METACOGNITIVE STRATEGY INSTRUCTION ON LISTENING FOR L2 LEARNERS: A SCOPING REVIEW OF RESEARCH AND PRACTICE

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Abstract

Listening comprehension often receives insufficient attention in language learning, despite its importance in second language acquisition. Metacognitive strategy instruction has emerged as a promising approach to improve L2 listening learners' listening performance. To understand the effect of metacognitive strategy on L2 learners' listening performance and its relations with other areas of study, it is crucial to ask how it has been conceptualized, designed, and operationalized. This article is conducted as a scoping review, collecting, analyzing, and interpreting data gathered from the Scopus database using Preferred Recording Items for Systematic Review (PRISMA) guidelines. Fifteen publications from the *Scopus* database between 2014-2024 were analyzed, and the result was that the review demonstrated a diverse range of conceptualizations, designs, and evaluations. This study encourages future metacognitive strategy researchers to clearly define their theoretical frameworks, broaden research methodologies' application, and investigate the effect of MSI through multiple evaluations to obtain a more diverse range of perspectives.

Keywords: metacognitive strategy, L2 listening, scoping review

INTRODUCTION

Listening comprehension is recognized as a complicated process influenced by linguistic competence, such as phonetics, syntax, semantics, pragmatics, and discourse analysis, as well as strategic or non-linguistic knowledge, such as world knowledge [1], [2]. Despite its importance, listening often receives less attention in language classrooms compared to other skills. This neglect brings on challenges for both second language learners and teachers resulting in dissatisfaction, low performance, or lack of focus in the classroom [3], [4], [5]. The teacher usually provides insufficient support, leaving learners to develop the skill by themselves [6]. Due to limited exposure to listening materials, L2 learners often struggle to develop effective listening skills. In response, they adopt self-regulated strategies such as metacognitive strategies to enhance their listening comprehension.

One approach to addressing these difficulties is through the implementation of *Metacognitive Strategy Instruction* (MSI), a process-oriented pedagogical approach aimed at enhancing and facilitating the process of listening comprehension. MSI promotes the development of learners' awareness of the need to plan, monitor, and evaluate their listening processes [7], [8], [9]. Metacognitive strategies, as self-regulatory processes, can activate one's thinking while improving their performance in language learning especially among learners who are struggling [10]. Introduced by Flavell (1976), metacognition involves the conscious utilization of cognitive strategies to achieve learning objectives

by encompassing three key stages: activating a person's knowledge of cognitive processes related to the learning task, monitoring, and regulating these processes. In other words, metacognition involves consciously utilizing the metacognitive ability to select, plan, evaluate, and revise cognitive aims, strategies, and goals. According to Flavell (1979), by giving systematic instruction to learners, metacognitive strategy is beneficial in increasing metacognitive knowledge and metacognitive skills. As demonstrated in the work of Wenden (1987), who first implemented the concept of metacognition in second-language learning and teaching.

Recent frameworks, such as those proposed by Goh & Vandergrift (2012), emphasize the importance of metacognition for second language listening, portraying three key components (awareness, knowledge, and strategies). Metacognition helps learners increase their metacognitive awareness and knowledge through planning, monitoring, evaluating, and problem-solving in a self-regulated learning environment [14]. Goh (2008) conceived Metacognition as the key focus of metacognitive strategy instruction for L2 listening development. This concept was originally merged from metacognitive knowledge [11] and metacognitive strategies [15]. This integrated approach includes self-appraisal and self-regulation as two essential components of metacognition in the learning process reflecting the constructive nature of learning and emphasizing the crucial role language learners play in the process of learning to listen. Additionally, Goh & Vandergrift (2012) define metacognitive strategy instruction as pedagogical procedures designed to enhance learners' awareness of their listening processes. This is achieved by expanding learners' metacognitive knowledge about their listening capabilities, the intrinsic characteristics and challenges of listening tasks, and various strategies to improve listening. Moreover, this type of instruction can facilitate teachers to reconsider their teaching approach to listening as well as to help learners solve the listening complexity or enhance their listening performance [7][9].

