



## **Confronting the difficult challenges of academic reading of Indonesian graduate students through the lens of self-efficacy and metacognitive strategies**

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### **Abstract**

Students' self-efficacy and reading strategies have been globally investigated. However, there is a limited number of studies in Indonesia that examined the correlation between self-efficacy and metacognitive reading strategies. This study aimed to find out the correlation between students' self-efficacy and metacognitive reading strategies, their perceptions of self-efficacy, and their metacognitive strategies. This mixed-method study used a Likert scale questionnaire and interview to collect the data. From the quantitative data analysis, the results show that there is a positive correlation between students' self-efficacy and metacognitive reading strategies of the Indonesian graduate students, which was significant at the 0.01 level ( $r = .970$ ,  $n = 33$ ). The students used the most metacognitive strategies in every stage of reading to a high degree. They also shared different strategies used when students encountered difficulties (St. 5,  $M=4.12$ ). From the qualitative data analysis, the students applied four different strategies for each reading stage. They also shared the different reasons concerning the use of metacognitive reading strategies. This current study offers one major implication. Since the students' levels of self-efficacy are affected by extrinsic aspects, teachers need to develop a professional identity that enables them to support students in developing self-beliefs and metacognitive reading strategies.

**Keywords:** academic reading comprehension; graduate students; metacognitive strategies; mixed-method study; self-efficacy

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## Introduction

Several studies have recently shown surprising results in students' reading difficulties. Some of these studies have reported issues regarding reading difficulties encountered by students worldwide, such as poor comprehension, lack of world knowledge, and less use of metacognitive skills (Bakkaloglu, 2020; Zarei, 2018). Elgendi et al. (2021) reveal that students' reading difficulties may constrain students to experience problems associated with psychological functions, including reading anxiety, procrastination, and self-efficacy. Bandura (1997) argues that reading difficulty is a major factor affecting students' reading achievements, self-efficacy levels, and reading motivation. Carroll and Fox (2017) show that the degree of self-efficacy helps students to improve reading motivation and performance. Higher self-efficacy levels have significant impacts on performance and strategies that are executed by students in academic reading (Aisyi et al., 2021). In developing a higher level of self-efficacy, a higher level of metacognitive awareness is important for students to build the quality of learning nature (Bakkaloglu, 2020).

According to Bandura (1997), self-efficacy levels prompt students to develop critical thinking skills and carry out particular tasks successfully. Several studies indicated that self-efficacy levels affect students' efforts and persistence in completing academic tasks and dealing with challenges, which, in turn, influence students' achievements (Bandura 1997; Pressley, 2002). In reading, self-efficacy plays an important role in developing students' reading skills by focusing on the incorporation of the self-learning system (Carroll & Fox, 2017). They also indicate that the successful teaching-learning process may help students to develop their knowledge of words automatically. In the reading process, teachers may help students to overcome their reading difficulties which might influence students' disengagement, apathy, and

reading passiveness (Bandura, 1997). Farizka and Cahyono (2021) find that teachers' social learning strategies can prompt students' engagement in learning. Furthermore, Galla et al. (2014) argue that academic reading self-efficacy and teachers' comprehensive engagement in reading develop over time. In addition to teaching reading, Lee and Jonson-Reid (2016) emphasize that the essence of teaching reading is to promote students' metacognitive and motivational involvement. Both metacognitive and motivational involvement will guide students to focus on academic reading processes as well. Therefore, teachers are required to build an enjoyable reading environment so that students feel more encouraged to enhance their reading performances as a result of reading engagement (Meniado, 2016).

Another challenge of implementing learning strategies in the classroom is maintaining students' learning engagement (Simbolon, 2021). Thus, students require appropriate strategies as the following action to accomplish tasks and deal with challenging situations in reading (Eagleton et al., 2006). Good readers mostly understand the appropriate strategies used to get better comprehension from the text but the poor one's experience lots of reading difficulties (Eagleton et al., 2006). It indicates that suitable strategies can help students to cope up with their reading difficulties (Pressley, 2002). In addition, Meniado (2016) emphasized that metacognitive strategies are significant for students to enhance reading comprehension and deal with difficulties. In reading, metacognitive strategies are the most effective strategies for students to perceive the complex reading process of understanding (Girli & Öztürk, 2017). Bakhtiari (2020) argues that higher self-efficacy students tend to apply metacognitive strategies successfully to achieve completion of reading tasks.

It is significant to note that over the last five years, there have been some studies conducted around the globe as tangible evidence of academic reading, self-efficacy, and achievement. Fitri et al. (2019) investigated a relationship between self-efficacy and reading comprehension. The result showed that there was a correlation between self-efficacy and reading comprehension. The score was significant at the level  $< 0.05$ , which means that the higher self-efficacy, the higher students' reading comprehension skills. The following study was conducted by Hager (2017). She investigated the relationship between students' self-efficacy and second grade reading achievements. The results showed that there is no correlation between self-efficacy and reading achievement. The research provides inconclusive evidence of students' abilities in the particular age group to assess their self-efficacy and reading achievement. Both studies

shared different results concerning students' self-efficacy and academic reading.

