



Teaching Metacognitive Strategies in Reading through CALLA to Non-English Major Students in a Vietnamese University

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ABSTRACT

Since the 1990s, several studies on teaching metacognitive methods to improve reading comprehension have been undertaken worldwide. However, learners' views regarding using a specific model of metacognitive strategy instruction in reading, which adds to the success of teaching metacognitive methods, have not yet received much attention, particularly in Vietnam. This research is an attempt to fill that gap. This study investigates the learners' attitudes towards training metacognitive strategies through the Cognitive Academic Language Learning Approach (CALLA) model in reading. To achieve this aim, the author carried out a mixed-methods design study on 52 non-English-majored participants at a university in Vietnam. The research tools involve an attitudinal questionnaire and group interviews. The findings of this study reveal that the employment of the CALLA model in teaching metacognitive strategies received neutral to positive attitudes from most students. However, the instruction itself exposed some shortcomings that must be addressed. In addition, some statistical differences were found in the cognition of high and low language proficiency groups. Based on the findings, some specific recommendations have been made for teachers and learners in teaching metacognitive strategies.

1. INTRODUCTION

Since the first introduction by Myers and Paris in 1978 in the research on children's metacognitive knowledge and awareness, the association between metacognition and metacognitive methods and reading comprehension has been framed (Israel, 2007). Following this novel opening, there was more and more research on how teaching metacognition and metacognitive strategies were incorporated into the curriculum of reading training in order to boost reading competence during the 1970s and 1980s. As a result, the transition of metacognition in cognitive psychology to educational psychology to reading in education has been progressively marked. Many distinguished scholars have emphasized the influential role of metacognitive strategies in education. O'Malley and Chamot (1990) state that "Students without metacognitive approaches are essentially learners without direction or opportunity to review their progress, accomplishments, and future directions" (p. 561).

Despite the theory about the positive relationship between reading and metacognitive strategies, studies conducted in Vietnamese settings are limited (Ngoc, 2022). It is a big challenge for the author to find the literature on applying metacognitive strategies in teaching reading comprehension in Vietnam. There are several public papers on metacognition in teaching math or other science subjects with clear explanations (Hoang, 2020). In some studies in teaching English, writers mainly focus on the preferences of learners regarding metacognitive strategy usage (Vo et al., 2023) without metacognitive strategy training. Consequently, there is a gap in learners' attitudes towards training metacognitive strategies in Vietnam.

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This study aims to explore learners' attitudes towards metacognitive strategy instruction via the Cognitive Academic Language Learning Approach. Beyond that, a comparison between learners' attitudes at different language proficiency levels can be inspected. Accordingly, improvements in reading training can be made for better learners' application of metacognitive strategies. The research questions are: What are learners' attitudes towards teaching metacognitive strategies in reading lessons?; Are there differences between learners' attitudes at high and low language proficiency levels?.

2. LITERATURE REVIEW

2.1. Metacognitive strategies in reading comprehension

Reading capacity is a central aspect of literacy and is usually associated with academic success. The core target of the reading process is to comprehend or understand the texts required. According to Grabe (2009), reading is considered an interactive cognitive process in which readers' interaction is associated with texts and the author's perspectives related to them. Thus, to comprehend reading texts successfully, readers should employ various skills or strategies at both cognitive and metacognitive levels. At the higher level, the metacognitive requires groups of strategies regarding planning before reading, monitoring while reading and evaluating reading experience (Carrel et al., 1998; Paris & Myers, 1981). The critical role that metacognition plays in reading comprehension in both L1 and L2 was confirmed by Grabe (2009) and Pressley and Afflerbach (1995). However, the application of metacognitive strategies among reading learners is different because of the diversity of their notion of strategy instruction.

Throughout such a long history of its application in reading comprehension, the theory and practice of deploying metacognitive strategies in reading has collected varied evidence. In the milestone study by Pressley and Afflerbach (1995), they figured out that experts and highly skilled readers employ a specific group of metacognitive strategies in the stages of before, during and after reading, which supports their comprehension as well as builds up the links between readers and texts. The need to raise learners' metacognitive knowledge of reading and reading strategies has been noted by Sheorey and Mokhtari (2001).

2.2. Training metacognitive strategies in reading comprehension

Concerning training, there are two ways to train a strategy related to raising learners' awareness. Through explicit and implicit instruction, strategy instruction could be delivered directly and indirectly to learners. Some arguments remain about which approach is better at supporting the strategy acquisition of the learners. Implicit instruction was introduced to help students realize and apply the needed strategies in specific situations. However, the learners' awareness was a real challenge to the instructors. It urges explicit instruction to be demonstrated with clear steps to raise students' notice. Significant achievements of learners instructed directly have been presented clearly in various studies (Ellis et al., 2014).