Many studies have investigated the effectiveness of metacognitive strategy instruction (MSI) in enhancing listening comprehension among EFL learners. While the majority of the studies have confirmed that MSI significantly improves listening performance [16] [17] [18] [19], a few studies have shown contradictory findings. For instance, a few studies have failed to demonstrate noticeable improvements in listening ability after metacognitive strategy intervention [20], [21]. These inconsistencies may be due to variations in factors such as the duration of the intervention, or the specific strategies implemented. Additionally, differences in institutional settings, classroom size, or teacher expertise, could contribute to these findings.

Despite the growing body of research on MSI, there have been a limited number of review studies conducted on metacognitive strategy instruction. Recently, Siregar et al. (2024), conducted a systematic review investigating metacognitive strategies for enhancing self-regulated learning (SLR) in EFL adult learners. Although their study offered valuable insights into the broader role of metacognition in language learning, it did not specifically target listening comprehension, leaving a gap in understanding how MSI functions in this particular skill area. Similarly, Bozorgian & Shamsi (2023), conducted a systematic literature review on metacognitive instruction for listening development, analyzing 31 published between 2012 and 2022. Although their review offered important insights into various aspects such as methods, settings, and demographic characteristics, as well as the positive effects of MSI on listening performance, it lacked detailed descriptions of the strategies and intervention stages used in implementing MSI. Moreover, it remains unclear how outcomes were measured and whether reliable research instruments were employed to assess the effectiveness of these interventions. This leaves an important gap in understanding the practical application and evaluation of MSI in listening comprehension.

This review aims to address these gaps by offering a comprehensive scoping review of research on MSI for listening development, focusing on studies published between 2014 and 2024 which provide

more updated and diverse perspectives for both instructors and researchers. By limiting the scope to Scopus-indexed articles, this study ensures the inclusion of high-quality, peer-reviewed research. In addition, the review will explore not only the conceptualization of MSI but also how specific intervention stages were implemented and evaluated using validated research instruments. This approach provides a more refined and structured analysis, offering insights into both the effectiveness and the practical application of MSI in various learning contexts. Ultimately, this study will contribute a clearer understanding of how MSI interventions are carried out and measured, which can guide future research and practice in this area. The use of a scoping review methodology, as suggested by Munn et al. (2018), allows for a more comprehensive mapping of the available evidence, highlighting the gaps in existing studies and pointing to areas where further research is needed.

METHOD

This study is a scoping review, which summarizes the significant aspects and methodologies used in primary studies on a certain issue [24]. Peters et al. (2021), proposed that a systematic scoping review should consist of 11 essential elements: a suitable title and clear research questions, specific inclusion criteria, defined participants (such as second language learners), the main concept of the review, the specific context that the review addresses, types of evidence sources, a well-defined search strategy, a systematic process for screening and selecting relevant studies, extracting data from the included studies, analyzing the data, and presenting the results. Consequently, this study carried out and assessed this scoping review using these 11 fundamental elements.

This present scoping review followed the recent guidelines suggested by Peters et al. (2021) and the PRISMA guidelines for conducting a comprehensive search and selecting appropriate articles (see Figure 2). The study also illustrated the literature review process using a flow chart [26] and used the PICOD framework to address explicit questions by considering the participants, interventions, comparisons, outcomes, and designs.

1.1. Research question design.

This scoping review on metacognitive strategies and instructions for L2 listening focuses on research and practice reflected on these research questions:

1. How is metacognitive strategy instruction for L2 listening conceptualized?
2. How is metacognitive strategy instruction for L2 listening designed?
3. How is metacognitive strategy instruction for L2 listening evaluated?

1.2. Inclusion criteria

Specified criteria for inclusion and exclusion were developed in preparation for this literature review. The author conducted a comprehensive literature search through the *Scopus* database, limiting the results to 2014 through 2024. The *Scopus* database was chosen because of its high credibility and only high-quality articles were accepted. The specific requirements for inclusion and exclusion are detailed in Table 1.