Furthermore, Peura et al. (2019) emphasized the concepts of self-efficacy concerning students' efforts and tenacity to achieve reading fluency. This study examined that students' self-efficacy was associated with reading comprehension and improvement. Another interesting study was conducted by Sembiring et al. (2018). They investigated the impact of reading instruction to develop students' self-efficacy levels. The results showed that grouping ability and self-efficacy influence students' reading comprehension and achievement. Based on the review of some studies, self-efficacy is a crucial element that promotes students' reading comprehension, fluency, and achievement (Peura et al., 2019; Sembiring et al., 2018).

Some studies in Indonesia acknowledged the importance of metacognitive strategies to improve reading comprehension (Hamiddin & Saukah, 2020) and listening performances (Khosroshahi & Merç, 2020). Those findings were supported by Flavell's (1979) theory that metacognitive strategies promote individuals to develop self-efficacy levels, overcome learning issues, and achieve future goals. In addition, Teng (2020) reveals that implementing metacognitive strategies during reading guides students to plan, monitor, evaluate whether or not the strategies are suitable for them. Therefore, implementing reading strategies metacognitively give a significant contribution to students' academic reading success.

This current study aims to examine students' self-efficacy levels and the strategies to accomplish academic reading comprehension. Even though existing studies have provided significant results regarding students' self-efficacy and metacognitive reading strategies, the correlation of both aspects is still inadequately represented. To date, few studies have extensively calculated the correlation between self-efficacy and metacognitive strategies of graduate students in Indonesia to develop reading skills and pursue future careers. This current study aims to bridge in the gap by examining the correlation between self-efficacy and metacognitive strategies. In addition, it provides strategy variations executed by students to overcome difficulties and develop comprehension skills.

In order to provide clear evidence on the self-efficacy concept, academic reading, and metacognitive strategies, the researchers conducted a correlational study. To guide this research, three research questions were formulated in this study:

- (1) Is there any relationship between self-efficacy levels and metacognitive reading strategies of the Indonesian graduate students?
- (2) How does self-efficacy affect graduate students in achieving reading comprehension?
- (3) What metacognitive strategies are used by graduate students to enhance self-efficacy and cope with reading difficulties?

## **Method**

### ***Research design***

This study employed a convergent mixed-method study (Ary et al., 2009; Creswell, 2014) since the study aimed to connect the first and second data set to find out whether the databases are understandable in the forms of numerical and descriptive data (Creswell, 2014). This mixed-method study is more than a combination of quantitative and qualitative methods that can help researchers to elaborate research findings, develop interpretations, and investigate issues (Ary et al., 2009).

In this study, to examine the correlation between self-efficacy and metacognitive reading strategies, it used the Pearson product-moment correlation coefficient ( $r$ ) by using SPSS. It was also supported by students' close-ended questionnaire responses regarding self-efficacy and metacognitive strategies. The data gained from those calculations were categorized as the quantitative data. The correlational study provides the opportunity to demonstrate the relationship between two or more variables (Creswell, 2014) and indicates whether the relationship between paired scores is positive or negative as well as the strength of each relationship (Ary et al., 2009).

In addition, the qualitative data focused on students' experiences and reflections during the academic writing process. This study, therefore, combined the crucial process of research including methodology, research design, data collection, and data analysis. Thus, through the implementation of this approach, the researchers gained detailed information from the participants to verify the reliability and trustworthiness of the research data.

### **Participants**

This study involved 33 graduate students of Master's Program in English Education at the two outstanding private universities in Yogyakarta, Indonesia. All participants came from batch 2019 and 2020 who had experienced the academic writing process during this COVID-19 pandemic. The participants' age ranged from 22 to 26 years. The participants were selected purposively to obtain information about their efficacy levels and metacognitive strategies used to overcome academic reading difficulties. Due to the COVID-19 pandemic situation, research participants were difficult to collect, so the researchers decided to select two university samples for this study.

Creswell (2014) claims that purposive sampling is a typical qualitative inquiry that can be implemented to help the researchers conducted a study with small samples. The purposive sampling is also employed by the researchers to select the participants based on the particular phenomenon and the research problem being studied (Creswell, 2014). They were selected as the source of data to understand their self-efficacy while achieving academic reading comprehension as the required tasks for the graduate program. In this study, participants had to fill out all questionnaires and follow the interview session. Eight men and twenty-five women agreed to participate in this current study. Six of them also agreed to be interviewed. The demographics information of the research participants is shown in Table 1.

Table 1. Demographics information of the participants

Socio demographic items	Details	Frequency	Percentage (%)
Gender	Male	8	24.2
	Female	25	75.7
Age	22-24	23	69.6
	24-26	10	30.3
Religion	Catholic	17	51.5
	Protestant	4	12.1
	Moslem	12	36.3
Academic Year	2019	10	30.3
	2020	23	69.6

### **Data collection**

The researchers employed mixed-method research to collect both quantitative and qualitative data. Quantitative data were collected through the use of

correlational study and questionnaires. A correlational study between students' self-efficacy and metacognitive reading strategies was conducted to calculate the relationship between the two different samples. If the research findings show a significance level  $> 0.05$ , the null hypothesis is accepted and there is no correlation between the two samples. However, if the significance level is  $< 0.05$ , the null hypothesis is rejected and a correlation between the two samples is shown.