The Cognitive Academic Language Learning Approach (CALLA) is supposed to be a great representative model of explicit instruction. Compared with other models for strategy instruction, CALLA is famous for the focus on students' needs and thoughts in its 5 phases (O'Malley & Chamot, 1990). It contributes to the development of learners' independence in applying learning strategies. The model of CALLA was updated by Chamot (2005), including six steps, i.e. preparation, presentation, practice, self-evaluation, expansion and assessment.

2.3. Learners' attitudes towards training metacognitive strategies in reading comprehension

Attitude plays an essential role in the language learning process due to the different components involved. Firstly, affections present the students' state of liking an object and its influence on their learning process. Students and teachers would benefit from it for further modification in teaching activities (McKenzie, 2010). Secondly, in terms of cognitions related to learners' beliefs about the knowledge, they acquire their comprehension process. When learners have reasonable beliefs about what they get from the lesson, they will be motivated in their learning for better performance. Finally, regarding behaviours, Kara (2009) claims that the favorable attitudes of learners can be used to predict their favorable behaviors. Positive thinking and active engagement are also established for better results. Furthermore, the application of new knowledge in real life quickly happens.

In terms of approaches to investigating learners' attitudes, McKenzie (2010) states that there are two approaches: the behaviorist and the mentalist. The behaviorist defined attitudes as outer behaviors which can be easily observed and measured. Hence, the results can only be inferred from their behaviors and actions. Two viral emotional elements, feelings and beliefs, are not investigated (Baker, 1992). In contrast, according to the mentalists, learners' attitudes

cannot be divided, including affective, cognitive, and conative or behavioral components. Affective factors deal with feelings. The cognitive gives information about learners' beliefs, knowledge, and perceptions. The last factor, the conative or behavioral, works on learners' condition to act, behavioral intentions and interest. Comparing the components of the two approaches, the mentalists require a more comprehensive and more explicit frame for examining learners' attitudes. Thus, in this study, attitudes should be analyzed under three core factors, i.e. affections, cognitions and behaviors of McKenzie (2010) and Zimbardo & Ebbesen (1977). Zimbardo and Ebbesen (1977) define the affective component as "a person's evaluation of, liking of, or emotional response to some object or person"; the cognitive component involves "a person's beliefs about, or factual knowledge of, the object or person". Direct behaviors of a person towards the object or person are behavioral components of attitudes.

Although enormous studies related to the effectiveness of metacognitive strategy training can be found, some studies, including Widachee (2011) and Tavakoli & Koosha (2016), in the settings of Asian countries directly investigate learners' attitudes after training. The official number of studies investigating the training of metacognitive strategies in reading in Vietnam is limited (Vo et al., 2023). Thus, there needs to be more understanding of learners' attitudes in Vietnam, primarily through the CALLA model, which is hopefully fulfilled in this paper.

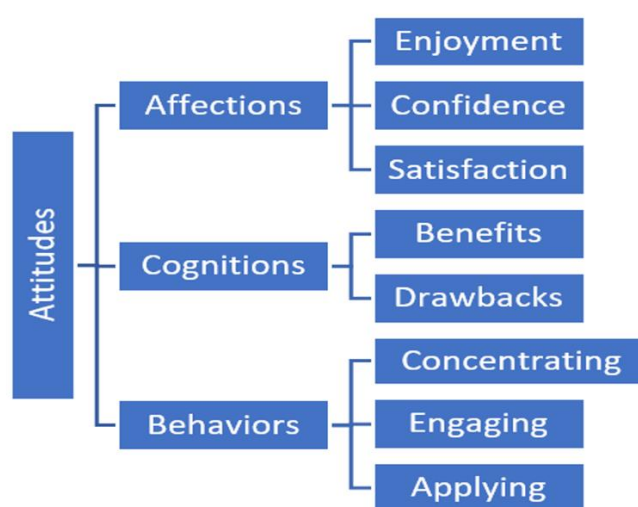


Figure 1. Conceptual framework of the study (McKenzie, 2010; Zimbardo & Ebbesen, 1977)

3. MATERIALS AND METHODS

3.1. Participants

Fifty-two participants (4 females and 48 males) were involved in this investigation. With a convenient sampling technique, the learners chosen in this study were in two intact classes, which the researcher was in charge of. They were non-English major sophomores of a university. Their language competence was evaluated based on the placement test results at the beginning of their English course. The placement test was chosen from a standardized test for measuring the students' language proficiency level. A group of 27 students in the class with the highest results was identified as the group with high language proficiency. The second group of 25 students with the lowest results was named low language proficiency group.