Inclusion requirements	Exclusion requirements
Written in English	Written in other languages
Full text should be available (concerning a theory/ model, participants' demography, their learning activities, material and instruments, and outcomes should be reported)	Full texts were not available or did not provide necessary information about theory, participants, technique, findings, and discussion were removed.

Published between 2014-2024	Published before and after this period (2014-2024)
Empirical studies with a focus on metacognitive strategy on L2 listening	Non-empirical studies (such as reviews, meta-analyses, commentaries, or theoretical research) or focused on a different instructional strategy other than the metacognitive strategy
Conducted for L2 learners in an educational setting (e.g., at school, colleges, universities, or institutes)	Conducted for L1 learners or outside of an educational setting
The quality of the journal should be accepted	Other publications such as thesis, conference paper, and review paper were excluded
Should be conducted in L2/SL context	Did not include issues concerning the effects of metacognitive strategy on the SL learners

Table 1. Data inclusion and exclusion

1.3. Search strategy

Following the primary objectives of the current scoping review, this study began with a comprehensive literature review, employing electronic searches to gather relevant information (see Figure. 1). The keywords were selected to represent three areas of research, including; metacognitive strategy; listening training; and research focused on L2 learners. Therefore, the keywords were used to locate the relevant studies including *metacognitive, metacognition, metacognitive instruction, metacognitive intervention,* and *metacognitive strategy.* In addition, the keywords to locate listening strategy included *listening, listening comprehension, listening strategy,* and *listening training.* Further, the keywords specifically targeting L2 learners included *second language, second language learners,* and *second language acquisition.* The combination keywords from the three areas were ("*metacognitive"* OR *"metacognition"* OR *"metacognitive instruction"* OR *"metacognitive instructions"* OR "*metacognitive intervention*" OR "*metacognitive interventions"* OR "*metacognitive strategy*" OR "*metacognitive strategies*") AND ("*listening"* OR *"listening comprehension"* OR *"listening strategy"* OR "*listening strategy instruction"*) AND ("*second language"* OR *"second language learners"* OR "*second language acquisition"* OR "second language listening").