The questionnaires aimed to help the researchers in gathering students' responses and measuring their perceptions (Ary et al., 2009). A close-ended questionnaire aims to select the most appropriate answer based on the students' beliefs, while open-ended questions allow them to express more detailed responses. The close-ended questionnaires consisted of 20 statements and used a five-point Likert scale. The degree of agreement was "Strongly Disagree (1)", "Disagree (2)", "Neutral (3)", "Agree (4)", and "Strongly Agree (5)". The open-ended questionnaire comprised two main questions which aimed to gain the supporting data. The open-ended questions were designed to ask the participants about their self-efficacy and metacognitive strategies use in academic reading.

The close-ended questionnaire covered three major elements. First, the correlation of self-efficacy and the Metacognitive Reading Strategies Questionnaire was adapted from Bagci and Unveren (2020) comprising six main questions. Second, the self-efficacy questionnaire was adopted from Wijaya and Mbato (2020), but it was modified from writing to reading, including four items for intrinsic aspects and three items for extrinsic aspects which sustained self-efficacy levels. Third, a metacognitive reading strategies questionnaire was adopted from Mbato (2013), including two items for planning, three items for monitoring, and two items for evaluating strategies.

To collect the qualitative data, the researchers conducted open-ended interviews that required students to share their responses without any limitation. The interview questions were simplified into six items to find out the students' metacognitive strategies in academic reading. Thus, the researchers selected 6 participants from all graduate students representing higher and lower self-efficacy levels.

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### **Data analysis**

In this study, the researchers conducted descriptive and inferential statistics to analyze students' responses. To analyze the quantitative data, the researchers employed correlation analysis with the aid of SPSS to measure the correlation between both different variables using the two-tailed significance. To analyze quantitative data, the researchers used correlation analysis with SPSS to measure the correlation between two different variables based on two-tailed significance. After obtaining quantitative data from closed questionnaires, the researchers also used SPSS software to calculate percentages of the data. The results of the closed questionnaire were categorized into high (3.68) and low (12.33) and confirmed by Mbato (2013). This particular classification was used to select the participants to be interviewed. Therefore, the participants were coded into STU A, B, and C (representing higher self-efficacy levels) and STU D, E, and F (representing lower self-efficacy levels).

Whereas, to analyze the qualitative data gained from interviews, the results of interview were transcribed. Since this particular research employed a mixed-method study, it also provided side-by-side comparison by connecting and building the data set (Creswell, 2014). Furthermore, the results from interviews as qualitative data were analyzed descriptively to sustain the previous findings.

### **Findings**

This study examined the level of students' self-efficacy in the academic reading process, particularly for achieving students' goals in reading. The results are divided into three parts: the correlation between self-efficacy and metacognitive strategies in academic reading, students' perceptions of self-efficacy, and metacognitive reading strategies implemented by graduate students.

#### ***The correlation between self-efficacy and metacognitive reading strategies***

To answer the first research question, "Is there any relationship between self-efficacy levels and metacognitive reading strategies of the Indonesian graduate students?", the researchers employed a close-ended questionnaire and Pearson correlation to support the data. Based on the results, students acknowledged that a higher level of self-efficacy could lead to the implementation of metacognitive strategies for reading comprehension. Therefore, the researchers

tried to figure out if there was a correlation between reading self-efficacy and metacognitive strategies. The five statements in Table 2 focused on the relationship between self-efficacy and metacognitive strategies implemented by students in reading activities.

Table 2. Students' responses to the relationship between self-efficacy and metacognitive reading strategies

No	Statements	Mean	SD*	1	2	3	4	5
				SD (%)	D (%)	N (%)	A (%)	SA (%)
				F1	F2	F3	F4	F5
1	When I establish a higher reading self-efficacy, I will unfold new reading strategies to accomplish academic reading assignments.	3.72	0.67	-	-	39.4	48.5	12.1
2	If I construct higher awareness on metacognitive reading strategies, I will develop comprehension skills.	4.00	0.75	-	3	18.2	54.5	24.2
3	I believe the improvement of reading self-efficacy perceptions encourages me to develop metacognitive strategies.	4.24	0.66	-	-	15.2	51.5	33.3
4	The implementation of metacognitive reading strategies helps me in the pre-reading, while-reading, and post-reading.	4.15	0.79	-	3	21.2	45.5	30.3
5	When I build a reading self-efficacy perception, I will notably improve reading habits.	3.81	0.68	-	6.1	30.3	51.5	12.1
6	I can comprehend the readings by predicting what the text will be about.	4.15	0.90	3	6.1	18.2	42.4	30.3

SD\*=Standard Deviation; SD=Strongly Disagree; D=Disagree; N=Neutral; A=Agree; SA=Strongly Agree; F=Frequency

Most of the students agreed that the higher self-efficacy levels allowed them to find out various effective strategies to accomplish reading comprehension (St. 1, M=3.72, see Table 2). As shown in Table 2, the majority of students acknowledged that there was a positive relationship between self-efficacy and metacognitive strategies. Particularly, most of them expressed their high

agreement with statement 3 (M=4.24) "the improvement of reading self-efficacy perceptions encourages me to develop metacognitive strategies". As seen from statements 1 to 7, students strongly agreed that higher reading self-efficacy stimulated them to apply metacognitive reading strategies to improve reading abilities (M=3.72- 4.15).