3.2. Research design

This study employed a mixed methods design with quantitative data from an attitudinal questionnaire and qualitative data from the open-ended questions of the questionnaire and group interviews.

3.3. Instruments

The fundamental tools of this study involve an attitudinal questionnaire and interviews.

Attitudinal questionnaire: The questionnaire is written in both English and Vietnamese. However, to ensure the learners fully comprehend all elements mentioned, only the Vietnamese version was sent for data collection. For more explicit demonstration, the questionnaire construct was presented in Table 1.

Table 1. The construct of the questionnaire

Main themes		Subsections	items	Format
A. Demographic information		Gender	A.1	Multiple choice
		Age	A.2	Open-ended
		English learning experience	A.3	
B. General opinions towards teaching and learning reading		Importance of learning reading	B.1	Likert scale
		The necessity of teaching reading	B.2	
		Overall feeling about reading instruction	B.3	
C. Attitudes towards incorporating metacognitive strategies in reading	Affections	Liking	C.1.1	Likert scale
		Confidence	C.1.2-C.1.3	
		Satisfaction	C.1.4	
		Others	C.1*	
	Cognitions	Benefits	C.2.1-C.2.11	Likert scale
		Others	C.2*a	Open-ended
		Drawbacks	C.2.12- C.2.15	Likert scale
		Others	C.2*b	Open-ended
		Behaviours	Paying attention	C.3.1
		Engaging	C.3.2	
		Applying	C.3.3-C.3.4	
		Learning more	C.3.5	
		Others	C.3*	Open-ended
D. Suggestions		Suggestions for further improvement	D.1	Open-ended

To assess the validity of the questionnaire, firstly, the researcher asked for help from her colleagues with checking whether the items in the questionnaire adequately described the concept or construct to be examined and comparing the English and Vietnamese versions to ensure a complete and clear understanding from the respondents. To prepare for the actual operation of this instrument, copies of the piloted questionnaire were delivered to the students in the pilot group of 27 participants. The Cronbach alpha value for all the items was high (.841). Each of the three main themes of learners' attitudes, i.e. affections (.818), cognitions (.882), and behaviors (.822), are higher than 0.7, the value required for reliability satisfactory suggested by Dörnyei and Taguchi (2010).

Group interview: The second instrument employed is group interviews, which were conducted to acquire the students' opinions on this strategy instruction. Based on the reading proficiency entrance test, six subjects, including three with the lowest scores (S1, S2, S3) and three with the highest scores (S4, S5, S6), were chosen to give responses. Two 45-minute group interviews were conducted after the training of metacognitive strategy training. Three questions were as follows: (1) What do you think about the instruction of metacognitive strategies?; (2) Do you think you will become a skilled reader after you are trained with metacognitive strategies? Why or why not?; (3) What should teachers do to make the instruction more effective?.

3.4. Procedure

Following the procedure planned, the metacognitive strategy training was first conducted in the two selected classes in 12 50-minute reading sessions in a General English course. The CALLA Model, with six scaffolding steps, was employed to instruct the metacognitive strategies explicitly. This model presents the gradual transition from the teacher-centered mode to student-centered. The list of metacognitive strategies trained was based on the categories of Israel (2007) and Phakiti (2006) with three groups: planning, monitoring and evaluating items. After the instruction

in the last session, an attitudinal questionnaire was distributed to all the participants with sufficient time for completion. Group interviews were conducted with three representatives from two target groups for a deeper investigation. Statistical tests of authorized SPSS 24 analyzed the data collected from the survey. Moreover, the content of group interviews was analyzed via thematic analysis.