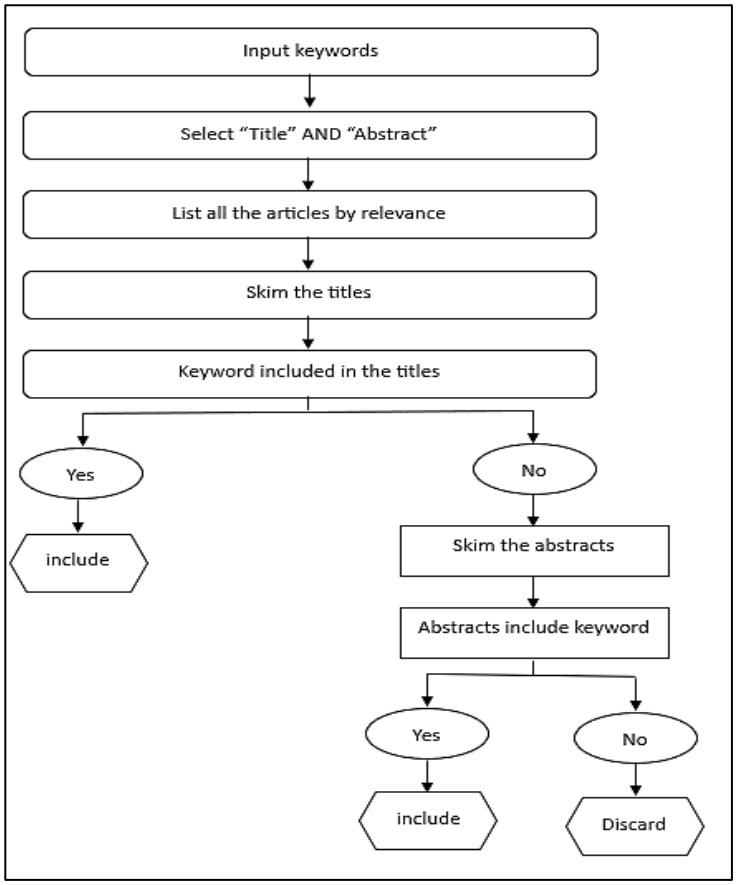

Figure 1. Searching and screening strategy

1.4. Evaluate literature using inclusion criteria

On 4th March 2024, the initial search produced 311 articles about metacognitive over the past 10 years. The title and abstract of each identified study were initially examined to determine if they met the criteria for inclusion. Studies that did not have complete text and studies that were not relevant to student learning were removed, leaving 68 eligible and appropriate studies and excluding 243 of them. Then, the author read the full text based on the criteria of inclusion and exclusion in Table 1, 14 studies were excluded because the abstracts and titles did not include the keywords. On the second screening, after reading the whole articles, 26 more papers were excluded because they did not specifically discuss metacognitive strategy or metacognitive instruction. 13 more papers were excluded for the final assessment for the retrieval because they were written as book chapter (*N=2*), book (*N=1*). review article (*N=4*), conference paper (*N=3*), not written in English (*N=1*), and not open access (*N=2*). Finally, 15 articles were selected as the most qualified (see Figure 2. for the PRISMA flow chart).

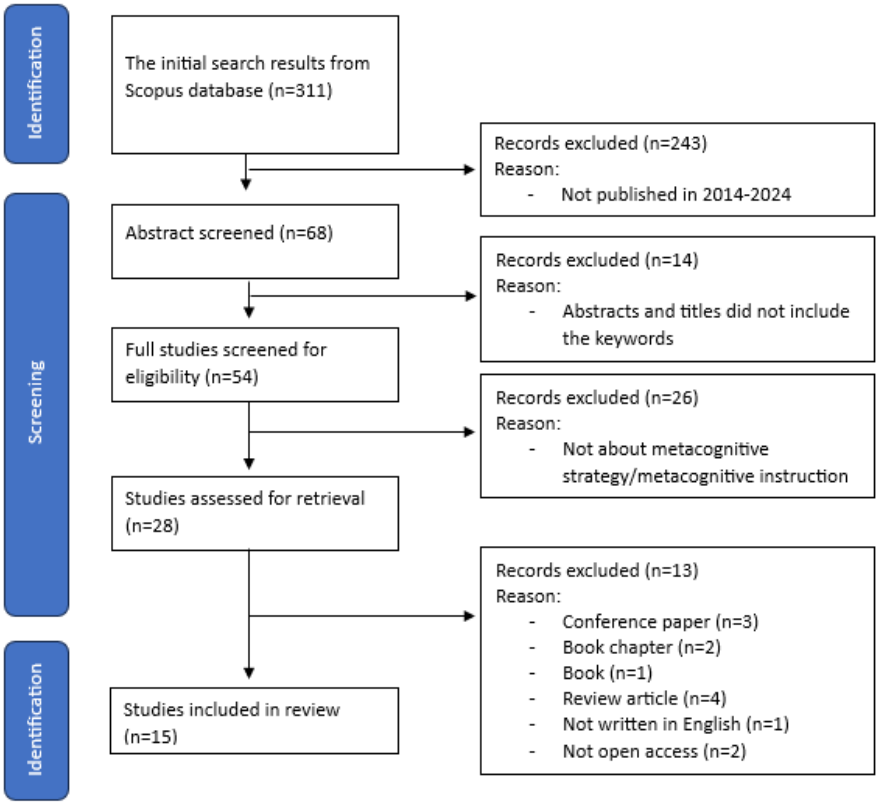

Figure 2. Flow chart of the study selection

Figure 3. Locations of the reviewed studies

1.5. An overview of the included studies

The studies included in this scoping review represent a diverse group of students from different countries who are mostly acquiring English as a foreign or second language. China, followed by the U.S., Malaysia, and New Zealand are the locations of studies of MSI on listening mostly conducted (Figure 3). The other countries are South Korea, Japan, Serbia, Canada, Oman, and Iran. The research of MSI on listening seems to be more popular in Asian countries where English is the second language. It should be noted that some of the studies were conducted in countries where English is the first language, such as the U.S., New Zealand, or Canada. However, the participants in the research were students who spoke English as a second language.

