

International Journal of Learning, Teaching and Educational Research
Vol. 23, No. 7, pp. 368-389, July 2024
<https://doi.org/10.26803/ijlter.23.7.19>
Received May 23, 2024; Revised Jul 15, 2024; Accepted Jul 25, 2024

Implementation of Metacognitive Reading Strategies to Improve English Reading Ability: A Systematic Review

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Abstract. Proficiency in English reading is crucial for overall language competency, as learning relies heavily on written materials. In recent years, experts and scholars have started to regard learning and employing metacognitive reading strategies as an important method for improving English reading comprehension. This systematic review investigated the application of metacognitive reading strategies for enhancing English language reading comprehension ability. This analysis followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. By using certain search keywords, a total of 20 articles concerning the implementation of metacognitive reading strategies for improving English reading comprehension ability were identified from databases that included Scopus, Science Direct, Web of Science, Academic Search Complete, and the Education Resources Information Center. The synthesis of findings indicate a prevalent use of the Metacognitive Awareness of Reading Strategies Inventory and its revised editions, along with a notable emphasis on problem-solving strategies. Moreover, this systematic review highlights the positive effect of metacognitive reading strategies for improving English language reading comprehension ability. Additionally, the study offers pedagogical recommendations for teachers teaching English as a foreign or second language.

Keywords: English reading ability; English as a foreign or second language; Metacognitive reading strategies; PRISMA; systematic review

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1. Introduction

Reading comprehension has become a prominent subject of inquiry in the realm of English as a foreign language (EFL) and English as a second language (ESL) studies, and it stands out as a fundamental proficiency in higher education. Most scholars specializing in second language acquisition have long held the belief that reading ranks among the most pivotal language skills in the context of language education (Grabe & Stoller, 2002). Additionally, scholarly voices, such as that of Leighton and Gierl (2011), assert that reading plays a crucial role in achieving academic success. Their perspective underscores the notion that the ability to comprehend written text serves as a linchpin for students aiming to excel in various academic disciplines and cultivate other talents. As noted by Ahmadi et al. (2012), the significance of reading comprehension is emphasized in the EFL or ESL learning domain and warrants attention at different education levels.

The examination of reading comprehension has a long history, with a notable framework presented in the book *Research-Based Practices for Teaching Common Core Literacy*, published in 2015 and edited by Pearson and Hiebert. In this book, they delineate the historical development of reading comprehension into four distinct phases. The first phase, pre-1965, was characterized by a focus on the text itself. The second phase, spanning the 1970s to the 1980s and beyond, emphasized the role of the reader in comprehension. The third phase, beginning in 1985 and extending forward, highlights the importance of context for understanding text. In the modern era, which is characterized by a balance between construction and integration models, cognitive models have gained increasing prominence in the study of reading comprehension (Pearson & Hiebert, 2015).

Reading is an active and dynamic skill, as emphasized by Grellet (2010), who explains that several cognitive processes come into play during the act of reading. These processes include guessing, predicting, checking, and self-questioning. Grellet (2010) suggests that reading is essentially a guessing game, in which what the reader brings to the text holds significant importance, and often even surpasses the significance of the text itself. In essence, this means that, when students engage in reading, they are not merely extracting literal meaning; rather, they must draw on their background knowledge to grasp the ideas presented in the text, especially when they encounter unfamiliar words and expressions. Therefore, a strong command of reading comprehension is fundamental for success in learning English, particularly for those studying it as a second or foreign language.

Furthermore, Patel and Jain (2008) underscore the importance of reading for expanding students' knowledge. Reading serves not only to acquire new information, but also to integrate this new knowledge with previously acquired information, thus fostering knowledge extension. Their conclusions are consistent with the main ideas of top-down reading processing, which is usually characterized as a psycholinguistics guessing game that requires readers to expect meaning from the text before and during the reading process, to make full use of the text when they need to confirm, and to extend their expectations of textual meaning (Eskey, 2005). Top-down processing emphasizes the importance of

schemata in reading comprehension/ Readers must grasp adequate background knowledge and language skills that play a vital role in the reading process. For readers to process larger language units based on their schemata, they need to know how to integrate their knowledge and language skills for reading. McNamara (2007) adds that comprehension is a complex process, and readers may sometimes need to slow down, pause, or even reread segments of text during their reading, which can diminish reading efficiency. Consequently, the value of employing cognitive strategies becomes evident when comprehension faces challenges at any level.

According to Oxford and Nyikos (2011), language learning strategies refer to *“behaviours or actions that learners employ to enhance the effectiveness, self-directedness, and enjoyment of their language learning”* (p. 291). These language learning strategies could be categorized into three main types: (1) cognitive strategies, which include activities such as repetition, grouping, translation, deduction, note-taking, mental imagery, contextualization, elaboration, auditory visualization, and transfer; (2) metacognitive strategies, which encompass aspects such as monitoring one’s own production or comprehension, planning for learning, and evaluating learning outcomes after completing a task; and (3) socio-affective strategies, which involve social interactions and engaging with others in the learning process.

To demonstrate the advantages of metacognitive strategies in enhancing students’ reading comprehension abilities, it is crucial to underscore the distinction between cognitive and metacognitive strategies. Metacognitive strategies primarily involve regulating and monitoring cognitive strategies, to represent individuals’ awareness of their own thinking processes (Flavell, 1976). In contrast, cognitive strategies focus on the reading task itself, and involves direct interaction with the text to enhance comprehension. Cognitive strategies directly impact information intake during the reading process and manipulate the reading process in specific ways to improve reading comprehension (Pressley & Afflerbach, 1995).