4. RESULTS AND DISCUSSION

4.1. Results

4.1.1. Learners' attitudes towards incorporating metacognitive strategies in reading comprehension

General opinions about learning and teaching reading comprehension

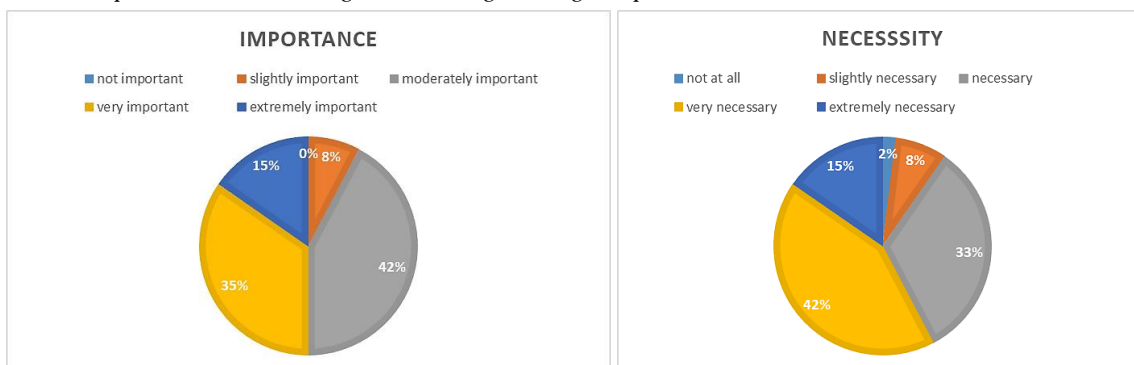


Figure 2. The importance of reading and the necessity of teaching reading strategies

Related to the vitality of reading in language learning and the necessity of teaching reading strategies for learners, two pie charts in Figure 2 show the general opinions of the learners. Accordingly, most learners felt it was important to learn reading, with 92% from the moderate to significant level. Similarly, 90% agreed that it is necessary to teach strategies in reading. There may be a correlation between the learners' awareness of the roles of reading skills and the need to teach them in language learning. However, a few percent of participants rejected the instruction, which should be investigated in the study's findings.

Learners' feelings towards the incorporation of metacognitive strategies into reading Learners' feelings towards the incorporation of metacognitive strategies into reading comprehension: The specific elements building the attitudes of learners, including affections, cognitions, and behaviors, are respectively demonstrated in Figures 3, 4, 5, and 6. The first factor of the student's feelings, affections, is depicted in Figure 3.

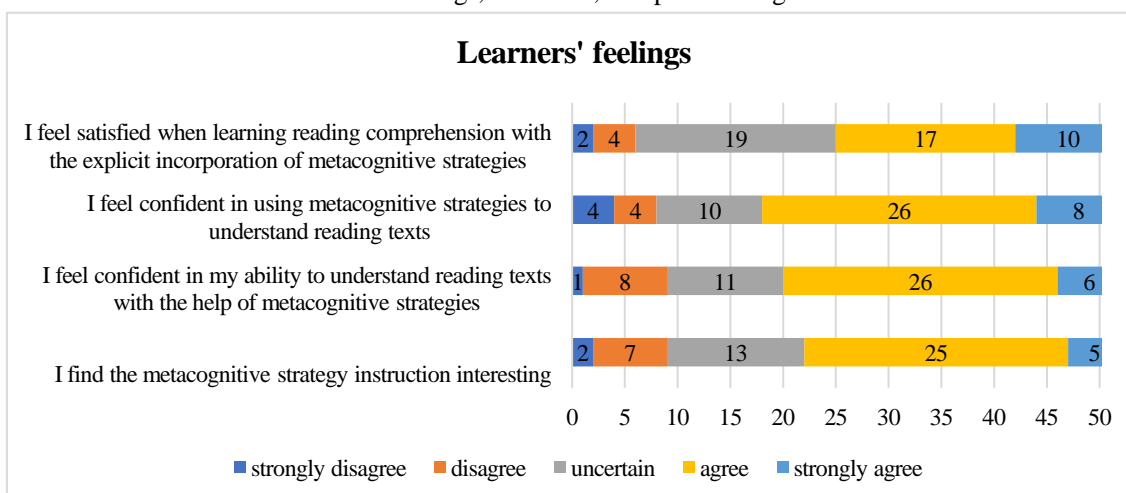


Figure 3. Learners' feelings towards the instruction

As shown in Figure 3, most students participating in the investigation agreed with all the statements. The most uncertain opinion is related to satisfaction, cited by 19 among 52 respondents.

In addition, up to 4 learners strongly disagreed with the feeling of confidence in their application of metacognitive strategies. All the contradictions shown should be investigated more.