In addition, some professional organizations (e.g. ILI or Iranian Language Institute and World Language Center in The United States) sparked a considerable interest and partnership. The included studies were mostly conducted in higher education such as university (7), college (3), middle school or secondary school (2), language training program (2), and pre-university (1) (Figure 4). This information may indicate that MSI is more applicable to young adult learners rather than to children or primary students (Figure 4).

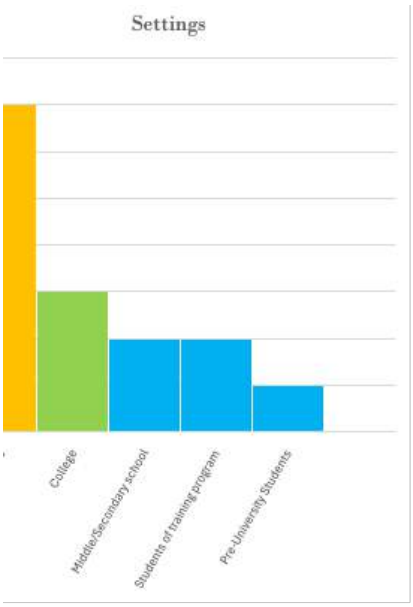

Figure 4. The setting of the reviewed studies

RESULTS

RQ 1: How is metacognitive strategy instruction for L2 listening conceptualized?

The studies included in this review utilized a variety of conceptual and theoretical frameworks. Conceptual frameworks such as 'metacognitive strategy' [27], [28], [29], [30], [31], 'metacognitive interventions' [32] or 'metacognitive strategy training' [21], and 'metacognition or metacognition in listening' [33], [34] and 'metacognitive awareness in listening' [35], [36], [37] were adopted in the included studies. Twelve out of fifteen studies conceptualized metacognitive strategy as the main framework while the other 3 studies utilized 'strategic competence' [38], 'strategic behavior' [39], and 'self-regulated learning' [40]. Although the explicit conceptualizations of metacognitive strategies or instructional frameworks were absent, the strategies mentioned in the three studies exhibited a strong association with metacognitive processes.

Adopted by 5 studies, 'metacognitive strategy', was the most common framework conceptualized in most studies which combined the metacognition concept of Flavell (1979) with metacognitive strategy instruction by Vandergrift & Goh (2012). The notion of 'metacognitive knowledge' which is also referred to as 'metacognitive awareness' by Vandergrift et al. (2006) was the next most frequently employed concept (3 studies). The concept of metacognitive strategy instruction commonly adopted pedagogical cycle or metacognitive instruction cycle (2 studies), process-based approach to listening (2 studies), bottom-up and top-down strategies (2 studies), and self-regulated learning strategies (1 study).

RQ 2: How is metacognitive strategy instruction for L2 listening designed?

The included studies were mostly conducted in high education settings (see Figure 5) with 33% of studies promoting intervention and correlational studies equally, 27% of studies conducted quasi-experimental studies or intervention with a control group while the rest 7% reported as a case study (Figure 5). In other words, the goal of the minority of the studies was to examine the metacognitive strategy through questionnaires, surveys, or interviews rather than adopting methods such as evaluating effectiveness using statistical data (see Table. 2). MSI represents instructional activities developed by English teachers, either by themselves or in collaboration with researchers, to promote the development of effective learning habits in students. It is not unexpected that the majority of the studies utilized quasi-experimental designs or interventions. Five studies were conducted in universities or colleges, while two studies were conducted in language institutions and secondary schools respectively.