In this section, the Pearson correlation coefficient (r) was used to examine the relationship between students' self-efficacy and metacognitive reading strategies using SPSS and to test the validity of these particular questionnaires. The results are shown in Table 3.

Table 3. Correlation between self-efficacy and metacognitive reading strategies

		Self-efficacy	Metacognitive reading strategies
Self-efficacy	Pearson correlation	1	.970
	Sig. (2-tailed)		.000
	N	33	33
Metacognitive Reading Strategies	Pearson correlation	.097	1
	Sig. (2-tailed)	.000	
	N	33	33

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The Pearson Correlation Coefficient (r) results showed a positive correlation between the student's self-efficacy and metacognitive reading strategies of Indonesian graduate students, which was significant at the 0.01 level ( $r = .970$ ,  $n = 33$ ,  $p = .000$ ). This result showed that students' self-efficacy levels and metacognitive reading strategies had a positively strong correlation since over 80% of the students (St.3, M= 4.24) believed that the implementation of metacognitive strategies in each reading activity was affected by the improvement of self-efficacy levels. From the questionnaire and correlational test results, many students were metacognitively active in reading activities and believed that maintaining self-efficacy levels and metacognitive strategies would encourage them in acquiring reading comprehension. Thus, the results conclude that the alternative hypothesis ( $H_A$ ) was accepted and the null hypothesis ( $H_0$ ) was rejected.

***Students' perception of self-efficacy in academic reading comprehension***

The analysis below aimed to answer the second research question, "How does self-efficacy affect graduate students in achieving reading comprehension?" There are seven statements in Table 4 focusing on students' reading self-efficacy levels. To obtain the data, students needed to fill out the questionnaires by choosing the option that represented their reading efficacy levels.

Table 4. Students' responses to their self-efficacy levels in academic reading

No	Statements	Mean	SD*	1	2	3	4	5
				SD (%)	D (%)	N (%)	A (%)	SA (%)
				F1	F2	F3	F4	F5
1	I believe that academic reading abilities are crucial to be mastered to make me look more scholarly.	4.33	0.69	-	-	15.2	42.4	42.4
2	I can overcome challenges since I believe that I have sufficient capabilities in reading.	3.57	0.86	-	12.1	30.3	45.5	12.1
3	I feel more confident if lecturers and colleagues motivate me.	4.45	0.79	-	3	9.1	27.3	60.6
4	I feel confident to achieve academic reading comprehension if I am persisting in obtaining reading outcomes.	4.15	0.50	-	-	6.1	72.7	21.2
5	I can stay calm even though there are several reading setbacks since I have dedicated efforts and perseverance in reading.	3.30	0.84	-	15.2	45.5	33.3	6.1
6	Academic reading is enjoyable if lecturers are also dedicated, persevering, and committed.	4.18	0.63	-	-	9.1	60.6	30.3
7	I believe that I will be more proficient in academic reading after taking this class.	3.72	0.94	3	6.1	24.2	48.5	18.2

SD\*=Standard Deviation; SD=Strongly Disagree; D=Disagree; N=Neutral; A=Agree; SA=Strongly Agree; F=Frequency

Statements (abbreviated to St.) 1-7 indicated that most students showed a level of self-efficacy when reading. They positively expressed that their levels of self-efficacy might be affected by the intrinsic aspects (St. 5, M=3.30) and

extrinsic aspects (St. 3, M=4.45). The intrinsic and extrinsic aspects could sustain graduate students' self-efficacy while achieving academic reading comprehension. In connection with this result, essential intrinsic aspects including students' efforts, perseverance, and commitment could influence them in obtaining reading comprehension successfully if they dedicated the aspects to academic reading (St. 5, M=3.30). Furthermore, it can also be argued that most of the students showed higher self-beliefs, greater motivation, and confidence when accomplishing academic reading comprehension and overcoming barriers since the continuous external supports were addressed by their lecturers along with colleagues (St. 3, M=4.45). Meanwhile, most of the graduate students perceived the academic reading process as an enjoyable activity since the lecturers dedicated themselves to guiding students to accomplish reading comprehension and show attentiveness during the reading process (St. 6, M=4.18). From this particular finding, it can be highlighted that the roles of lecturers as educators and instructors facilitated students in the learning process to achieve higher self-efficacy levels and the enhancement of the future learning process. Some of the students expressed that they could overcome reading challenges by themselves because of their reading capabilities (St. 2, M=3.57). Based on the findings above, most of the students demonstrated that after taking academic reading classes, they would be more proficient (St. 7, M=3.72). The results showed that the SD was in the range of 0.50-0.94. It means that the distribution of students' responses on the questionnaires was homogeneous. Thus, the findings of the particular questionnaire were in line with the interview results. In the interview, student (abbreviated to STU) F stated that he had high self-efficacy level in reading:

I keep developing my comprehension skills by asking friends for help. I love to hear from them and I can do more to improve my skills. (STU F)

This interview excerpt showed that STU F was quite confident to achieve academic reading comprehension (St. 4, M=4.15). Even though STU F encountered reading problems, he was still struggling to obtain reading comprehension by seeking help from other friends.