This comparison and contrast reveal that metacognitive strategies take a broader, macro-level perspective, while cognitive strategies operate at a more micro-level. Furthermore, the distinction between the two types of strategy is that metacognitive strategies transcend the limitations of topic and genre in various reading materials, whereas cognitive strategies tend to be confined to a specific topic or genre within the reading text. In essence, metacognitive reading strategies represent higher-level techniques that encompass planning, monitoring, and evaluating the effectiveness of reading activities (Pressley & Afflerbach, 1995).

Using metacognitive reading strategies to improve students’ reading comprehension has proven to be beneficial for second/foreign language studies (Ahmadi et al., 2013). Students who possess metacognitive awareness are adept at confronting and managing challenges in reading. As described by Ramesh (2009), being cognizant of one’s cognitive processes is among the crucial skills of educators, teachers, and instructors to assist students to improve their reading comprehension. Therefore, second/foreign language instructors should recognize and impart metacognitive reading strategies as a valuable tool. When students

reflect on their reading approaches repeatedly, they become increasingly conscious of the specific strategies that can enhance their reading performance (Ramesh, 2009).

Furthermore, a study conducted by Wang et al. (2009) provides evidence of the advantages of employing metacognitive reading strategies to bolster students' reading comprehension. Their research with Chinese university EFL students delved into metacognitive beliefs and learning strategies, and reveals a positive correlation between high-level metacognitive beliefs and students' academic achievement. Students with strong metacognitive abilities and self-confidence were better equipped to utilize metacognitive reading strategies such as planning, monitoring, and evaluation, which led to more successful learning and reading outcomes, compared to their less metacognitive and confident peers (Wang et al., 2009).

The topic of this systematic review is consistent with the ideas of Bandura's theory of self-efficacy. According to this theory, an individual's belief in their ability to succeed in specific situations, or to accomplish tasks, plays a critical role in how they approach goals, tasks, and challenges (Bandura, 1977). Self-efficacy is shaped by four main sources: mastery experiences (successes build a robust belief in one's efficacy), vicarious experiences (observing others succeed), verbal persuasion (encouragement from others), and physiological states (interpretations of physical responses to situations) (Bandura, 1986). This review concludes that metacognitive reading strategies can effectively enhance the reading abilities of learners of English. This improvement in reading ability can, in turn, significantly boost the learners' self-efficacy, which is primarily reflected in mastery experiences. As English learners continually learn and master metacognitive reading strategies, their reading confidence increases, and their ability to overcome reading obstacles improves.

Furthermore, the topic of this systematic review is consistent with the perspectives of Rumelhart's Schema theory and Piaget's theory of cognitive constructivism. Because metacognitive reading strategies often involve connecting new information to existing knowledge, Schema theory suggests that activating prior knowledge helps readers to understand and retain new information better (Rumelhart, 1980). Regarding Piaget's theory of cognitive constructivism, metacognitive reading strategies help learners integrate new information (assimilation) and adjust their understanding based on new experiences (accommodation) (Piaget, 1952). This process aligns with Piaget's stages of cognitive development, during which learners actively construct knowledge.

Despite the extensive popularity and abundant literature on the use of metacognitive reading strategies in English reading, encompassing both quantitative and qualitative studies, there remains a significant gap in comprehensive reviews. Specifically, there is a lack of detailed examination of the effect of implementation of these strategies on the reading abilities of English learners. This gap includes the identification and classification of specific

metacognitive reading strategies, the detailed selection of these strategies, and their impact on EFL/ESL reading proficiency. Therefore, the main aim of this systematic review was to evaluate the application of metacognitive reading strategies on the reading proficiency of English learners. The study concentrated primarily on selecting relevant studies for synthesis to answer three key questions: (a) What are the specific metacognitive reading strategies? (b) Which metacognitive reading strategies are most commonly used by EFL or ESL learners? (c) Are metacognitive reading strategies effective for enhancing the reading comprehension skills of EFL or ESL learners?

2. Methodology

This section mainly discusses the methods used to retrieve relevant studies about the utilization of metacognitive reading strategies for reading English. The systematic literature review employed the 2020 Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) guidelines to locate, choose, assess, and compile research studies. These guidelines comprise a checklist of 27 items and a four-phase flowchart to guide the processes of identification, screening, eligibility assessment, and inclusion (Page et al., 2021).

2.1 Data Collection

In the course of gathering pertinent data, the authors concentrated primarily on studies that met the following criteria: (a) were carried out in bilingual ESL or EFL settings; (b) primarily centered on reading as opposed to listening, speaking, writing, or translation in the context of EFL or ESL learning; and (c) predominantly examined the implementation of the metacognitive reading strategy on the reading ability of EFL or ESL learners.

Based on the research purpose and research questions in this study, this article review specifically focused on literature retrieval related to a particular topic, namely, the correspondence between metacognitive reading strategies and the English reading abilities of EFL or ESL learners. This article review placed a strong emphasis on searching for literature concerning the implementation of metacognitive reading strategies on the English reading abilities of EFL or ESL learners, and identifying specific literature related to metacognitive reading strategies that can impact the reading abilities of EFL or ESL learners. To ensure the quality and specialization of the articles to be retrieved, the authors of this paper searched for articles in the following five literature databases: Education Resources Information Centre (ERIC), Scopus, Science Direct, Web of Science, and Academic Search Complete.

2.2 Retrieval Technique

The search strategies encompassed four primary phases: identification, screening, eligibility, and inclusion. Identification involved locating relevant records by employing primary keywords, synonyms, and variations derived from the research question. To achieve identification, the authors applied Boolean operators, phrase searching, and truncation techniques for searching through databases. These methods were employed to comprehensively address all terms pertinent to the topic and to construct an effective query string. Considering the

one variable of this research topic, reading comprehension, some synonyms and related terms were used as search keywords. For instance, synonyms for reading comprehension might be reading ability and reading skills. Table 1 shows the details of the identification phase of the retrieval process.