The methodological features of the papers revealed either quantitative or mixed-method were applied in 7 studies each, whereas only one article was conducted with a qualitative approach (see Figure 6). Qualitative research (*N=1*) implemented logs/journals and conducted interviews with a sample size of 8 as its research instrument. The quantitative approach commonly employed correlational design investigating the relationship between metacognitive awareness and other dimensions associated with listening learning (*N=4*). Other quantitative studies adopted quasi-experimental design (*N=2*) and intervention (*N=1*). Out of 15 publications, 7 of them applied a mixed-method approach. These studies implemented either quantitative or qualitative design in the form of quasi-experimental design (*N=2*), intervention (*N=3*), correlational studies (*N=1*) and case studies (*N=1*).

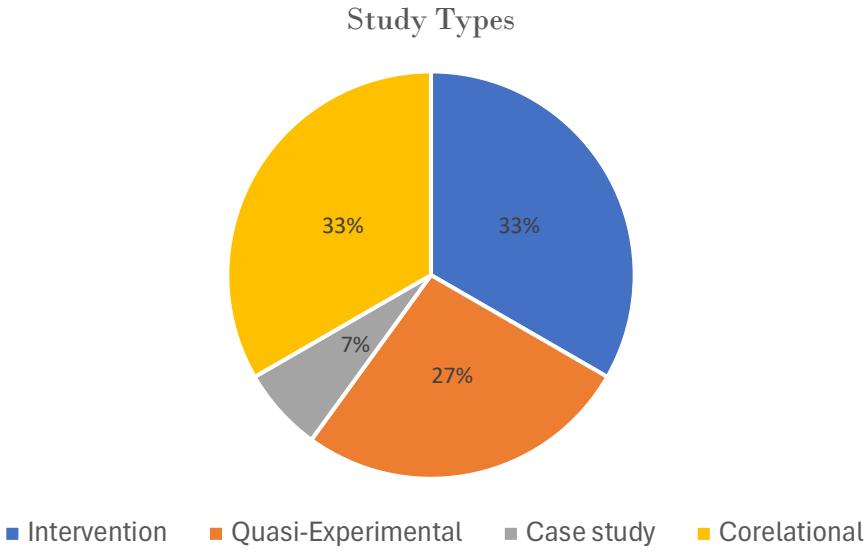

Figure 5. Study types of the reviewed studies

Study Code	Study	Educational level	Intervention/ experimental description	Materials	Duration of intervention
1.	Brett Milliner & Blagoja Dimoski (2021)	College	6 BU (Bottom-up) and 6 TD (Top-down) activities	Textbook and diary	50 hours of instruction
2.	Yajun Zeng & Christine C. M. Goh (2018)	College	Sel-regulated learning portfolio (SRLP)	Listening journal and reflection form	Over a-6-month period
3.	Yanmei Liu (2020)	Students of intensive language training program	Metacognitive learning cycle	Training modules	6 weeks
4.	Afsheen Rezai, Parisa Ashkani & Sayed M. Ismail	EFL learners of Iran Language Institute (ILI)	Task sequence/metacognitive process-based approach	Not specified	16 one-hour sessions held twice a week
5.	Surya Subrahmanyam Vellanki, Saadat Mond, Zahid Kamran Khan & Lekha Gopalakrishnan Nair (2022)	University students	Metacognitive strategy training	Coursebook and online platforms (H5P, Moodle, or Book-widgets)	10 weeks, 90 min/week
6.	Charanjit Kaur Swaran Singh, Eng Tek Ong, Dodi Mulyadi, Tee Tze Kiong, Wei Lun Wong, Tarsame Singh Masa Singh and Min Jie Chen (2022)	Students in Form Six (secondary school students)	Metacognitive strategy training	Lesson plan, instruction on metacognitive and listening modules	4 weeks
7.	Naheen Madarbakus-Ring (2024)	International university students	TED Talks-based listening lessons, listening lessons, and journal assessment	Paper-based lesson instruction and listening journal	5 x 75 minutes
8.	Shannon R. Becker (2020)	High school and university	Metacognitive strategy training	Assessment checklist	8 weeks
9.	Tao Pei & Jitpanat Suwanthep (2022)	University students	Metacognitive strategy training	Listening websites, online listening practice, and task	14 weeks

