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Metacognitive Awareness of Young EFL Learners: A Case Study on Two Siblings

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Abstract
This study aims to explore how two young EFL learners who are siblings demonstrate metacognitive awareness. A case study design was employed, incorporating interviews, observation checklists, and field notes to gather data. The participants were two young EFL learners studying in a private course. The older learner (FZ) is 12 years old and is a seventh-grade student, while the younger one (GV) is 10 years old and is in the fifth grade. Data was analyzed using thematic analysis. Results found that both students demonstrated metacognitive knowledge in declarative, procedural, and conditional types. In metacognitive regulation, the types that mainly occurred were monitoring, debugging, and evaluating. Findings declared that both participants demonstrated metacognitive awareness in EFL learning, including metacognitive knowledge (declarative, procedural, and conditional) and regulation (monitoring, debugging, and evaluation). Despite some shared patterns particularly in metacognitive knowledge the older learner showed more structured, reasonable, and consistent patterns in the overall awareness, while the younger learner showed more spontaneous and reactive patterns.

Keywords: EFL learners, metacognition, metacognitive awareness

1. Introduction

English as a foreign language (EFL) teaching-learning process nowadays has shifted from teacher-centered to more learner-centered approaches. Not only does it result in more enhanced engagement, but it also improves academic outcomes (Bremner et al., 2022). Learner-centered approach lets students do the learning more, and teachers act as a facilitator of learning. Neuroscience, biology, and cognitive science have proven that the one who does the work does the learning (Doyle, 2023). This

implies that when students are given the chance to practice and are more involved in the learning process, they eventually learn something new, whether they do it correctly or learn from their mistakes. Research also found that students are satisfied with the learner-centered approach applied in their classrooms (Kim, 2023; Matsuyama et al., 2019). When students are satisfied with their learning, they perform better. This leads to feeling more motivated and achieving more improvements. Students with higher achievements appeared to care more about their learning progress (Abdelrahman, 2020; Vandergrift, 2005). They want to know what the teachers have planned for their learning, monitor their progress, and get proper feedback for evaluation. This whole process of a learner keeping an eye on their current learning is what is referred to as metacognitive awareness.

In terms of understanding their own learning process, young EFL learners are often under-researched. Many researchers have reported more research on adults than on young EFL learners (Abdelrahman, 2020; Bui & Johnson, 2024; Harrison & Vallin, 2018; Jafarpanah & Farahian, 2016; S. Naeem et al., 2022; Salehi & Bolandifar, 2025; Schraw & Dennison, 1994; Tuononen et al., 2023). As (Flavell, 1979) said, in terms of understanding their own learning process, young EFL learners are often under-researched. Many researchers have reported more research on adults than on young EFL learners (Whitebread et al., 2009). This implies that even if young learners use metacognitive behaviors, they may do it implicitly or unrecognizably, which leads to not accurately reporting them. Therefore, based on this problem statement, the researcher found it necessary to research metacognitive awareness in young EFL learners, specifically in the case of two siblings who share more similar contexts in their learning. Based on the introduction, the researcher made the following research question "How do two siblings, who are young EFL learners demonstrate metacognitive awareness?"

2. Literature Review

2.1 Metacognition and Metacognitive Awareness

Metacognition is widely known as one's ability to think about their own thinking process. This concept was first introduced by Flavell (1979), who stated that metacognitive experiences are conscious thinking or emotional experiences that occur during an activity and concern any aspect of it, usually about how well it is progressing. Meanwhile, to be aware of one's own metacognition aspects that occur during an event is later called metacognitive awareness (Schraw & Dennison, 1994). In learning, it refers to students' understanding of their own learning strategies, as well as how, when, and why they can successfully employ them (Harrison & Vallin, 2018; Schraw & Dennison, 1994). Research has shown that learners with higher metacognitive awareness are more strategic and perform better than learners with lower awareness (Hidayat et al., 2025; Stanton et al., 2021). This indicates that it is essential to understand learners' metacognitive awareness, not only about what they learn, but also how they learn.