Table 1: Details of retrieving

| Database | Keywords for retrieving | Number of records |
|--------------------------|---|-------------------|
| Scopus | TITLE-ABS-KEY ("Metacognitive reading strategy") AND ("reading skills" OR "reading ability" OR "reading comprehension") | 176 |
| ERIC | Metacognitive reading strategy AND reading skills OR reading ability OR reading comprehension | 687 |
| Science Direct | Metacognitive reading strategy AND reading skills OR reading ability OR reading comprehension | 712 |
| Web of Science | Metacognitive reading strategy AND reading skills OR reading ability OR reading comprehension | 196 |
| Academic Search Complete | Metacognitive reading strategy AND reading skills OR reading ability OR reading comprehension | 118 |

The details of the inclusion and exclusion criteria for the systematic review process are presented in Table 2

Table 2: Criteria of inclusion and exclusion

| Criteria | Inclusion | Exclusion |
|-----------------|-----------------------------|--|
| Time range | 2019–2023 | Before 2019 |
| Language | English | Not published in English |
| Topic | EFL/ESL reading ability | Not in EFL/ESL context |
| Literature form | Empirical research articles | Review article, editorial, meta-analysis paper, thesis or conference proceedings |

To comprehensively cover the most current aspects of the research topic, the authors of this study limited the search range to the period 2019 to 2023. Additionally, the selected literature needed to be full-text and peer-reviewed. Upon completing the retrieval process, a total of 1,889 pertinent records were located from the five databases. These records comprised a variety of source types, including journals, reviews, conference proceedings, theses, and editorials.

After the identification phase, the next step was to screen the 1,889 records. During this process, a total of 254 duplicates were identified and removed. The remaining 1,635 records underwent further screening, which involved reviewing their titles and abstracts. Additionally, this phase considered the context of EFL/ESL, and the language in which the literature was published had to be English. After completing this screening phase, 1,588 records had been excluded from the study.

The third eligibility phase placed significant emphasis on the type or form of the literature. Specifically, the literature had to be in the form of research articles,

while other forms, such as review articles, meta-analysis papers, editorials, and conference proceedings, were excluded. After this phase, 27 records had been excluded based on these criteria. In accordance with these criteria, a total of 20 studies were chosen for inclusion in the systematic review. After the predefined inclusion and exclusion criteria had been satisfied, a total of 20 full-text studies were chosen for the systematic review. Figure 1 illustrates the comprehensive search process.