Table 2. A summary of metacognitive strategy intervention for listening comprehension

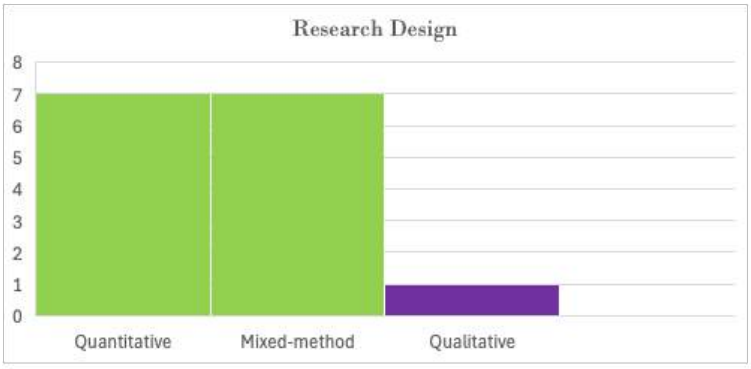

Figure 6. Research designs of the reviewed studies

RQ 3: How is metacognitive strategy instruction for L2 listening evaluated?

The majority of the included studies investigate metacognitive strategy instruction on listening comprehension performance using various instruments to collect the data. The tools, such as questionnaires, language proficiency tests, interviews, and a relatively small number of studies attempted to generate observational data using field notes, diaries, and journals or logs. Table 3 presents the types of evaluation tools employed across the 15 studies, while Figure 7 illustrates the number of evaluation tools used in metacognitive strategy instruction (MSI).

Types of evaluation tool	Evaluation model	Number of studies	Examples
Questionnaires	Correlational	13	Metacognitive Awareness Listening Questionnaire (MALQ) was adapted to examine the relationship between students' metacognitive awareness and listening comprehension through metacognitive instruction [33], [30], [35], [37], [21], [36], [27], [28], [42], [40], [31]. Listening Self-efficacy Questionnaire (LSEQ) and Post-training questionnaire [32], Oxford Placement Test and questionnaire on cognitive and metacognitive strategy [39], Foreign Language Listening Anxiety Scale (FLLAS) and Foreign Language Listening Enjoyment (FLLE) Questionnaire [36]
Language proficiency tests	Performance-based	12	IELTS [28], [34], [36], TOEIC [32], Oxford Quick Placement Test (OQPT) [42], [39], self-developed listening test [29], [33], [35]
Interviews	Perceptual	5	Semi-structured interviews [28], [29], [37], online interviews [30], individual and group interviews [40].
Journals/logs/ diaries	Observational	2	Listening journals [34], and reflective listening diaries [32].

Table 3. Types of evaluation tool

Out of the 15 papers that investigated the use of MSI for listening, only two studies did not employ a questionnaire [29], [34]. The Metacognitive Awareness Listening Questionnaire (MALQ) [41], was used as the main questionnaire of 13 studies, while some studies additionally added other questionnaires such as Listening Self-efficacy Questionnaire (LSEQ) Foreign Language Listening Anxiety Scale (FLLAS), and Foreign Language Listening Enjoyment (FLLE) Questionnaire. Language proficiency test, as identified in 12 studies, was the evaluation tool utilized by mostly quantitative studies with interventions or experimental designs. The most frequently administered test was the International English Language Testing Service (IELTS) (*N=3*), followed by the Oxford Quick Placement Test (OQPT) (*N=2*). Notably, some self-developed listening tests were utilized by institutions such as universities in a specific country such as the Malaysian University English Test (MUET) Listening test and L2 listening proficiency test developed by Seoul-Dongbu District Office of Education. The test was mostly employed before and after the intervention program or added in the middle of the intervention. The main assumption of these investigations was that a higher degree of metacognitive awareness would lead to improved language proficiency.