2.2 Metacognitive Awareness in EFL Learning

In EFL contexts, metacognitive awareness is essential to achieve better English skills, benefiting both learners and teachers. Researchers have emphasized the importance of metacognitive awareness in EFL learning. Some noted that it promotes independence and lifelong learning (Stanton et al., 2021; Xu & Zhang, 2024). Meanwhile, a recent study reported that learners with higher metacognitive awareness employed more strategies in learning than learners with lower one, noting that the latter employed low self-monitoring (Geng & Su, 2025; Teng & Mizumoto, 2025). Furthermore, other research has reported some of the major problems that might occur, caused by low metacognitive awareness, such as poor self-regulation (Bui & Johnson, 2024), higher language anxiety and lower self-efficacy (Salehi & Bolandifar, 2025). For teachers, to help students achieve better in English language learning, it is fundamental to address how far students can reflect on their progress, as to foster autonomous learning.

Not only looking at levels of metacognitive awareness, but also understanding students' awareness demonstrated in the learning process alone helps teachers to overcome learning challenges that may

occur. Research has shown that the understanding of students' metacognitive awareness helps teachers set out what to do to make learning more effective, as it also assists the teaching practice and assessment (Pintrich, 2002; Stanton et al., 2021; Tuononen et al., 2023). More metacognitive skills are also suggested for teachers to be employed in their teaching (Wilson & Bai, 2010; Xu & Zhang, 2024). In addition, teachers need to know not only about what kind of instructions to give, but also the proper way to give instructions that will enhance students' metacognitive awareness (M. H. van Loon et al., 2021; Wilson & Bai, 2010). This implies that a good understanding of students' metacognitive awareness is also useful for teachers or instructors to determine whether learners need additional assistance or not. Therefore, the researcher found it is crucial to seek students' metacognitive awareness as the gate to a more effective EFL teaching and learning process.

2.3 Research on Metacognitive Awareness in Young Learners

As previously stated, research has focused more on metacognitive awareness in adults. Meanwhile, the area of children or young learners remains under-researched. Research on metacognitive awareness in children or young learners was mainly focused more on a quantitative approach, carrying descriptive, quasi-experimental, correlational, and quantitative-based longitudinal studies (Baltaci et al ., 2016; Palladino et al., 2025; Sato & Dussuel Lam, 2021; Suharto et al., 2025; Telaumbanua et al., 2024; Van Aswegen et al., 2019; van Loon et al., 2021; Xu & Zhang, 2024). Few studies have focused on a qualitative approach, mainly in the context of EFL learning. Previous studies that carry a qualitative approach are found to be in case study design, action research, and qualitative-based mixed-method studies (Branigan & Donaldson, 2019; C. C. M. Goh & Kaur, 2017; C. Goh & Taib, 2006; Nurwahidah, 2018; Rahma & Anugerahwati, 2024; Suharto et al., 2025; Wa & Tungalag, 2024). These studies were focused more on the classroom contexts and interventions. However, few studies have contributed to seeing the metacognitive awareness of smaller and specific cases, such as the case of two young siblings. Recent studies noted intergenerational links and genetic correlates of metacognitive beliefs derived from more correlational data within families, with more focus on parental beliefs rather than specifically on siblings (De Francesco et al., 2025; Marliyani & Suradijono, 2019). Therefore, a study focusing on siblings' context is needed to fill the gap in these studies.

3. Research Methods

This study holds a qualitative approach with a case study research design. It focuses on two siblings young EFL learners, as a bounded case situated within a private English course. The case was selected because the participants share the same family context and learning environment. This allows the researcher to deeply examine how metacognitive awareness is demonstrated, while underlining variations related to age and cognitive development. More details are presented in the following sections.

3.1 Participants

The participants are two siblings: a fifth-grade student (10 y.o) and a seventh-grade student (12 y.o) learning English both in their school and at home (private course). The researcher used initials for both participants: GV for the younger and FZ for the older. Although now they do not study in the same school, they used to attend the same primary school. Another shared context is from a private English course with the same private tutor (studying separately, not together). They also have the same habit of acquiring the English language outside of the studying session, which is from watching YouTube videos in English about their favorite topics, such as history, aviation, animals, comedy, and nature.

3.2 Instruments

The interview guideline and the observation checklists were made by adapting the metacognitive awareness inventory (MAI) from Schraw & Dennison (1994). A simplified version of these instruments was used since the participants are younger learners. Some adaptations were needed, since the MAI was designed for adults. The semi-structured interview used 8 questions as a guideline, each of which

represents metacognitive knowledge (declarative, procedural, conditional) and metacognitive regulation (planning, managing, monitoring, debugging, evaluation). As for the observations, the researcher used observation checklists accompanied by field notes to briefly describe the observations and increase the trustworthiness of the research.