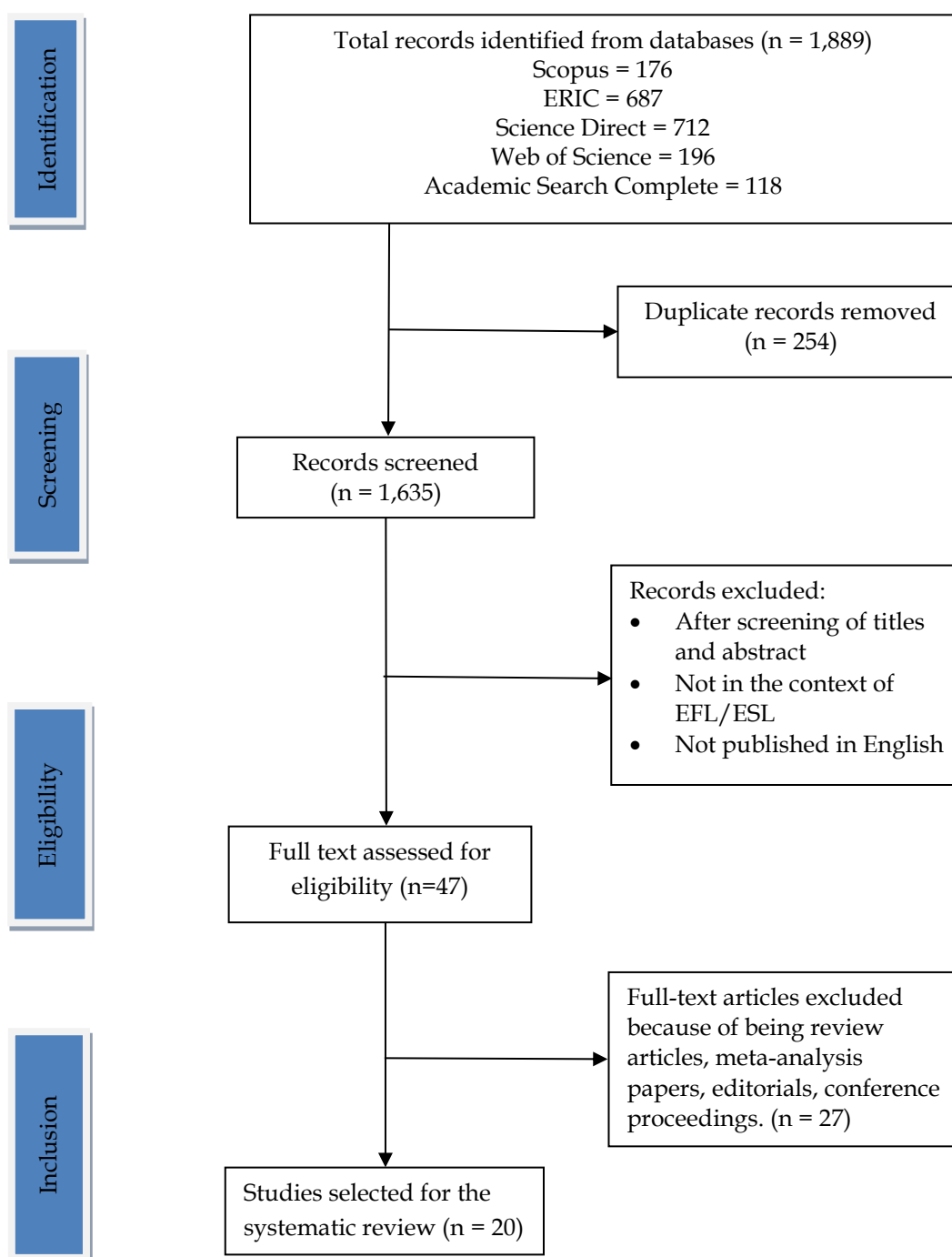


Figure 1. Flowchart of the systematic review process

3. Results

From the five databases, a total of 1,889 records were initially retrieved, and after screening based on the specified inclusion and exclusion criteria, 20 full-text journal articles were deemed eligible. These 20 relevant studies were subjected to a thorough examination, with an analysis of their overall context and primary findings.

3.1 Background Information of the Studies Selected

Table 3 provides the general background information of the 20 relevant studies in terms of their authors, date of publication, research participants, research locations, research methods and research duration.

Table 3: Background information of the 20 relevant studies

| Author, year of publication | Participants | Country/Region | Method | Period |
|-------------------------------|---------------------------------|----------------|-----------------------------------|-----------------|
| Ahmed (2020) | 375 university students | Oman | Quantitative (Descriptive) | Not specified |
| Al-Kiyumi et al. (2021) | 45 university students | Oman | Quantitative (Quasi-experimental) | Not specified |
| Babashamasi et al. (2022) | 75 university students | Malaysia | Mixed method (Quasi-experimental) | 14 sessions |
| Bozgun and Can (2023) | 482 preservice teachers | Turkey | Quantitative (Correlational) | 1 semester |
| Deliany and Cahyono (2020) | 53 university students | Indonesia | Quantitative (Survey) | Not specified |
| Do and Phan (2021) | 123 university students | Vietnam | Quantitative (Descriptive) | Not specified |
| Ghaith and El-Sanyoura (2019) | 119 Grade 10 learners | Lebanon | Quantitative (Correlational) | 5 days |
| Hasani and Pahamzah (2022) | 450 senior high school students | Indonesia | Quantitative (Descriptive) | 4 weeks |
| James and Bulusan (2020) | University freshmen | Philippines | Mixed method | Not specified |
| Juhkam et al. (2023) | 301 Grade 3 students | Estonia | Quantitative (Quasi-experimental) | 13 weeks |
| Khellab at al. (2022) | 60 university students | Libya | Quantitative (Experimental) | 8 weeks |
| Köse and Güneş (2021) | 236 university students | Turkey | Quantitative (Descriptive) | 1 academic year |
| Martelletti et al. (2023) | 117 Grade 4 students | Argentina | Quantitative (Quasi-experimental) | 8 weeks |

| | | | | |
|-----------------------|-------------------------|--------------|-----------------------------------|------------------------|
| Mohseni et al. (2020) | 54 EFL learners | Iran | Quantitative (Quasi-experimental) | Not specified |
| Muhid et al. (2020) | 50 Grade 11 students | Indonesia | Quantitative (Quasi-experimental) | Approximately 2 months |
| Rianto (2022) | 602 university students | Indonesia | Quantitative (Correlational) | Not specified |
| Sheikh et al. (2019) | 571 university students | Pakistan | Quantitative (Correlational) | Not specified |
| Villanueva (2022) | 446 university students | Philippines | Quantitative (Correlational) | Not specified |
| Wallace et al. (2021) | 137 university students | China | Mixed method | Not specified |
| Yaghi (2021) | 301 university students | Saudi Arabia | Mixed method | Not specified |

From Table 3, it can be observed that, between the years of 2019 to 2023, most of the research concerning the association between metacognitive reading strategies and EFL or ESL learners' reading abilities has been quantitative in nature. Even the four mixed-methods studies listed in the table primarily encompassed quantitative research within their study processes. Regarding the countries and regions where the research was conducted, the 20 relevant studies listed in the table were carried out in countries in Asia, Africa, Europe, and Latin America between the years of 2019 to 2023. Notably, 15 of these studies were conducted in Asian countries, thereby highlighting a significant emphasis on metacognitive reading strategies in regions where English is learned as a foreign or second language.

Regarding the study participants, 13 of the 20 relevant studies explicitly indicated that their participants were university students, suggesting a strong connection between metacognitive reading strategies and the English reading comprehension abilities of university students. Regarding specific research methods, of the 20 relevant studies, seven were experimental or quasi-experimental studies that examined the effect of metacognitive reading strategies on EFL or ESL learners' reading abilities. A further five were correlational studies that investigated the association between metacognitive reading strategies and the EFL or ESL learners' reading abilities, and used data analysis to reveal whether this relationship was positive or negative.

3.2 Major Findings

After examining the application of metacognitive reading strategies on the reading comprehension skills of English learners in the 20 selected studies, three key characteristics emerged: the diversity of metacognitive reading strategies, the

most commonly used strategies, and the advantages of using these strategies to improve reading comprehension. These were the research questions of this study.

3.2.1 Research Question 1: What are the specific metacognitive reading strategies?

In the context of reading, metacognitive reading strategies are activities that help students become highly aware of their thinking and cognitive processes while they read. As outlined by the New South Wales Department of Education and Training (2010), these strategies involve deliberate, purposeful, goal-oriented, and forward-looking mental activities and processes. They assist readers to contemplate and verify their actions throughout the completion of a cognitive task. During every stage of the reading process, metacognitive reading strategies empower readers to scrutinize their comprehension of the text, oversee the reading process, and assess the efficacy of the strategies employed, as explained by Wilson and Bai (2010).