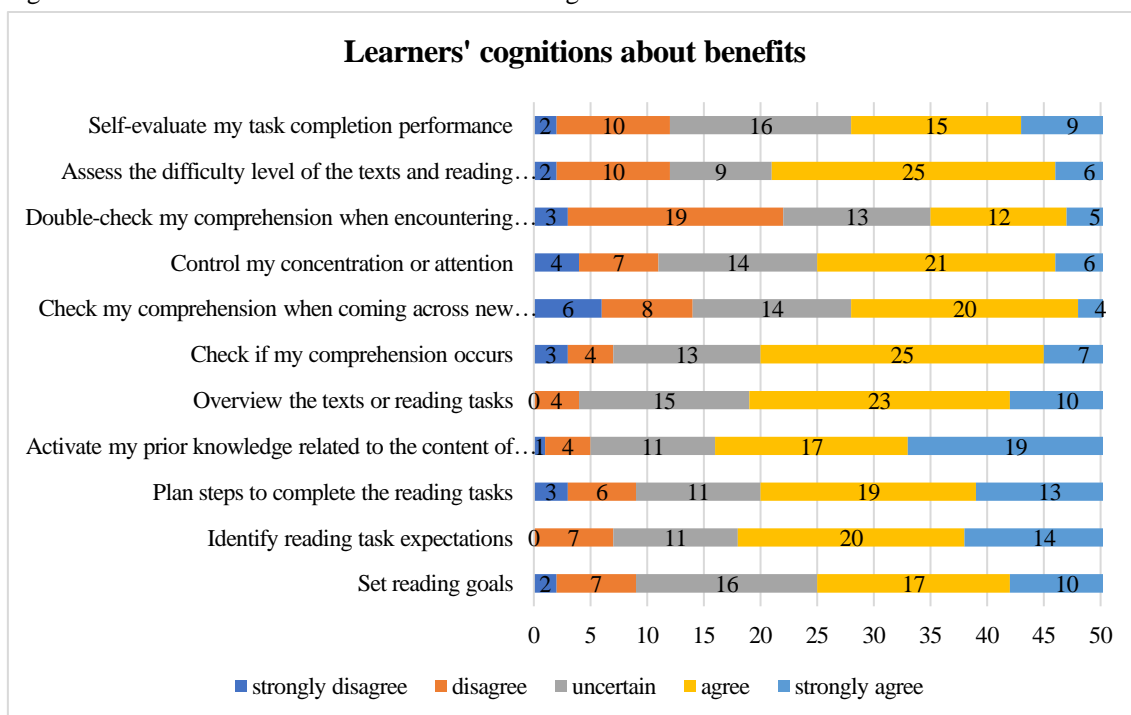


Figure 4. Learners' cognitions about the benefits of the instruction

The learners' opinions about the benefits and drawbacks of teaching metacognitive strategies in reading: The second factor of attitudes, cognition, or learners' beliefs regarding the benefits and drawbacks they got after the instruction would be assessed through Figures 4 and 5.

According to Figure 4, more than half of the respondents accepted most of the benefits. Among those, the most approved benefits were activating prior knowledge with more than 69% of the students and identifying reading task expectations with 65.4%. However, 35 learners needed help with double-checking when encountering ambiguous information. In addition, up to 6 strongly disagreed with the benefit of checking comprehension when coming across new information.

