learners how to answer test-like comprehension questions (Goh, 2008), which prevented them from making more evident listening gains. Therefore, the results underscore the impact of a metacognitive approach on significantly increasing listening comprehension gains in low-proficiency EFL learners.

5.2. Impact of the MPC on EFL learners' listening metacognitive awareness

The mixed ANOVAs conducted using the data from the MALQ indicated a significant divergence in metacognitive awareness scores between the experimental

and control groups subsequent to the intervention. Participants in the experimental group made significant gains in all five categories of the MALQ. Furthermore, the experimental group significantly outperformed the control group in all the components of the MALQ, with the exception of person knowledge, where both groups increased their metacognitive awareness. Perhaps, after learners in the control group completed the MALQ pre-test, they noticed opportunities to reflect on their listening and understand the factors that influenced their learning (Vandergrift & Tafaghodtari, 2010). This may have allowed them to lower their anxiety and somewhat increase their self-concept. This increase was noticeable but not strong, as low-proficiency language learners tend to develop beliefs about their proficiency based on their performance in listening tasks (Goh & Vandergrift, 2022). It must be noted that learners in both groups displayed the lowest means in the person knowledge component, suggesting that they felt that listening was somewhat difficult for them. The significant awareness increase in the mental translation category for learners in the MPC group is consistent with Maftoon and Alamdari (2016), Robillos (2019), and Tanewong (2018), who reported learners' increased awareness of mental translation strategy avoidance. The MPC approach helped low proficiency learners to become aware of unproductive online mental translation strategies (Vandergrift et al., 2006) that should be avoided as learners develop greater automaticity in word recognition and in the processing of text and meaning. The planning and evaluation component also displayed significant differences between both groups, which is in line with Borzogian's (2014) finding that metacognitive instruction can encourage learners to plan and reflect on possible comprehension issues and envision alternatives to enhance their listening skill. Similar significant differences were reported for problem solving, whose focus on implicit learning through task performance (Vandergrift & Tafaghodtari, 2010) increased the scores for the component in the MPC group. Finally, the experimental group significantly outperformed the control group in the directed attention component, in line with research reporting that metacognitive instruction prompts learners to carefully engage in the process while performing listening tasks (Rahimirad & Shams, 2014). To sum up, the metacognitive pedagogical cycle assessed in this 12-week study yielded results that highlight the effectiveness of the approach in increasing listening comprehension performance. Moreover, learners who were exposed to the MPC approach significantly increased their metacognitive awareness in all components and outperformed the control group in all components but one (personal knowledge). Results also confirm that a metacognitive approach to listening instruction benefits less skilled learners.

6. Conclusion

The current research explored how the metacognitive pedagogical cycle (MPC) impacts adult EFL learners' listening proficiency and metacognitive awareness. Results indicated that an instruction approach such as the MPC can increase listening comprehension gains when compared to regular listening instruction, and that the metacognitive awareness of the learners exposed to the approach significantly increased after the instruction period. These findings emphasize the benefits of implementing metacognitive instruction to increase listening comprehension and metacognition in low proficiency EFL learners. Moreover, the study underscored the relevance of the MPC in developing learners' listening and metacognitive knowledge in EFL contexts that do not enable optimal conditions for learning outside the classroom and emphasize product-based listening exercises. While the study achieved its objectives, the design could have benefited from including a qualitative component to address affective factors such as anxiety, motivation, and self-efficacy, which also influence L2 learners' listening proficiency and enhance the efficacy of metacognitive teaching (Goh & Vandergrift, 2022).