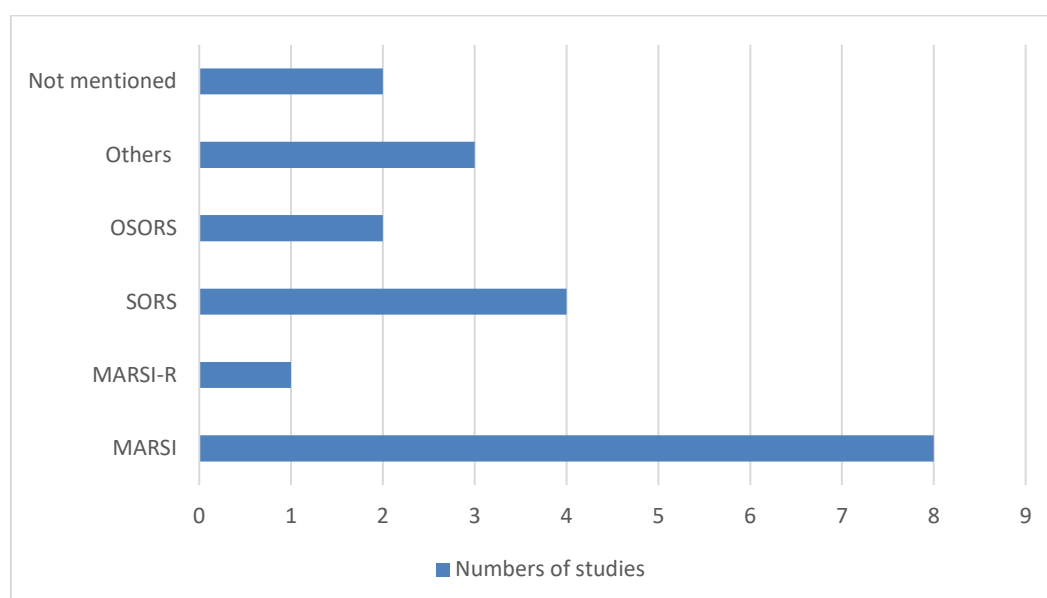


Figure 2: Various types of metacognitive reading strategies

Figure 2 indicates that participants in 18 of the 20 relevant studies applied metacognitive reading strategies. Of these, 15 studies specified their metacognitive reading strategies through specific survey questionnaires and inventories, such as Metacognitive Awareness of Reading Strategies Inventory (MARSII), Survey of Reading Strategy (SORS), Metacognitive Awareness of Reading Strategies Inventory-Revised (MARSII-R), and Online Survey of Reading Strategy (OSORS).

MARSII, which was created by Mokhtari and Reichard (2002), is used to assess metacognitive reading strategies of native English-speaking students. This self-report questionnaire contains 30 items that evaluate students' strategies and behaviors while they are reading English texts and other materials. The survey is divided into three categories: global strategies (13 items), problem-solving strategies (8 items), and support strategies (9 items). Each category incorporates specific reading strategies. Among the 20 relevant studies retrieved for the

systematic review, eight studies applied MARSİ as their research instrument and they specify 30 metacognitive reading strategies (Al-Kiyumi et al., 2021; Babashamasi et al., 2022; James & Bulusan, 2020; Köse & Güneş, 2021; Mohseni et al., 2020; Sheikh et al., 2019; Villanueva, 2022; Wallace et al., 2021).

MARSİ-R (Mokhtari, et al., 2018) represents an enhanced iteration of the original MARSİ (Mokhtari & Reichard, 2002). In contrast to the 30 items in MARSİ, MARSİ-R comprises only 15 items. Both the original and revised versions of MARSİ were designed to assess three core strategies: global strategies (five items), problem-solving strategies (five items), and support strategies (five items). Of the 20 relevant studies retrieved for the systematic review, only one study applied MARSİ-R as its research instrument (Deliany & Cahyono, 2020).

Derived from and similar to MARSİ, the Survey of Reading Strategies (SORS) was also developed by Mokhtari and Reichard (2002). It comprises 30 items divided into three subscales: global strategies (13 items), problem-solving strategies (8 items), and support strategies (9 items). The primary distinction is that, while MARSİ primarily assesses the use of metacognitive reading strategies by native English speakers, SORS was specifically designed for adolescent and adult students learning English as a second or foreign language. Consequently, the specific items in SORS differs to some extent from those in MARSİ. Among the 20 relevant studies reviewed, four opted to use SORS as their research instrument (Ahmed, 2020; Do & Phan, 2021; Ghaith & El-Sanyoura, 2019; Khellab et al., 2022).

Being adapted from SORS, Anderson (2003) conducted a comparison of the distinct applications of metacognitive online reading strategies of ESL and EFL students, and developed the Online Survey of Reading Strategies (OSORS) to evaluate the participants' awareness and utilization of metacognitive online reading strategies. The OSORS comprises 38 items that are designed to assess metacognitive reading strategies. These items are categorized into three groups: global reading strategies (18 items), problem-solving strategies (11 items), and support strategies (9 items). After reviewing the 20 relevant studies, the researcher found that two studies had used OSORS as their research instruments (Rianto, 2022; Yaghi, 2021).

The four questionnaires described above share two obvious similarities; first that all the items in the four questionnaires are categorized in to three groups: global strategies, problem-solving strategies and support strategies. The second similarity is that the four questionnaires all use a five-point Likert scale, ranging from 1 (Never or almost never do this) to 5 (Always or almost always do this) to measure the participants' use of metacognitive reading strategies.