In summary, those students' answers validated the particular questionnaires through their reading experiences. Most of the students claimed that they experienced reading problems but they had great efforts and perseverance to achieve reading comprehension skills.

***Students' metacognitive strategies in the academic reading process***

The results of analysis below aimed to provide the answers to the third research question, "What metacognitive strategies are used by graduate students to enhance self-efficacy and cope with reading difficulties?" Based on the results of the second questionnaire, researchers discovered how students implemented metacognitive strategies to plan, monitor, and evaluate the reading process. The seven statements in Table 5 focused on students' perceptions of metacognitive strategies for overcoming reading difficulties.

Table 5. Students' responses to their metacognitive reading strategies

No	Statements	Mean	SD*	1	2	3	4	5
				SD	D	N	A	SA
				(%)	(%)	(%)	(%)	(%)
				F1	F2	F3	F4	F5
1	I decide in advance what my reading purpose is, and I read with that goal in mind.	3.87	0.78	-	6.1	21.2	57.6	15.2
2	Before reading, I think of what I already know about the topic.	3.84	1.03	-	15.2	12.1	45.5	27.3
3	While reading, I periodically check if the material is making sense to me.	3.78	0.96	-	15.2	18.2	42.4	24.2
4	I encourage myself as I read by saying positive statements such as "You can do it."	4.03	0.95	-	6.1	18.2	39.4	36.4
5	When I encounter a difficult word, I try to work out its meaning from the context surrounding it.	4.12	0.78	-	3	15.2	48.5	33.3
6	After reading, I check to see if my prediction is correct.	3.84	1.06	-	12.1	27.3	24.2	36.4
7	After reading, I decide whether the strategies I used helped me understand, and think of other strategies that could have helped.	3.81	0.84	-	9.1	18.2	54.5	18.2

SD\*=Standard Deviation; SD=Strongly Disagree; D=Disagree; N=Neutral; A=Agree; SA=Strongly Agree; F=Frequency

As shown in Table 5, the findings showed that the majority of students expressed high agreement with the implementation of metacognitive strategies in pre, while, and post-reading (St. 2, 3, 7). Students' positive perceptions

indicated the beneficial experiences during the academic reading course. Students also expressed positive responses to the use of prediction as an effective strategy in reading (St. 6, M=3.84). During reading activities, students stated that they always encouraged themselves by saying "You can do it" (St. 4, M=4.03). Besides, when students encountered difficulties, they attempted to find suitable strategies to solve them (St. 5, M=4.12). Based on the results, the low SD values of these seven statements suggested that there is a slight gap in student response. This means that these students are using a similar strategy.

Moreover, the descriptive analysis of the questionnaire data was corroborated with one excerpt of the interviews, in which the student delivered his perception of predicting strategies.

In the pre-reading process, I attempt to predict the reading content by reading the topic first and connecting it to my existing knowledge. (STU A)

Based on the interview, participants shared their reading setbacks and reflected on reading performances. Many students mentioned that in each stage of reading, they provided distinctive strategies to make them easier in gaining deep information from readings. As the metacognitive strategies were categorized into planning monitoring, and evaluation (Chamot et al., 1999). They also said that they tended to evaluate and reflect on what they read and the content of the information. In order to gain more insights about the participants' responses, the researchers discussed students' metacognitive reading strategies by classifying reading stages into three.

### *Pre-reading activities*

According to Pasternak and Wrangell (2007), pre-reading reading activities may activate students' prior knowledge of the topics and brief information related to the particular readings. In pre-reading, students need to implement planning strategies to assist them in building their current knowledge (Chamot, 1999). During data collection, students were asked about their perceptions of metacognitive strategies in reading activities, as shown in Figure 1.

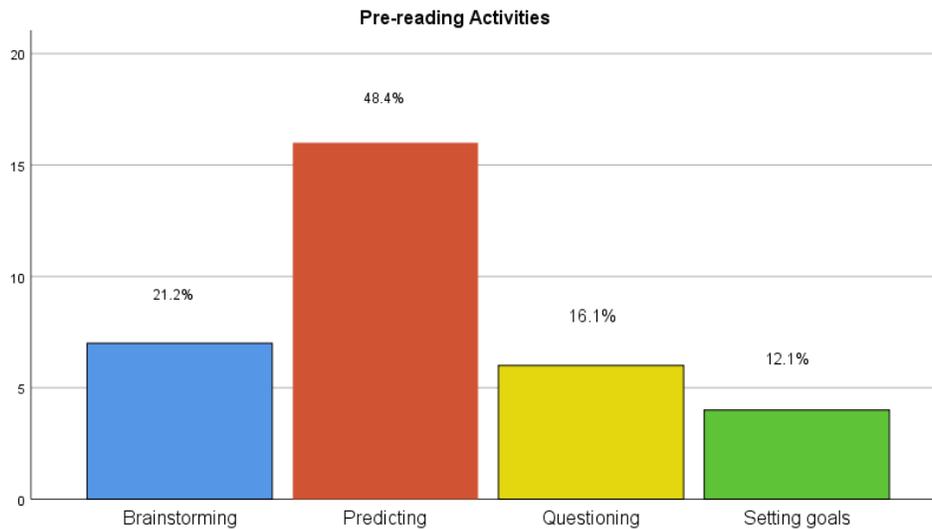


Figure 1. The number of students implementing various strategies in the pre-reading activities (in percentage)