3.3 Research Procedure

Before collecting the data, the researcher asked for the parents' permission because the participants are underage. After having the permission, the researcher then conducted the observations and interviews. The English course observed was the one they studied with their private tutor at home, which they studied separately. Each study session lasts for 90 minutes, with a frequency of twice a week. There were five observations taken through direct observation and videos to be later examined. During each course, the researcher focused on writing details in the field notes. The interviews were taken after the course ended, taking approximately 15-30 minutes, mostly to reflect on the lesson.

3.4 Data Analysis

A systematic thematic analysis was used to theme up results according to metacognitive awareness aspects. The aspects attempted to be identified were those of the MAI; however, the researcher decided to analyze only the aspects that strongly emerged from the research. The remaining aspects were briefly reported. The researcher analyzed by following some steps of a systematic thematic analysis, which are: transcription, keyword selection, coding, categorizing, interpreting, and developing conceptualization (Braun & Clarke, 2006; M. Naeem et al., 2023). In short, after gathering the data, the researcher read the transcription, determined keywords used to match the set themes, interpreted, and developed the interpretation.

4. Results

This section provides findings about the participants' metacognitive awareness, GV (younger student), and FZ (older student). Although the framework includes eight categories, the three main findings were clearly seen in six categories. In the planning and information management aspects, the data found is minimal. Therefore, those data are not displayed as the main findings. This section displays a direct comparison between two siblings by seeing the pattern answers that emerged through interviews, behaviors during observations, and field notes. The direct quotations followed by the initials were written separately. These were responses to the interviews only. Shorter quotations from field notes results are embedded within and are not displayed separately from paragraphs.

4.1. Metacognitive Knowledge

4.1.1. Declarative Knowledge

Based on the findings, it is found that both students show metacognitive awareness about their English skills, but how they expressed it was completely different. GV shows his understanding spontaneously with more emotional reactions. In the observation results, he completed a fill-in-the-blank task confidently. Field notes showed that he said "easy-peasy" when facing such activity. He also added, "I think I'm done, it's too hard", when he was asked to write. Based on the interview results, when mentioning writing activity, he considered writing as a skill that is too hard. Below are example responses from both students on whether they find English easy or hard, and the part of English skills they think they are good at.

GV: "I think in between."

GV: "I think I'm good at speaking, but I'm bad at writing."

FZ: "English is easy because I already memorized many words, and I watch too many YouTube videos."

FZ: "It's simple and fun."

FZ: "I'm very good at spelling, reading, and speaking, but I'm very bad at writing."

On the contrary, FZ was found to give a more directed and reasonable explanation. From interviews, he reported confidently that English is easy for him and he could tell the reason easily. Observations showed that he could clearly identify skills that he lacks and is good at. Compared to GV, FZ declarative knowledge seems to be more structured.

4.1.2. Procedural Knowledge

In terms of procedural ability, both students were reported to demonstrate steps in doing tasks, but the stability was quite different. GV followed more spontaneous steps. This can be seen from observation results, such as asking questions in the middle of doing tasks, rereading, or suddenly correcting himself when noticing a mistake. From the interview results, he showed the intention to use strategies, but when asked why he did so, he said he did not know the reason. Below are responses from both students on when they use specific strategies and why they use them, by the time they learned about vocabulary, compared to writing.

GV: "I don't know. Normally, I don't do anything" (vocabulary)

GV: "In writing normally I think first, or I think and write at the same time" (writing)

GV: "I don't know." (when asked why he did that)

FZ: "When learning new English words, I usually memorize it and study the words' meaning. I'll just keep it in my mind before I search the meaning, sometimes I note it in my note app."

FZ: "I think it's the best way to memorize words."

FZ: "When writing, I usually modify the example, making opening, information, and then conclusion. This helps me better."

In this comparison, FZ showed a more stable pattern. He could explain his learning routines, such as noting words and searching for the meaning. Field notes reported that he read the questions in reading comprehension before reading the whole text. When writing, he also followed the opening-body-closing pattern and considered this routine effective for him.