The four questionnaires also share the same understandings of global strategies, problem-solving strategies and support strategies. Global reading strategies refer to purposeful reading techniques that are employed to establish a framework for the reading process. Examples include assessing what to read or disregard, observing text characteristics, and forming initial impressions about the content. Problem-solving strategies involve targeted, focused approaches that are

employed to address issues that arise in understanding textual information. Examples include re-reading for better comprehension, returning to a previous section when concentration is lost, and taking a break to reflect on the reading. Support reading strategies act as mechanisms to sustain engagement and understanding during reading. These strategies include underlining or circling key information, paraphrasing to enhance comprehension, and moving back and forth within the text to clarify and reinforce understanding.

In addition, three of the 20 relevant studies concretely operationalized metacognitive reading strategies in other forms. For example, Juhkam et al. (2023) used 12 simple statements to evaluate participants' metacognitive knowledge of reading strategies. Bozgun and Can (2023) used the Metacognitive Reading Strategies Questionnaire developed by Taraban et al. (2004) to assess the extent to which university students employ metacognitive strategies while they study or read course materials. This questionnaire is similar to the four questionnaires mentioned above, and used the same five-point Likert scale. However, this questionnaire has only 22 items divided into two subdimensions: analytical strategies and pragmatic strategies.

Muhid et al. (2020) chose the Metacognitive Strategy Questionnaire (MSQ) developed by Zhang and Seepho (2013) to specify metacognitive reading strategies. In this questionnaire, Zhang and Seepho put forward the concept of metacognitive process of reading and divided it into three periods: Planning (pre-reading period), Monitoring (while-reading period) and Evaluating (post-reading period). Based on the three periods, they put forward nine subcategories of metacognitive strategies in the academic reading comprehension process, namely advance organizing, organizational planning, selective attention, self-management, comprehension monitoring, production monitoring, self-assessment, self-evaluation, and self-reflection. To be more specific, they composed 40 items that correspond to the nine subcategories of metacognitive strategies. With a similar five-point Likert scale, Muhid et al. (2020) adopted the Strategy Inventory for Language Learning (SILL) Scale Value Version 5.1 (Lin & Zhang, 2011; Oxford, 1990) to calculate and evaluate participants' use of metacognitive reading strategies. This scale is also a five-point value scale ranging from 1 (Never or almost true of me) to 5 (Always or almost always true of me).

3.2.2 Research Question 2: Which specific metacognitive reading strategies are most frequently used by EFL or ESL learners?

In total 15 of the studies that were reviewed specified the metacognitive reading strategies as evaluated by questionnaires and inventories such as MARS, SORS, MARS-R, and OSORS. All four inventories categorize the metacognitive reading strategies into three subscales: global strategies, problem-solving strategies and support strategies. This study determined which subscale was mostly often used by readers.

It can be concluded from Table 4 below that 9 of the 15 studies clearly identified which kind of metacognitive reading strategies readers used most often. Among the nine studies, six of them listed problem-solving strategies as the metacognitive reading strategies used most often (Do & Phan, 2021; Ghaith & El-Sanyoura, 2019;

James & Bulusan, 2020; Rianto, 2022; Villanueva, 2022; Wallace et al., 2021), two of them considered global strategies to be the metacognitive reading strategies used most often (Babashamasi et al., 2022; Khellab at al., 2022), and a single study reports that support strategies is the strategy most used by readers (Yaghi, 2021).

Table 4: Metacognitive reading strategies most used by readers

| Author and year | Metacognitive reading strategies used most often |
|-------------------------------|---|
| Babashamasi et al. (2022) | Global strategies |
| Do and Phan (2021) | Problem-solving strategies |
| Ghaith and El-Sanyoura (2019) | Problem-solving strategies |
| James and Bulusan (2020) | Problem-solving strategies |
| Khellab at al. (2022) | Global strategies |
| Rianto (2022) | Problem-solving strategies |
| Villanueva (2022) | Problem-solving strategies |
| Wallace et al. (2021) | Problem-solving strategies |
| Yaghi (2021) | Support strategies |

The widespread use of problem-solving strategies aligns with findings of studies, by Rajab et al. (2017), Khoshshima and Samani (2015), Meniado (2016), Mokhtari and Reichard (2004), Sariçoban and Behjoo (2017), Sheorey and Mokhtari (2001), and Yüksel and Yüksel (2012). They agree that non-native readers used problem-solving strategies more often because these strategies were essential for comprehension. Reading is the outcome of a remarkably intricate fusion of knowledge, strategies, and comprehension. As outlined by Mokhtari and Thompson (2006), individuals facing challenges in comprehension often grapple with issues related to word order, sentence correction, and basic grammar. A grasp of grammar, syntax, and language structure contributes to students' comprehension, thereby making comprehension more accessible (Cain & Oakhill, 2007). The reason why problem-solving strategies were preferred by most of readers was because they faced linguistic challenges – readers found that these strategies helped them deal with linguistic problems during the reading process (Meniado, 2016). Similarly, one reason for the high frequency of use of problem-solving strategies is readers' linguistic proficiency (Mokhtari & Sheorey, 2002).

A study by Deliany and Cahyono (2020) is one of the 15 studies that investigated the relationship between metacognitive reading strategies use by EFL university students and their gender. The study concludes that global reading strategies and problem-solving strategies were more likely to be used by male students, while problem-solving and support reading strategies were more likely to be utilized by female students. However, after utilizing the MARSII to investigate 137 Chinese EFL university students' adoption of metacognitive reading strategies, the study conducted by Wallace et al. (2021) concluded that gender did not affect Chinese EFL university students' strategies.

3.2.3 Research Question 3: Are metacognitive reading strategies effective in improving EFL or ESL learners' reading comprehension skills?