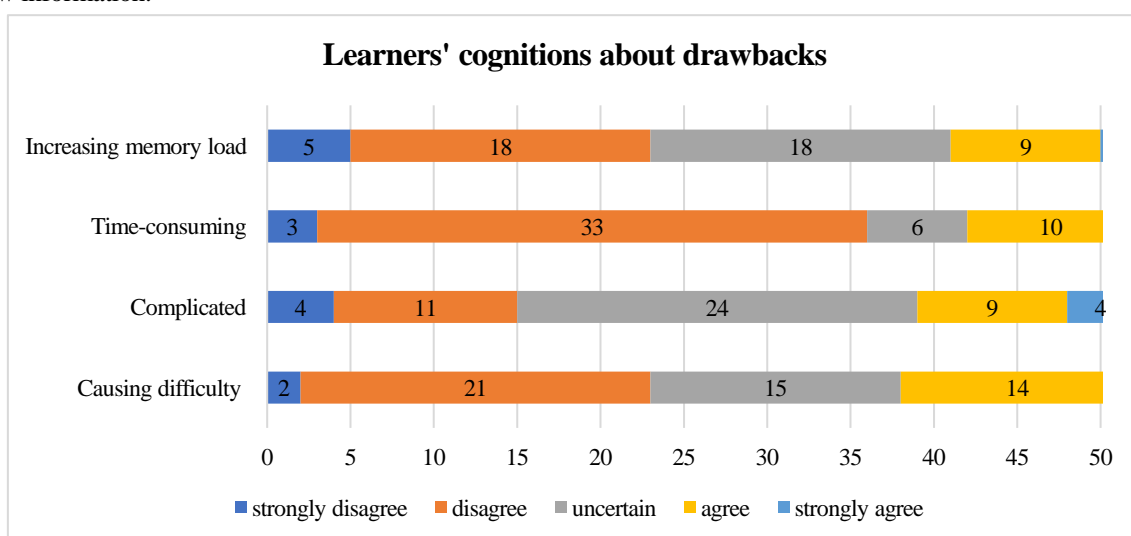


Figure 5. Learners' cognition about the drawbacks of the instruction

In Figure 5, in correlation with accepting the benefits, most learners did not think the instruction was time-consuming; they even denied other drawbacks. The most widely accepted disadvantage was that the instruction caused some difficulties. Generally looking, the learners did not encounter them much, with only a fifth of the students agreeing.

The learners' reactions to incorporating metacognitive strategies in reading: Along with affections and cognitions, the element of behaviors was analyzed in terms of students' reactions towards the instruction in Figure 6.

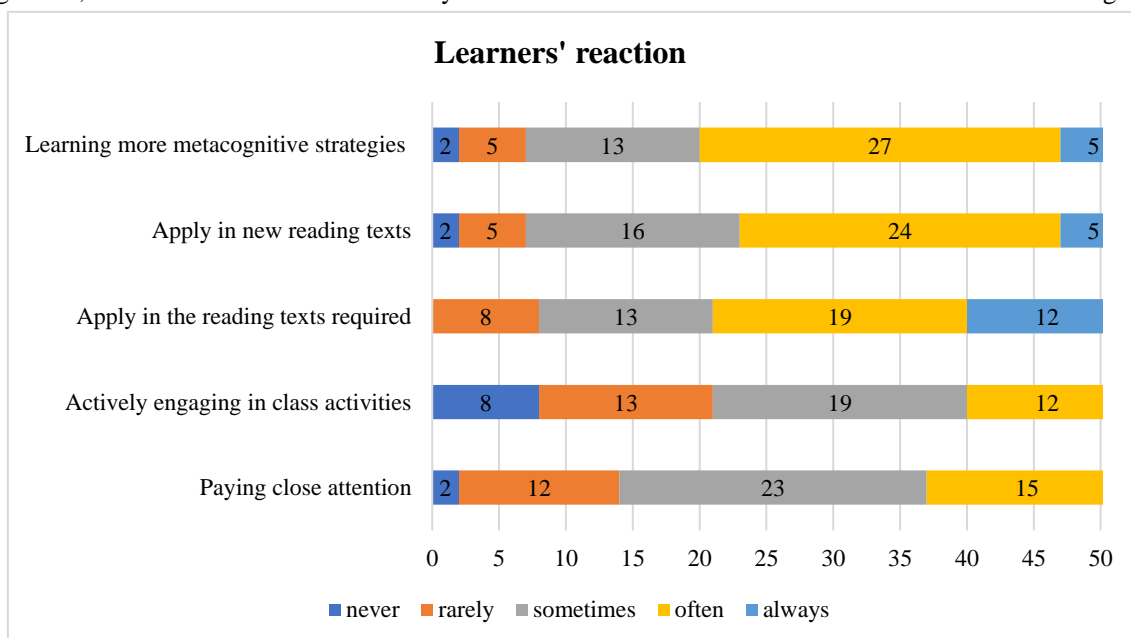


Figure 6. Learners' behaviors towards the instruction

As described in Figure 6, most learners wanted to study more metacognitive strategies and hoped to apply the strategies in further texts. However, nearly half of the students needed to be more actively engaged in the activities in their class. There may be some difficulties related to task completion organization, which appeals little.

4.1.2. The difference in the attitudes of high and low language proficiency learners

One of the study's objectives was to compare the attitudes of two groups of students categorized by their language proficiency. The findings presented included their general opinions and attitudes in the form of affection, cognition and behaviors.

General opinions about learning and teaching reading comprehension

Table 2. The difference in the general opinions of learners with low and high language proficiency

Item		Mean	Max	Min	Standard Deviation	
B.1	Importance	Low-level	3.17	5	2	.785
	high-level	3.84	5	2	.768	
B.2	Necessity	Low-level	3.19	5	1	.930
	high-level	4.04	5	2	.727	
B.3	Overall feelings	Low-level	3.63	5	2	.886
	high-level	4.02	5	3	.724	

Regarding learners' overall awareness, their opinions about the importance of reading and the necessity of teaching reading strategies, as well as overall opinions, were not very similar with the high value of mean differences, 0.67, 0.85 and 0.39 respectively.