4.1.3. Conditional Knowledge

The ability to choose which strategy is more effective seems to be the aspect that most distinguishes both students. In the observations, GV was prone to changing strategies when feeling confused or hindered. He talked to himself many times or verbalized ideas to the teacher when he was confused about what to write. He also found switching from reading aloud to reading in silence. He also chose strategies suited to the tasks, shown by skipping the left-out question in listening, moving forward, and listening to it again later. Although observations reported that he used this strategy to get better focus and achievement in the tasks, results from interviews reported that he was not aware of the strategies he applied during tasks. Additionally, he only considered getting help with note-taking only when the topic was hard.

GV: "Normally, I use notes only when it's hard."

Meanwhile, FZ had more range in strategy use and chose them with more consideration. In the observations, when the lesson required him to bring his devices into the course, he was found to search on Google about things that he did not know. Although it took a long time, he later asked the teacher if he was still confused. The following responses show his consideration of using the strategies.

FZ: "I like to use pictures, videos, talking to someone, and talking to AI to help me."

FZ: "It helps me because I can find it (the help) anywhere, and it's not complicated."

FZ: "Search engine like Google, dictionary, English textbooks."

FZ: "Because it translates and explains the things that I study."

4.2. Metacognitive Regulation

4.2.1 Monitoring

In this aspect, GV relied more on the teacher's reaction to ensure his understanding. Results from observations show that he checked progress during tasks by rereading and correcting tasks himself. He also reported showing verbal signs of noticing mistakes, such as directly correcting himself in the middle by saying, "I mean 6 o'clock", as a corrected response to his "six-zero-zero." The following were his responses to whether he knows if he understands or makes a mistake.

GV: "I ask my teacher."

GV: "If I do it correctly, then I understand."

GV: "If my teacher corrects me."

GV: "If my teacher says it's wrong."

Meanwhile, FZ showed a more systematic monitoring. From observations, it can be seen that he read his work many times before saying it was finished. He was reported to slow his pace according to his understanding, but also used the teacher's expressions as confirmation. The following were his responses to whether he knows if he understands or makes a mistake.

FZ: "If I can answer the question easily and fast."

FZ: "I know if I make a mistake by looking at my teacher's face."

4.2.2 Debugging

Both of the students were reported to have different ways of handling confusion. GV directly asked for the teacher's help when he did not understand. From the observations, when he identified errors or confusion, he tried to fix them right away. It was also reported that he used the available resource, which was the teacher. The following are his responses to what he does when he does not understand something.

GV: "I ask the teacher"

GV: "Usually about spelling or asking things in Indonesian"

On the contrary, observations showed that FZ tried to handle difficulties using another source first, such as a textbook or notes, before finally asking the teacher. It was also reported that in learning, he had some quiet moments, scanning what potentially could go wrong. Additionally, FZ was reported to ask for repetitions and verbalize his confusion. The following was his same idea in similar responses on what he does when he does not understand something found in the interviews.

FZ: "when I don't understand something, I look it up in the book, or I'll ask my teacher."

4.2.3 Evaluation

In the evaluation stage, GV was found to report a similar thing, showing the evaluation stage on multiple responses. Findings in the interviews showed that he usually rechecks after finishing tasks. He evaluated the finished tasks by rereading, rechecking whether he missed things, and whether he did them correctly. These are shown in the following responses.

GV: "Usually yes."

GV: "Reread it, if it's perfect, I'm done."

GV: "Checking if I'm already done all of them, sometimes checking correct or not."

GV: "I check if I forgot to do things."

He was also reported to express self-evaluation and reflect on what was learned from the observations. Field notes reported that he checked spelling errors before submitting, and verbalized self-evaluation expressions, such as "at least I didn't fail", "I think I didn't do it good." He reflected on what he had learned by responding to the teacher's reflective question at the end of the course. For example, he finally knew that the verb 'dream' could change into either 'dreamed' or 'dreamt'. In addition, he also noted that he just knew that in the profession, people may sell a service or a product.

Meanwhile, FZ was found to perform a deeper evaluation. From the observations, it was found that he demonstrated similar things to GV, which were rechecking the finished task before submitting, expressing self-evaluation, and reflecting on what was learned. He expressed self-evaluation by saying "Yeay, it's not bad", and reflected by saying things such as "never heard of that before", and "I see now". It was noted that he just knew that a subject in a sentence can be very long, and the contraction 'He's' can mean 'he has', not only 'he is'. From the interview results, FZ reported that he scanned his tasks to recheck and ensure the quality of his tasks. He reported multiple responses indicating similar findings in the following.