There are pedagogical implications arising from the study. The results underscore a necessity for language teachers in EFL contexts to adopt more strategic approaches to teaching listening and gradually replace product-based instruction with strategic process-based instruction. Listening comprehension must be regarded as an intricate and dynamic process that needs to be understood prior to its integration with phonological components and speaking proficiency. That is, listening comprehension is a skill that is not automatically acquired as the learner engages in communicative activities (Bueno et al., 2006). Furthermore, teachers who test listening rather than teach it and equate "listening effectively" with "effective task completion" do little to help learners develop their listening competence (Graham et al., 2014, p. 53). Teachers need to be open to the exploration of practical approaches, techniques, and activities that include a focus on the process of listening and can be applied in their classrooms in order to help learners develop their listening comprehension more effectively (Graham et al., 2011). Vandergrift and Tafaghodtari (2010) warn that metacognitive instruction can become tedious if it is always carried out in the same way. Including different types of listening texts as part of MPC activities can maintain learners' engagement with the tasks as they complete metacognitive activities.

Teachers can use the MALQ instrument to help learners discover opportunities to reflect on the process of listening and thus raise their metacognitive awareness. If EFL teachers are able to gauge their students' metacognitive awareness, they can use this information to help students incorporate and revise metacognitive strategies and to

give them opportunities to reflect on their metacognitive knowledge. EFL teachers can increase metacognitive awareness through the activities and strategies they implement, which in turn will allow learners to discover and solve listening issues as they engage in listening tasks and develop a more planned approach to effectively extract information from listening input. It must be noted that learners exposed to MPC instruction were not taught listening strategies separately and explicitly in the study; strategy instruction was integrated with regular classroom listening activities (i.e., listening to texts passages from the students' textbooks) through the MPC so that listeners would pursue metacognitive strategies along with their listening tasks. This aspect adds to the practical and pedagogical benefits of including MPC instruction in the EFL classroom. Furthermore, metacognitive instruction encourages teachers to serve as guides that can effectively train learners how to listen and how to enhance their listening skills beyond the listening task itself. As teachers move away from assessing listening performance as a product and focus on listening skill development by means of appropriate metacognitive strategies, learners will become more aware of the complexities in L2 listening, will be able to strategize for self-directed management of their listening development, and will foster their confidence and motivation when undertaking listening tasks.

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Appendix A. Translated items in the Metacognitive Awareness Listening Questionnaire (MALQ; Vandergrift et al., 2006; Oyarzún, 2019)

1. *Antes de empezar a escuchar un audio, me hago una idea de cómo voy a escucharlo.*
(Before I start to listen, I have a plan in my head for how I am going to listen.)
2. *Me concentro más en el audio cuando tengo problemas al entenderlo.*
(I focus harder on the text when I have trouble understanding.)
3. *Considero que la comprensión auditiva en inglés es más difícil que leer, hablar o escribir en inglés.*

(I find that listening is more difficult than reading, speaking, or writing in English.)
4. *Traduzco mentalmente a medida que voy escuchando.*
(I translate in my head as I listen.)
5. *Utilizo las palabras que entiendo para adivinar el significado de las palabras que no comprendo.*
(I use the words I understand to guess the meaning of the words I don't understand.)
6. *Cuando pierdo la concentración, la recupero de inmediato.*
(When my mind wanders, I recover my concentration right away.)
7. *Mientras escucho, comparo lo que entiendo del audio con lo que sé sobre el tema.*
(As I listen, I compare what I understand with what I know about the topic.)
8. *Siento que la comprensión auditiva en inglés es un desafío para mí.*
(I feel that listening comprehension in English is a challenge for me.)
9. *Uso mi experiencia y conocimiento para ayudarme a entender.*
(I use my experience and knowledge to help me understand.)
10. *Antes de empezar a escuchar, pienso en audios similares que podría haber escuchado antes.*
(Before listening, I think of similar texts that I may have listened to.)
11. *Traduzco palabras claves mientras escucho.*
(I translate key words as I listen.)
12. *Trato de retomar la tarea cuando pierdo la concentración.*
(I try to get back on track when I lose concentration.)
13. *Mientras escucho, rápidamente ajusto mi interpretación del audio si me doy cuenta de que no está correcta.*
(As I listen, I quickly adjust my interpretation if I realize that it is not correct.)
14. *Después de escuchar, hago memoria de como escuché y pienso en qué podría hacer de manera diferente la próxima vez.*
(After listening, I think back to how I listened, and about what I might do differently next time.)
15. *No me pongo nervioso cuando escucho un audio en inglés.*
(I don't feel nervous when I listen to English.)
16. *Cuando me es difícil entender lo que escucho, me rindo y dejo de escuchar.*
(When I have difficulty understanding what I hear, I give up and stop listening.)
17. *Uso la idea general del texto para que me ayude a deducir el significado de las palabras que no entiendo.*
(I use the general idea of the text to help me guess the meaning of the words that I don't understand.)
18. *Mientras escucho, traduzco palabra por palabra.*
(I translate word by word, as I listen.)
19. *Cuando deduzco el significado de una palabra, hago memoria de todo lo que he escuchado anteriormente para ver si mi interpretación tiene sentido.*
(When I guess the meaning of a word, I think back to everything else that I have heard, to see if my guess makes sense.)
20. *Mientras escucho, periódicamente me pregunto si estoy satisfecho/a con mi nivel de comprensión.*
(As I listen, I periodically ask myself if I am satisfied with my level of comprehension.)
21. *Tengo un objetivo en mente mientras escucho.*
(I have a goal in mind as I listen.)