The difference in learners' attitudes between groups: An independent sample T-test was conducted to analyze the difference in the attitudes of learners at low and high levels of language proficiency. The results of the attitudinal questionnaire are shown in Table 3.

Table 3. Independent Sample T-test of different groups of learners

	Low-level (n=25)		High level (n=27)		t(52)	p	95%CI	
	M	SD	M	SD			LL	UL
Affections	3.08	1.04	3.95	.68	-5.23	.000	-1.272	-.573
Cognitions	2.93	.98	3.61	.69	-3.52	.001	-.787	-.220
Behaviours	3.13	.99	3.73	.65	-4.62	.000	-.708	-.282

Regarding the three aspects of students' attitudes, including affections, cognition and behaviors, the significant differences between the two groups were confirmed by the *p*-values below .005. Among the three components, the mean difference in affection was the most noticeable. The controversial issues were also presented in the opinions of the students questioned.

The specific explanations from the opinions of interviewees gave more evidence for the findings of the learners' differences in terms of their understanding of the instruction, the advantages they might have and recommendations for further applications in Table 4.

Table 4. The results of group interviews

Questions	High language proficiency	Low language proficiency
1. What do you think about the instruction of metacognitive strategies?	+ useful, very interesting, effective, new (S4, S5, S6) + clear steps (S4, S5, S6)	+ good (S1) + difficult to understand (S3) + boring, lots of exercises (S2, S3)
2. Do you think you will become a more skilled reader after you are trained with metacognitive strategies? Why or why not?	+ yes (S4), sure (S5, S6) + more careful, better, faster, more confident (S4, S6) + scores increased (S4, S5, S6)	+ not sure, depend on learners (S2, S3) - some strategies are abstract, difficult to apply + Yes- help to plan in reading (S1)
3. What should teachers do to make the instruction more effective?	+ Provide more materials for applying (S4, S5) + Encourage more group activities (S5, S6) + suitable time allocated for each strategy as well as steps in the instructions (S4)	+ find suitable reading texts for low-level (S2, S3) + design more games to encourage learners to engage (S1, S2, S3)

According to the content recorded, there were some dissimilarities in the students' opinions about the instruction. For instance, most learners with high-level language skills mentioned the positive aspects of the instruction, including usefulness, interest, effectiveness, and novelty. In contrast, the opinions of the group at a low level showed some controversy. While S1 considered the instruction good, S2 needed help to understand it. S2 and S3 even thought it was not very interesting with many tasks to complete.

Moreover, the thoughts of the two groups about their progress after the instruction was similar. While the assurance was found in the high-level participants with their better performance at carefulness, reading speed, confidence, and even reading scores, the others' opinions were in two directions. S1 thought he could make progress because it helped him plan reading steps for task completion. S2 and S3, though, needed to be sure about the success of strategy applications due to individuals' abilities. As for them, some strategies were abstract in actual employment.

Therefore, the suggestions for further training varied from the perspectives of learners at different levels. The recommendations made from high language proficiency students mainly focused on applying strategies learned with materials and group activities. On the contrary, the students in the low-level group suggested more engagement for the instructions with suitable texts and games. Moreover, the time distribution and steps in instructing each strategy should also be considered.

4.2. Discussion

Research question 1

In the first research question, learners' attitudes towards the metacognitive strategy instruction incorporated in reading were evaluated based on three criteria, i.e. affections, cognitions and behaviors. It was reflected in the obtained statistics that most learners were aware of the importance of reading in their English learning. The equivalent percentage of respondents confirming the statement above agreed on the instruction of reading strategies to support reading learning. The participants' positive feelings were mainly given towards the instruction they experienced, which supports previous studies by Wichadee (2011) and Tavakoli & Koosha (2016). However, some controversial issues in feedback were found in terms of interest and the awareness of the necessity of some participants.

Firstly, from the results related to the factor of affection, it is clear that although the agreement on the confidence in strategy application was confirmed, the interest and satisfaction the participants experienced from the instruction were not guaranteed. At the same time, many learners felt more confident in understanding texts with the support of metacognitive strategies and using strategies trained. This can be due to the reasonable training duration for the participants to get familiar with the strategies taught. Only some of the learners felt satisfied with the reading instruction. Some even stated that the instruction with many tasks was boring and inappropriate for their learning. Similarly, negative opinions above can be found in the study of Wichadee (2011) from the group of low-proficiency. Therefore, to provide a profound base for deeper investigation, the analysis of the second factor, cognitions, should be noticed.