Out of the 20 studies examined, six specifically detailed the effects of metacognitive reading strategies on reading. Martelletti et al. (2023) carried out a

quasi-experimental study with 117 fourth-grade students in Argentina to investigate the effect of improving metacognition on acquiring inferential reading skills in ESL. The study's results indicate that the use of metacognitive strategies improved students' ability to acquire inferential reading skills over time, thereby highlighting the positive influence of metacognition on learning outcomes and persistence when it is intentionally fostered. Similarly, Juhkam et al. (2023) carried out a quasi-experimental study with 301 third-grade students in Estonia to evaluate how the enhancement of readers' metacognitive knowledge during an intervention contributed to reading comprehension outcomes. Their research delved into the cognitive and metacognitive mechanisms underlying students' reading comprehension processes, and they emphasize the significance of metacognitive knowledge and systematic practice of reading strategies as crucial elements of improving reading comprehension.

In 2022, during the pandemic, Babashamasi et al. examined the effects of explicit training in metacognitive reading strategies on improving the online reading comprehension of undergraduate students. In quasi-experimental study, they collected data from 75 university students in Malaysia, utilizing a reading test, the Metacognitive Reading Awareness Strategy inventory, and semistructured interviews. Both quantitative and qualitative findings indicate that explicit instruction in metacognitive reading strategies positively impacts students' reading skills. Similarly, Yaghi (2021) explored and validated the influence of metacognitive online reading strategies on the online reading dispositions of Saudi EFL learners through a mixed method research approach that involved qualitative and quantitative analysis of data from 301 university students in Saudi Arabia.

Al-Kiyumi et al. (2021) undertook a quasi-experimental study to investigate the influence of metacognitive reading strategies on the reading comprehension and attitudes of foundation-level Omani EFL students. The research involved 45 Omani university students. Analysis of the test outcomes demonstrates statistically significant differences between a group receiving instruction in metacognitive strategies and a group receiving traditional reading instruction. These findings confirm the beneficial effect of metacognitive reading strategies on the reading comprehension and attitudes of Omani EFL foundation-level students. Similarly, Muhid et al. (2020) conducted a quasi-experimental study involving 50 eleventh-grade students in Indonesia. Their research found that metacognitive strategies contributed to students' success in reading comprehension, and enhanced their reading abilities and optimized reading efficiency. Through the application of metacognitive strategies in their reading process, students developed skills and evolved into proficient and strategic readers.

4. Discussion

The findings of this systematic literature review demonstrate the overall effects of metacognitive reading strategies on English reading comprehension. The background information revealed the popularity of employing metacognitive reading strategies for teaching English reading comprehension in Asian countries. The review shows that metacognitive reading strategies have been widely used in

Indonesia, and have gained popularity in China, Saudi Arabia, Malaysia and Philippines. After investigating the education levels of research participants, the review confirms the suitability of metacognitive reading strategies for university students, because 13 of the 20 studies that were reviewed chose university students as their research participants. This finding aligns with the research findings of Kim and Anderson (2023), which demonstrate that metacognitive reading strategies enable faculty to employ effective reading techniques, utilize assessment tools, and incorporate reading comprehension in their courses.

Regarding research types, the 20 selected studies in this review were predominantly quantitative studies. Even in the mix method studies mentioned in this systematic review, the quantitative elements still constituted the majority of every study. Among the 20 quantitative studies, experimental research and correlational studies were particularly prevalent. The experimental research primarily explored the effectiveness of metacognitive reading strategies on English reading comprehension, whereas the correlational studies examined the relationship between metacognitive reading strategies and English reading, and consistently confirm a positive correlation. Therefore, the predominant research types among the 20 selected studies aligned with the research purpose of this systematic review.

After reviewing the 20 relevant studies, a significant finding is that metacognitive reading strategies were operationalized into various questionnaires by different studies. These questionnaires, often paired with a five-level Likert scale, were utilized for surveying readers, thus generating data for analysis. The most commonly used questionnaire for metacognitive reading strategies was the MARSI, which was developed by Mokhtari and Reichard, and its derivative versions. These questionnaires all categorized metacognitive reading strategies into global strategies, problem-solving strategies, and support strategies. Each category of reading strategy encompassed various reading techniques described from a first-person perspective, thereby facilitating questionnaire surveys of readers. The frequent utilization of the MARSI aligned with numerous studies that highlight its widespread use for assessing students' metacognitive awareness across educational settings, including schools, colleges, and universities (Fitrisia et al., 2015, Veloo et al., 2015; Wu et al., 2012). As a result of utilizing the MARSI, 15 of the 20 reviewed studies categorized metacognitive reading strategies into three main types: global strategies, problem-solving strategies, and support strategies. Of these 15 studies, nine explicitly identified the most frequently utilized strategy, and six indicated that the problem-solving strategy is the most frequently employed, followed by the global strategy (in two studies) and the support strategy (in one study).

Regarding the benefits of the MARSI, findings of six quasi-experimental studies directly validated the advantages of employing metacognitive reading strategies. Furthermore, the remaining 14 studies presented evidence indicating a highly positive correlation between the utilization of metacognitive reading strategies and students' reading proficiency. Additionally, research conducted by Salameh et al. (2019) thoroughly investigated the impact of implementing metacognitive

reading strategies on improving students' reading comprehension across three specific subskills: the quality of schema, understanding and critical thinking. Through an analysis of pretests and posttest scores of experimental and control groups for these subskills, the researchers found that the mean scores of the experimental groups surpassed those of the control groups for all three subskills. Moreover, the difference is statistically significant, at $\alpha = .05$ level, indicating the effectiveness of metacognitive reading strategies in improving reading comprehension across these specific subskills.

Compared with the 20 studies mentioned above, studies conducted in other countries also proved the effectiveness of metacognitive reading strategies for improving English reading ability. A study by Carrell et al. (1989) found that explicit instruction in metacognitive strategies significantly improved students' reading comprehension in ESL. They found that students who were taught to use strategies such as summarizing, predicting, and questioning showed marked improvement in their ability to understand and analyze texts. Similarly, O'Malley and Chamot (1990) highlight that these strategies help learners to become more aware of their reading processes, by enabling them to adjust their techniques to enhance comprehension.