Appendix B. Sample listening activity lesson plan in MPC (experimental) group: CouchSurf around the world! (Oyarzún, 2019)

MPC Stage	Activities	Description	Duration
Planning/ predicting	Pre-listening activities.	• The teacher hands students a worksheet. • The teacher asks the students what they know about "couch-surfing". • The teacher asks students to look at different pictures in the worksheet and asks them to write different words, phrases or sentences they think they are related to couch surfing in the "Your predictions" chart. • The teacher asks different students about the words and phrases they thought of and writes them on the board. • The teacher tells students that they will listen to a person talking about what couch-surfing is.	Estimated time: 12-15 minutes
First verification and plan with peers for second listen	First listen	• The teacher tells students that they will listen to the audio for the first time and while they listen, they will have to check their ideas/predictions, checking off the information they predicted correctly. Students write down new information they may have understood from the text on the "First listen" column of the worksheet. • After the first listen, students work in pairs and compare their predictions and extra information understood. They discuss confusing points and disagreements to consider other logical options as well as identify points in the text that will require further attention during the second listening.	Estimated time: 10 -12 minutes
Second verification stage and text reconstruction or other comprehension activity	Second listen	• The teacher asks students to listen to the text for a second time. They try to resolve points of confusion raised during the first listen and complete the "Second listen" section of the worksheet with the new information that was understood. • After students finish taking their notes, the teacher engages all the participants in a group discussion to confirm their comprehension of the text and to enable them to share how they succeeded in understanding words and ideas.	Estimated time: 8-10 minutes
Final verification	Third listen	• Students verify points of earlier disagreement and make changes/corrections if necessary, in the 'Third listen' column of the worksheet.	Estimated time: 5-6 minutes

MPC Stage	Activities	Description	Duration
Reflection and goal setting	Post-listening activities	• The teacher hands students the transcript of the text. • The teacher asks students to individually self-assess their comprehension level by completing a chart in their worksheet writing the ideas they understood correctly, ideas they understood wrongly and ideas they did not understand at all. • The teacher checks students' answers with the whole group and asks different students about the ideas they wrote in the different columns. • The teacher leads a class discussion on the content of the text with the whole group, and the class reconstructs the text (this can be done either in English or Spanish since it is only a comprehension verification stage). • The teacher asks students to complete the "Reflections" section of the worksheet either in English or Spanish. • The teacher encourages students to engage in a class discussion about the difficulties they encountered and the strategies they used, as well as how to approach the next lesson (in either English or Spanish).	Estimated time: 15-20 minutes

[1] The present study's methodology was based on a MA thesis carried out by the co-author (Oyarzún, N. (2019). *The effects of a metacognitive, process-based approach in students' listening comprehension performance and metacognitive awareness* (Unpublished master's thesis). Universidad Andres Bello, Chile). The present study has included some aspects of the literature review that were discussed in the MA thesis, as well as the materials in the appendix. All aspects of data collection procedures, analysis, and discussion were conducted with a new sample of participants.