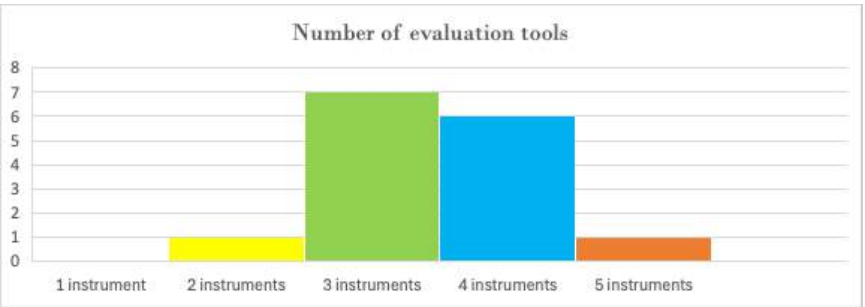

Figure 7. Number of evaluation tools used

Additionally, 5 studies used interviews to evaluate students' perception of MSI. Interviews conducted for the studies included semi-structured interviews (*N=3*), online interviews (*N=1*), and individual and group interviews (*N=1*). Three studies included both questionnaires (MALQ) and interviews to garner both quantitative and qualitative approach [28], [30], [37]. Furthermore, a task such as completing journals and diaries consisting of self-reflected studies on listening were employed only in two studies. Figure 7 showed clear evidence that the majority of the studies included three evaluation tools simultaneously; the questionnaires, proficiency tests, and interviews, while several studies applied 4 instruments because they used multiple questionnaires [35], [36].

DISCUSSION

This scoping review has examined 15 papers on metacognitive strategy instruction (MSI) for second language (L2) listening from 2014 to 2024. It focuses on how MSI is conceptualized, designed, and evaluated in different educational settings. Overall, many studies confirmed that MSI had positively affected listening comprehension performance despite several variations in terminology and frameworks. The concepts utilized by most of the studies were metacognition by Flavell (1976) and metacognitive strategy instruction by Vandergrift & Goh (2012). These concepts were often paired with cognitive strategies and affective strategies involving emotions in L2 comprehension such as listening

anxiety and enjoyment. Additionally, MSI was also investigated within the framework of individual differences such as high-achieving and low-achieving listeners, as well as gender differences.

The reviewed papers applied several methodologies with a significant focus on intervention, correlational, and quasi-experimental studies. Therefore, both quantitative and mixed-method approaches were more frequently distributed to analyze the data. Only a small number of studies conducted a qualitative approach in the form of a case study, while the majority of the publications showed a preference for either a quantitative or mixed-method approach. Furthermore, the participants in MSI research were primarily distributed in formal education settings suggesting a preference for young-adult populations. This indicates that MSI researchers have hardly explored non-formal educational settings as well as younger learners as the participants.

Several studies collected the data through questionnaires, language proficiency tests, interviews, and observation using diaries or journals to evaluate the effectiveness of MSI on listening performance. The research instruments varied from two to five research instruments or frequently a combination of listening tests, questionnaires (Metacognitive Awareness Listening Questionnaire), and interviews. Using a wider variety of research instruments facilitates a more comprehensive understanding from many different points of view and improves the depth of the research findings.

There are several limitations in this scoping review to acknowledge. First, the data collection, selection, analysis, and interpretation process for this study was carried out within a limited time (less than 6 months) by a single researcher. Thus, the results of this research might lead to different outcomes if more time were allocated. Moreover, the range of databases used in this study was limited only to the Scopus database and this consequently resulted in a small number of included studies. More databases (e.g., ERIC, JSTORE, Google Scholar) and a different range of keywords were recommended for future studies. In addition, it is recommended for future research to extend this scoping review by probing other research points of view; for instance, individual differences, listening assessment, or investigating the effect of MSI on other linguistic aspects, such as speaking, reading, and writing. Reviewing a ten-year development of MSI on listening comprehension performance demonstrated that there are still many gaps and unknown areas to explore which should be a part of the challenge for future researchers to contribute to solving learning issues, especially in listening learning.

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