Figure 1 indicated the students' positive perceptions towards the implementation of pre-reading strategies. Figure 1 also showed that 21.2% of students promoted brainstorming as one of the metacognitive strategies applied in the pre-reading stage. Brainstorming enables students to create a connection between their existing knowledge and current knowledge from readings. As many as 28.2% of the students tended to question and set goals before going to read the materials. Setting a goal before reading may assist the students to focus on the reading tasks and requirements. While questioning can help students to make sure whether their understanding is correct. Based on the findings, most of the students preferred to use Predicting as a pre-reading strategy. As shown in Figure 2, approximately 48% of the students indicated a high agreement that predicting may be the effective pre-reading strategy to improve their reading abilities. Furthermore, students' positive perceptions of the use of predicting strategy were supported by one of the responses to the open-ended questionnaire.

Through predicting, I can grasp a better understanding about the reading, connect the topics to my existing experience and knowledge, and interact with the particular text." (STU B)

The open-ended questionnaire results showed that STU B also shared other planning strategies she used. STU B explained that she used predicting as a planning strategy to guide her understanding deep information from readings.

### *While-reading activities*

During reading, students need to understand that being highly skilled in monitoring reading comprehension is important (Pasternak & Wrangell, 2007). Besides, monitoring strategies in while reading could help students to keep engaged in reading to portray what they do and do not understand during the reading process (Chamot, 1999). In this study, metacognitive strategies adopted by students during reading activities are shown in Figure 2.

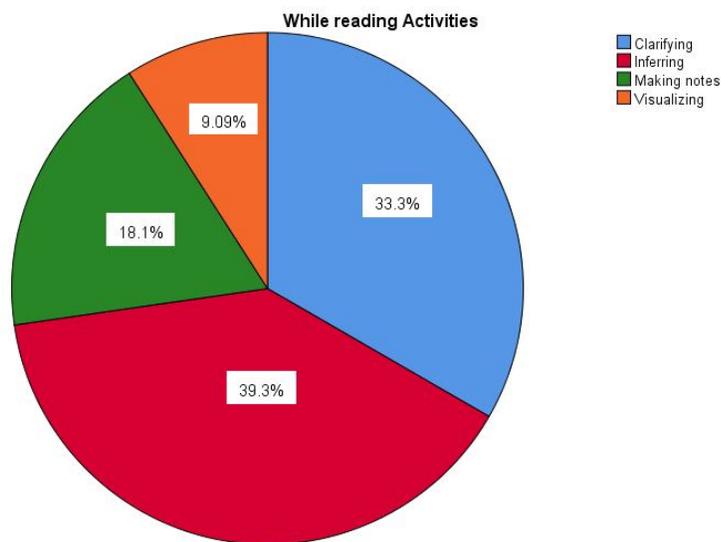


Figure 2. The number of students implementing metacognitive strategies in while-reading activities.

Figure 2 indicated the students' positive perceptions towards the implementation of while reading strategies. The various strategies implemented while conducting reading activity appear to be caused by students' different reading capabilities, flexibilities, and pace. Figure 2 showed that 18.1% of the students selected making notes and 9.09% of the students chose to visualize as their suitable reading strategies. Visualizing is a reading strategy, which assist students to use the mental images from the readings. Meanwhile, making notes

guided students to avoid missing crucial key points from readings and engage them to memorize what they have read. It was good for students to simply write the crucial information to develop reading comprehension.

Apart from the two strategies, students perceived that the other two strategies were more appropriate for improving reading comprehension and outcomes. The majority of the students (72.6%) confirmed that clarifying and inferring were effective strategies during reading. The majority of students demonstrated that clarifying and inferring encouraged them to question, reread, and restate the readings to be more understandable. These findings were in line with the results of students' interviews. This particular student shared her experience in implementing the clarifying strategy during the reading process.

I attempt to find out the meaning of difficult words in the dictionary. Then, I look for similar journal articles to support me in gaining better comprehension and understanding. (STU B)

Both reasons, finding out the meaning and looking for similar journal, were mentioned by STU B to clarify the difficult word she encountered. STU B shared that the use of clarifying as monitoring strategy could help her to develop comprehension and understanding better.

### *Post-reading activities*

Chamot (1999) demonstrates that evaluation strategies is commonly done in the post-reading activities. In the post-reading activities, students share what they have learned from the readings, analyze the previous questions, and evaluate answers. Metacognitive reading strategies allow students to compare and contrast reading comprehension in pre-reading and post-reading (Pasternak & Wrangell, 2007). Generally, the strategies used by the students to evaluate their post-reading activities are as depicted in Figure 3.