As for cognitions, learners' understanding of two main aspects, benefits and drawbacks, was reflected clearly according to the data collected. Regarding the benefit of the instruction, most students agreed at the average level. They were used to apply the strategies trained, which supports the findings in Tavakoli and Koosha (2016). Specifically, the favourite benefit noted was activating prior knowledge with strong agreement, which means that this strategy is simple and very practical for most learners to get familiar with metacognitive strategies. The strategy of planning steps for reading, which most students recommended, has various advantageous implications for reading self-training. However, the learners needed clarification about the benefits of the strategies in the while-reading stage, such as double-checking comprehension with ambiguous information or checking with new information coming across. They were likely to need some help with the strategies related to controlling comprehension. Most participants did not believe that they could benefit the strategies trained. It means some learners need help to understand and benefit from the strategies instructed. It was also reflected in the opinions of some interviewees that some strategies were abstract for employment. As a result, some controversial issues here would contribute to the suggestions of teaching metacognitive strategies related to strategy selection.

Besides, the learners needed more clarification about the disadvantages of the instruction. The most approved issue was related to the complicated feelings at the beginning of the instruction. It can be a result of the instructor and materials. In the qualitative data, the learners at low levels needed help with understanding some less common strategies. Hence, it was suggested from their opinions that the instructor should use reading texts with familiar topics and more engaging activities.

Regarding the third factor of behaviors, the learners largely agreed on applying the texts required, applying new texts and expecting to learn more. The most expected reactions were wanting to learn more metacognitive strategies and applying those strategies to understand texts. However, some students could have engaged more in the instruction or paid close attention, which is reflected in the contradiction of interviewees' opinions.

However, the findings also show some negative feedback from the respondents, which can be analyzed more deeply in the second research question related to the different attitudes of learners regarding their language proficiency.

Research question 2

Firstly, concerning the students' general opinions, their interest in and awareness of the necessity of teaching reading strategies were different in accordance with their language proficiency. Additionally, as for the three aspects of attitudes, the learners' attitudes at different levels were investigated in terms of affections, cognition and behaviors. All mean differences in the three factors were significant according to the results from Independent Sample T-tests. It means that the learners' attitudes were different based on their reading proficiency. It revealed that they both were aware of the importance of learning reading and teaching reading strategies to support learning. The high-level group had more positive feelings towards the instruction, which is consistent with the findings of Wichadee (2011), Zhang (2009) and Schunk & Zimmerman (1998). The students with high-level language skills found the instruction valuable and effective in improving their reading process. The difficulties the low-level group faced could be found in the qualitative data in the questionnaire, including that the instruction needed to be more appropriate, more interesting and less abstract for application. In contrast, the high-level felt more confident with learning strategies. Despite the time needed to follow the instructions, the high-level learners found it worth learning.

The findings of the study reflected two main points. Firstly, the learners generally have positive attitudes towards the metacognitive strategy instruction incorporated in reading lessons through the CALLA model. However, they need some help with the less common strategies for controlling comprehension. Secondly, there are some differences in affections, cognition and behaviors between low-level and high-level English proficiency learners in response to the metacognitive strategy instruction.

5. CONCLUSION

The implications based on the present study's findings should be provided for both teachers and learners. It is recommended that teachers consider and modify metacognitive strategy instruction regarding strategies, materials, and activities to be more appropriate for target learners. Strategies need to be taught over a sufficient duration for the training to be effective. They should be presented over several contexts with a variety of texts to ensure that the learners will be able to use the strategy automatically. Moreover, teachers should have some deeper investigations into learners' preferences and the difficulties they are encountering. Learners should be familiarized with planning and self-evaluating steps in applying metacognitive strategies, which promotes the application of metacognitive strategy.

With only 52 students examined, the number of participants is the limitation of this study. Further studies should involve a more significant number of participants to determine the learners' general attitudes. Learners' attitudes are a critical source for further improving instructors' teaching practices, particularly in metacognitive strategy training. More diverse and in-depth studies on metacognitive strategy training that support and consolidate the effectiveness of metacognitive methods in reading teaching should be conducted.

Conflict of Interest: No potential conflict of interest relevant to this article was reported.

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