FZ: "Usually I check, I scan for mistakes or things I haven't added."

FZ: "I'll usually scan it for longer writing or read it again for grammar questions to see what's missing or wrong, and ask my teacher."

FZ: "I am always scanning the questions to see what's wrong, rereading the questions."

5. Discussion

The findings revealed that both participants had developed metacognitive awareness in their English learning, but demonstrated it in both similar and different ways. Overall, FZ exhibited a more structured and consistent metacognitive profile, whereas GV displayed a more reactive, emotional, and context-dependent metacognitive profile. This difference has strengthened Flavell's view of metacognition, that metacognitive development in a younger learner is gradual (Flavell, 1979). The difference in their development aligns with recent studies focusing on slightly different levels of students (primary and secondary, second and fourth grade), reporting that students' metacognitive development was less active during the primary school period and increased at the secondary school period, and older students tend to have a more stable control and more general metacognitive skills (Bakkaloglu, 2020; M. van Loon & Roebers, 2024). This fits the fact that FZ is the older and GV is the younger, who share different characteristics according to their age difference.

In the aspect of metacognitive knowledge, both GV and FZ showed declarative knowledge about their skills and weaknesses. They could notice that they are good at a certain skill and lack another. However, GV expressed the declarative knowledge in a spontaneous and emotional response, while FZ expressed it in a more directed and reasonable way. This shows that in a younger learner, the declarative knowledge is more intuitive and situational than in an older learner. It corresponds with recent research stating that in young learners, metacognition and emotion interact with each other and contribute to learning (Palladino et al., 2025; Van Aswegen et al., 2019). This result is also in line with some studies, which noted that although young learners demonstrate and report metacognitive knowledge, they still need help from teachers in developing their metacognitive knowledge (C. C. M. Goh & Kaur, 2017; C. Goh & Taib, 2006; Van Aswegen et al., 2019; M. H. van Loon et al., 2021). Therefore, the declarative knowledge of GV and FZ supports the theory of metacognition, noting that metacognitive awareness development is gradual.

The findings on procedural knowledge showed that both participants had developed this type of metacognitive knowledge, but the quality and stability of use were distinctive. GV showed spontaneous and slightly unplanned use of strategies, for example, immediately rereading, asking in the middle of

tasks, or fixing errors impulsively without a clear understanding of the reason behind the use of the strategy. This emerging pattern aligns with some research, indicating that in a younger learner, the learning procedure is still in the explorative or foundational stage and highly influenced by the ongoing situation (S. Chen et al., 2025; Teng & Zhang, 2024). Meanwhile, in FZ, the procedural knowledge was more structured and reflective. He was able to explain steps that he used clearly, such as memorizing words, searching for word meaning, taking notes, and using the opening-body-closing pattern in writing. This indicates that in an older learner, the learning strategy is not only used, but also understood as part of a conscious and planned learning (Bakkaloglu, 2020; Mufidah et al., 2023; Paulus et al., 2014). This finding revealed that the ability to articulate reasons behind the use of strategy is one of the important indicators of metacognitive development.

The conditional knowledge is found to be the most distinguishing aspect. GV showed an initial stage in choosing strategies based on the task difficulty level, for instance, taking notes only when the lesson was challenging, or adjusting the reading approach when losing focus. However, the choice of this strategy tends to be more reactive than preventive, which is done after experiencing confusion or difficulty. Meanwhile, FZ showed the use of conditional knowledge that was more mature and flexible. He not only chose strategies based on needs, but also showed awareness and effectiveness of those strategies. FZ was able to mention the reasons why specific strategies help him, such as the use of pictures, videos, search engines, a dictionary, and AI as additional help. This showed that he used strategies not solely to help him with the task, but also to understand when and why those strategies were effective. Similar to previous metacognitive knowledge, conditional knowledge is also developed gradually along with cognitive maturity and more learning experience (Toikka et al., 2024; Van Aswegen et al., 2019). The overall findings indicate that conditional knowledge not only relates to the number of strategies used, but also the consideration in choosing which strategy most fits the task requirements and learning condition.