Research by Pressley and Afflerbach (1995) confirms these findings, and report that skilled readers employ metacognitive strategies naturally, while less proficient readers learn through instruction. This aligns with the work of Zhang and Seepho (2013), who found that metacognitive strategy training led to significant gains in reading comprehension of ESL learners, particularly when training was combined with regular practice and feedback.

Sheorey and Mokhtari (2001) investigated the differences in metacognitive strategy use between native English speakers and ESL learners. The findings indicated that while both groups benefited from using metacognitive strategies, ESL learners who received explicit instruction in these strategies showed greater improvements in reading comprehension compared to those who did not. This underscored the importance of targeted metacognitive strategy instruction for ESL learners.

Research by Block (1992) focused on the metacognitive reading strategies of native English speakers and ESL learners in a high school setting. The study found that native speakers typically used a wider range of strategies and are more flexible in their application. In contrast, ESL learners benefited significantly from explicit instruction on metacognitive strategies, and showed marked improvement in reading comprehension after such training.

A study conducted by Chamot and Kupper (1989) examined the learning strategies, including metacognitive strategies, used by native English speakers and ESL learners. The researchers found that successful ESL learners employed metacognitive strategies in the same way as native speakers but required more explicit instruction and practice to develop these skills. The study underscored the importance of tailored metacognitive strategy training for ESL learners to

enhance their reading comprehension. Studies about the implementation of metacognitive reading strategies on improving English reading ability were conducted in a variety of countries. Regardless of whether learners considered English as their native language or a second language, metacognitive reading strategies significantly helped improve their English reading abilities.

5. Implications of the Study

This review suggests there is a need to improve EFL or ESL readers' reading ability through metacognitive reading strategies. In this systematic review, numerous researchers explored the awareness of EFL and ESL readers about utilizing metacognitive reading strategies while reading English texts by employing questionnaires such as the MARS and its revised versions. The studies confirm the effectiveness of these strategies on EFL and ESL reading comprehension and reveal that problem-solving strategies are often used.

Therefore, the summary of these research findings in this review carries several pedagogical implications for EFL or ESL teachers. These implications suggest integrating all three categories of metacognitive reading strategies into the curriculum over time. This integration can aid in training future ESL or EFL teachers in metacognitive awareness of reading strategies. It would be beneficial for these prospective English teachers to be acquainted with this essential teaching method in reading comprehension prior to entering the profession. Based on the summary of this systematic review, it appears that most EFL or ESL students tend to primarily utilize problem-solving reading strategies in their reading endeavors, while often overlooking global and support reading strategies. Consequently, it is recommended that teachers take proactive measures to enhance students' awareness and utilization of these two types of reading strategies. This can be achieved through instruction that not only elucidates the significance of employing global and support strategies, but also provides guidance on how to effectively apply them in various reading tasks (Fitrisia et al., 2015).

6. Limitations and Recommendations for Future Studies

Even though the outcomes of this review demonstrate the efficacy of metacognitive reading strategies in enhancing the reading proficiency of EFL or ESL learners, there remain additional areas that researchers should delve into to broaden the scope of research. For instance, it is recommended that researchers determine the usage of specific metacognitive reading strategies within the reading process of EFL or ESL learners. Factors such as the genre and complexity level of reading materials should also be considered. Investigating the correlation between the application of metacognitive reading strategies and text genre, as well as the relationship between the usage of strategies and the difficulty level of the text, are also areas deserving of exploration.

In acknowledging the limitations of this systematic review, several aspects must be addressed. First, only 20 studies were included for analysis from five databases. Therefore, it is essential to explore additional search engines, such as SpringerLink, SAGE and JSTOR, to conduct a more comprehensive exploration of the review topic. Second, a deficiency exists in qualitative studies regarding the reviewed

topic, particularly in investigating EFL or ESL learners' genuine attitudes toward metacognitive reading strategies after utilizing them, because the preferences of EFL or ESL learners for metacognitive reading strategies could serve as a valuable demonstration of their effectiveness. Third, among the six quasi-experimental studies explicitly showcasing the effectiveness of metacognitive reading strategies, two failed to specify the intervention period, thereby potentially impacting the validity and reliability of the findings. Additionally, while correlational studies reviewed in this review affirmed the positive relationship between metacognitive reading strategies and EFL or ESL reading comprehension, they did not directly demonstrate the effectiveness of metacognitive reading strategies compared to experimental studies. Therefore, there is a need for experimental studies on the reviewed topic.

7. Conclusion

This systematic review synthesized 20 studies that focused on the efficacy of metacognitive reading strategies for enhancing and fostering the reading skills of English language learners. A preliminary analysis of the background information revealed that metacognitive reading strategies have expanded their utility beyond classrooms for second-language learning and contribute to enhanced reading instruction in various countries and regions. Moreover, metacognitive reading strategies have been concretized in the MARSJ and its revised versions in relevant studies, and problem-solving strategies were found to be the metacognitive reading strategy most often used in readers' English reading processes. This review affirms the findings of prior studies regarding the advantages of employing metacognitive reading strategies to advance the reading proficiency of English language learners. It uncovered that metacognitive reading strategies could effectively enhance reading comprehension across three key domains: the quality of schema, understanding, and critical thinking. In addition to the 20 relevant studies reviewed in this paper, this review also cited similar studies conducted in the United States over the years. The results consistently indicate that metacognitive reading strategies could effectively improve the English reading abilities of learners, regardless of whether English is their native or second language. At the end of this paper, the authors also elaborated on the implications and limitations of the study and suggested recommendations for future studies.

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