Figure 3 indicated the students' metacognitive strategies used in the post-reading activities. Figure 3 showed that students implemented all the four metacognitive strategies in reading with discussing being the most used strategy (30.3%) followed respectively by drawing a conclusion, evaluating, and re-reading. Most of the students chose discussion as a suitable strategy after reading because they claimed that it was an effective strategy to analyze the

reading content and pattern along with others and to seek help from friends and lecturers.

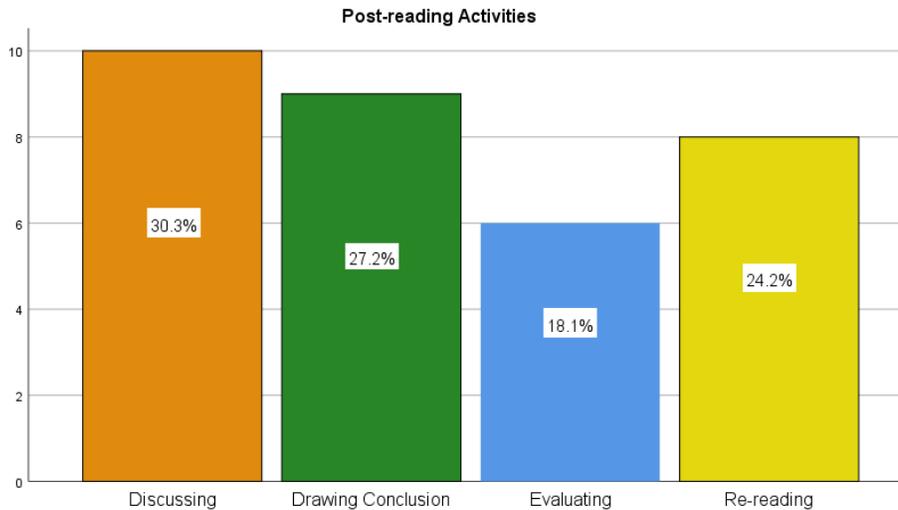


Figure 3. The number of students implementing various metacognitive strategies in the post-reading activities

Students realized that acquiring information from others guided them to develop reading comprehension. This result was in line with a student's response to an open-ended question:

We discuss some ideas and points in reading and try to build the current knowledge by combining and carefully selecting them. (STU C)

Based on the open-ended questionnaire response, STU C mentioned that discussion is the most effective evaluating strategy since he can share different ideas with other friends and build the new knowledge concerning the particular reading.

## Discussion

Analysis of this study revealed three important findings. The first important finding showed that there was a positive correlation between reading self-efficacy and metacognitive strategies used by the majority of students. Students with a high level of self-efficacy tend to use metacognitive strategies

in pre-reading, during-reading, and post-reading activities. As seen in the questionnaire results, the students demonstrated their agreement with the implementation of metacognitive strategies to assist them in each stage of reading (St. 4,  $M=4.15$ , see Table 2). Those findings were underpinned by the results of students' interviews. For instance, STU E agreed that self-efficacy levels may encourage individuals to apply metacognitive strategies to improve reading abilities. These findings were in line with the study from Flavell (1979), which declared that individuals who carried out the metacognitive knowledge development in learning tended to have higher self-efficacy and strategies to overcome learning issues than those who did not. Fitri et al. (2019) confirmed that higher self-efficacy levels have a strong impact on students' effort and sustainability in applying metacognitive strategies. Thus, Fitri et al. (2019) shared the agreement that there was an important relationship between self-efficacy and metacognitive reading strategies. Higher self-efficacy students were found to have great encouragement to understand challenges of academic reading. The findings showed that students attempted to grow their efficacy in academic reading and implement metacognitive strategies to deal with reading difficulties.

Second, students' self-efficacy levels can influence their reading comprehension, as evidenced in the study by Fitri et al. (2019) and Peura et al. (2019). Students' perceptions of their self-efficacy levels are categorized into two, namely, positive and negative. Some of the students expressed that they had low self-efficacy levels. In this study, students' self-efficacy was affected by intrinsic and extrinsic aspects in an academic reading course. The extrinsic aspect appeared to be the supreme factor encouraging students to develop self-efficacy. Students argued that the teachers' dedication in academic reading courses motivated them to improve their level of self-efficacy. It is worth noting that the majority of students recognized the self-efficacy of reading as positive. STU A stated that, "I am confident enough with my reading abilities" (St. 4,  $M=4.15$ , see Table 4). The result is strengthened by the previous study (Bandura, 1997), which reveals that higher self-efficacy helps students in working on learning tasks, responding to feedback, and regulating emotion. Students also highly agreed that the social supports from lectures and colleagues are commonly associated with their self-efficacy levels (St.3,  $M=4.45$ , see Table 4).