Meanwhile, the findings in metacognitive regulation reported that either GV or FZ had shown awareness, particularly in monitoring, debugging, and evaluation. Similar to the findings on metacognitive knowledge, some similarities and differences were also found. In monitoring, both GV and FZ still relied on teachers' cues, such as facial expressions, and to their questions. This finding is consistent with some research that found young learners rely more on external cues for the judgment of correctness (Kolloff et al., 2025; Koriat & Ackerman, 2010; Prasetyo et al., 2025). In ensuring his learning progress, GV relied more on external sources, specifically the teacher, noting that he knew he was wrong or correct when the teacher said it was wrong or correct, or known as direct corrective feedback (Mulyani, 2023). He also showed awareness of mistakes through spontaneous verbal correction and relied more on direct feedback. Although FZ still used the teacher's expression as a confirmation strategy, he did not fully depend on that. This indicates that in an older learner, the monitoring process is started to be internalized as a part of self-regulation, not just as a response to an external condition.

Furthermore, the debugging aspect showed even clearer contrasts. GV directly asked the teacher for help when facing uncertainty, which shows awareness of difficulties with limited problem-solving skills. On the other hand, FZ tried to face difficulties by himself first by looking at the textbook, notes, or other sources before asking for the teacher's help. This describes the development of problem-solving skills, which is greater in older learners than in younger ones, and later supports the findings of some research (Palladino et al., 2025; Paulus et al., 2014; Toikka et al., 2024). In the observations, he asked for repetitions and verbally expressed his confusion. This indicates that he did not solely recognize difficulties, but also had the initiative to solve the problem strategically before depending on others, which contradicts what was found on GV.

In the evaluation stage, both participants showed the basic ability to evaluate their own work. GV evaluated his work by rereading the finished tasks, rechecking whether there was something they missed, and ensuring that he had finished every question in the given task. He also showed self-evaluation

through emotional expressions, such as simple satisfaction or doubt about his work. Moreover, he could reflect on what he had learned after the reflective questions asked by the teacher. This aligns with some research that found that metacognitive abilities in younger learners are still oriented towards prompts from the teacher and that interventions may improve the development of those abilities (C. Chen et al., 2022; Drexler & Zelazo, 2025; Eberhart et al., 2024). Meanwhile, FZ demonstrated a deeper and more structured evaluation. He not only checked whether the task had been finished, but also scanned for mistakes, assessed the quality of his answers, and reflected on new things he had just learned through some expressions and the teacher's reflective questions with more confidence in his explanation. This was particularly caused by the amount of engagement in reflection FZ had experienced before, as some research reported about the relationship between learning experience and metacognitive awareness (Drexler & Zelazo, 2025; Flavell, 1979; Van Aswegen et al., 2019). His reflection on the sentence structure and the contraction meaning also indicates an evaluation process that involves a more complex linguistic awareness. Overall, these findings demonstrated that metacognitive evaluation develops as students get older, from a simple rechecking to a more critical reflection on the learning process.

6. Conclusion

This research revealed that both participants, who are siblings, GV and FZ, have demonstrated metacognitive awareness in EFL learning, presenting both metacognitive knowledge (declarative, procedural, and conditional) and regulation (monitoring, debugging, and evaluating). In metacognitive knowledge, both showed *declarative knowledge* by the awareness of their strengths and weaknesses in English skills, *procedural knowledge* through the use of strategies, such as vocabulary memorization, rereading, and using steps in writing tasks, and *conditional knowledge* through the ability to choose a strategy based on the level of difficulty. In metacognitive regulation, both showed *monitoring* skills while working on tasks, *debugging* when fixing mistakes or facing uncertainty, and *evaluation* through rechecking tasks and reflecting on what was learned. Although they both demonstrated all of those components, differences still exist in terms of quality and stability, where GV demonstrated a more spontaneous, direct, and reactive awareness, while FZ demonstrated a more structured, considerate, and reflective awareness. These differences presumably occurred due to the age gap, which relates to metacognitive development theory. This finding implies that it is necessary to explicitly teach metacognitive strategies, giving a more directed scaffolding, such as using metacognitive instructions. Meanwhile, in the students' learning process, support for self-reflection, comprehension monitoring, and developing metacognitive awareness should be done gradually.

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