The third finding suggests that many students implemented metacognitive reading strategies in every stage of reading. Metacognitive strategies are divided into planning, monitoring, and evaluating. The research results

showed that the students should share their metacognitive strategies used in each stage of academic reading to guide them in building comprehension. Based on the results of the questionnaire results, most students frequently implemented them by setting goals before reading (St. 1, M=3.87, see Table 2). This is indicated by the mean score of pre-reading metacognitive strategies (St.2, M=3.84, see Table 5) and is strengthened by the statement from STU in the interview: "Before going to read, I need to prepare myself by setting the initial goals, so that I understand my reading track". This finding was supported by Mbato (2013) who highlighted that students need to set their goals before reading so that they can adjust their goals in the process of reading. However, one student confirmed that he only implemented reading strategy at the end of reading. This case was in line with the finding from Teng (2020), in that most of the students experienced reading difficulties at the end of reading because they did not integrate pre-reading strategy to connect their current knowledge and experiences. It was corroborated by the statement from STU in the interview: "I often did not apply strategies in every stage of reading because it consumed my time. Thus, I implement strategy only if I encounter reading difficulties". This student was regarded as a low self-efficacy learner who brings an unhealthy attitude to complete any task (cf. Mbato, 2013). Mbato (2013) also found that the low self-efficacy levels may hold up students' metacognitive strategies development.

In the while-reading activity, students applied monitoring strategies to keep them engaged during the reading process (Chamot, 1999). The majority of students shared positive responses regarding the implementation of monitoring strategies to guide them in periodically checking the material (St. 3, M=3.78). Based on the open-ended interview, the students shared four different monitoring strategies while reading activities. Most of the students mentioned that inferring and clarifying were the effective monitoring strategies in academic reading which could guide them in gaining task comprehension and optimal performance (Teng, 2020). The rest of the students demonstrated that making notes and visualizing might guide them to develop reading comprehension (Pasternak & Wrangell, 2007). It can be inferred that those different monitoring strategies are positively used by the students while reading the academic texts. The positive response can be attributed to the familiarity of the students with the significance of metacognitive strategies which could guide them to achieve reading comprehension (Meniado, 2016).

In the post-reading activity, the majority of students utilized metacognitive strategies by applying evaluation strategies to the moderate level (St. 6-7,

M=3.81-3.84). This questionnaire result indicated that the evaluation strategy in academic reading is moderately used by the students. The moderate use might indicate the unfamiliarity of the students with the existence of the particular metacognitive strategies which could help them in comprehending readings (Meniado, 2016).

The students also mentioned different evaluation strategies including discussing, drawing a conclusion, evaluating, re-reading. Discussing with their peers was the most selected strategy to evaluate as they read (30.3%). Discussing activity was considered as the follow-up activity requiring students to understand the authentic goals after the reading process (Teng, 2020). The evaluation was the crucial strategy to regulate students' reading process, critically review what has been understood, and solve the reading problem so that students will obtain the desired results (Meniado, 2016).

Based on the results of the interview, the majority of students implemented metacognitive strategies (planning, monitoring, and evaluating) in every stage of the academic reading process. However, there was one student considered as a low self-efficacy learner. In addition to the low self-efficacy, it can also be pointed out that one of the students indicated learned helplessness. The particular student claimed that he would merely apply strategies if were only some difficulties. This particular finding was supported by Mbato (2013) that low self-efficacy and helpless students function inadequately when they come to the implementation of metacognitive strategies in academic reading. Bakkaloglu (2020) also found that some students might be unaware of their metacognition and thinking processes. Therefore, they could not implement effective strategies during the problem-solving action, in the particular reading process. It can be concluded that the particular data from the interview results supported the null hypothesis (H<sub>0</sub>) i.e., there was no significant correlation between self-efficacy and metacognitive strategies in reading. Therefore, it is important to develop students' metacognitive awareness before understanding the concepts of metacognitive strategies used in the academic reading process.

## Conclusion

This current study contributes to the study of self-efficacy and awareness of metacognitive strategies among Indonesian graduate students. This study revealed the findings in three important ways. First, the Pearson Moment Correlation results show that there was a strong correlation between self-

efficacy and metacognitive reading strategies. The correlation coefficient ( $r$ ) was .970, which was significant at the 0.00 level. This means that the higher the student's self-efficacy, the better the metacognitive strategies for improving reading comprehension and overcoming reading difficulties.

Second, the study concludes that most graduates had a high level of self-efficacy in the academic reading process. High self-efficacy encourages the implementation of metacognitive strategies to overcome reading comprehension problems such as low motivation, lack of vocabulary, and poor comprehension. At the end of reading activities, students confirmed that finding the particular meaning and understanding of unfamiliar words were difficult. Furthermore, to overcome those problems, they tried to implement metacognitive strategies. Based on the questionnaire results, students implemented planning, monitoring, and evaluating in every stage of reading activity to maintain their self-efficacy levels and develop comprehension skills.

This particular study offered an implication for lecturers and teachers concerning self-efficacy levels and various metacognitive reading strategies based on students' learning paths. Supports from lectures and teachers will promote students to implement metacognitive reading strategies to confront challenges and build a reading nature. Despite the positive findings, this study also has a limitation. It involved a small number of graduate students of English Education. Future researchers will be able to conduct research on similar topics involving more participants from different universities and regions in Indonesia. Further research may investigate self-efficacy and metacognitive strategies in learning other subjects and how they correlate to each other. In addition, students' reading strategies in dealing with COVID-19 pandemic situations will be another engrossing topic to discuss.

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