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Cognitive and Metacognitive Reading Strategy Use and Reading Comprehension Performance of Indonesian EFL Pre-service Teachers

ABSTRACT

The study aims at identifying the nature of cognitive and metacognitive reading strategies employed by Indonesian EFL pre-service teachers. It also aims at finding out the relationship between the reading strategies used and pre-service teachers' reading comprehension performance. The study employs a quantitative research method using reading test and cognitive and metacognitive reading strategy questionnaire. The results showed that for cognitive reading strategies, Highly Successful Readers (HSR) reported using memory sub-strategy more than Less Successful Readers (LSR) and Moderately Successful Readers (MSR), and using comprehension and retrieval sub-strategies less than MSR, but more than LSR. For the metacognitive reading strategies, HSR reported using monitoring and evaluating strategies less than MSR, but more than LSR, and using planning strategy less than both MSR and LSR. The statistical analysis resulted that there is no statistically significant relationship between the cognitive reading strategies employed by Indonesian EFL pre-service teachers and their reading comprehension performance (r values $< r$ -table; $0.049 < 0.181$). There is also no significant relationship between the metacognitive reading strategies employed by Indonesian EFL pre-service teachers and their reading comprehension performance (r values $< r$ -table; $0.127 < 0.181$). Thus, H1 is rejected, meaning that there is no statistically significant correlation between the use of cognitive and metacognitive reading strategies and the pre-service teacher reading comprehension performance. As for the implications, it is suggested that the teacher provides more exposures and practices to apply reading strategies that help the students to comprehend English texts.

Keywords: cognitive strategies, metacognitive strategies, reading comprehension performance

INTRODUCTION

Learning strategies employed by language learners are currently often researched for their contribution in the

second language acquisition. There was a shift in the research and theory of second language teaching from focusing on the

teaching methods to focusing on the learning strategies employed by learners (Purpura, 1997). This trend shows the importance of knowing the characteristics of learners in acquiring the second language for the success of the second language acquisition. Knowing the strategies employed by more successful and less successful learners can be the basis of a lesson or syllabus planning. One of the learning strategies often researched is reading strategy learners used in order to comprehend a text.

Reading comprehension is very important in all areas of academic learning including in acquiring a language. Students need to read books, articles, and other materials in order to master any subject areas that they learn, and they need to have a good reading comprehension to do so whether it is on their first or their second language. If students cannot comprehend their reading materials well, they will not be able to achieve a high academic achievement (Iwai, 2009). Therefore, it is very important for the students to master reading comprehension.

However, EFL students often face some challenges in comprehending texts in English. This is because, in reading, students are not only required to understand the direct meaning of the text but also to understand the implied ideas of the text (Al-Alwan, 2012). They might not be able to comprehend the text because of their lack of vocabulary knowledge and sentence structure, and also their failure to relate the text with its context. One of the ways to help students comprehend texts in English is by employing various strategies in reading.

Cognitive and metacognitive strategies have been indicated to contribute to help-

ing students face their challenges in comprehending a text. There were several studies conducted on the topic of cognitive and metacognitive reading strategies and the students' reading comprehension performance. Some of these studies examined the relationship between cognitive and metacognitive strategy use and reading comprehension employing multiple correlation analysis (e.g., Naeni & Rezaei, 2015; Phakitti, 2003; Purpura, 1997, 1998). These studies have shown that the use of cognitive and metacognitive strategies has a positive relationship to the students' reading comprehension performance. Furthermore, some other studies examined the contribution of the reading strategies on the students' reading comprehension performance (e.g., Al-Alwan, 2012; Kummin & Rahman, 2010; Yakupoglu, 2012).

However, only a few studies have been conducted within the Indonesian context in this area of study. One of the examples was a study conducted by Vianty (2007) which investigated reading strategies employed by Indonesian learners of English when reading Indonesian and English texts, but the research only focused on metacognitive reading strategies. Furthermore, the studies were mostly conducted with English as a Foreign Language (EFL) learners as the participants. Only a few studies have been conducted with pre-service teachers as the participants. Pre-service teachers are students of teacher training and education program, and they are prepared to be teachers upon finishing their study. This research was conducted within the Indonesian context with pre-service teachers as the participants. It is expected to provide insights for the teaching of reading strategies for pre-service teachers, especially in Indonesian context.

Based on the background and expectation, this research aims to identify the nature of cognitive and metacognitive reading strategies employed by Indonesian EFL pre-service teachers. It also aims to find out the relationship between the pre-service teachers use of cognitive and metacognitive reading strategies and their reading comprehension performance, analyzing whether the differences in the use of these reading strategies relate to their performances in a reading comprehension test. The research will be beneficial for the enhancement of the teaching and learning process for reading courses in an EFL classroom setting especially in an Indonesian context. Here are the research questions:

1. What is the nature of cognitive and metacognitive strategies employed by Indonesian EFL pre-service teachers and their reading comprehension performance?
2. How is the relationship between cognitive and metacognitive strategy use and the Indonesian EFL pre-service teachers' reading comprehension performance?

LITERATURE REVIEW

When reading English texts, there are some factors that may affect learners' understanding of the texts; among others are learners' target language proficiency and vocabulary, learners' knowledge of the content, and learners' use of reading strategies (Zare-ee, 2007). He added that reading strategy is one of the important factors in comprehending a text, and readers change the reading strategies they use depending on the texts they read. He defined reading strategies as specific actions that learners do in order to comprehend the texts. These strategies include cognitive and metacognitive strategies.

Cognitive strategies are direct language learning strategies which can help students

process meaning in the target language consciously (Kasimi, 2012). These strategies include comprehension, memory, and retrieval strategies (Phakiti, 2003). This is in line with O'Malley and Chamot (in Zarra-Nezhad, Shooshtari, & Vahdat, 2015) who stated that cognitive strategies are related to students' act of comprehending texts by making prediction, translating, summarizing, and guessing meaning from context, and also students' act of relating their reading to their background knowledge.

Meanwhile, metacognitive strategies are the strategies that students use to monitor their use of cognitive strategies (Zarra-Nezhad, Shooshtari, & Vahdat, 2015). This is in line with Zhang and Seepho (2013) who stated that metacognitive reading strategies are the strategies that are employed by the readers in order to improve their awareness and control over the reading comprehension and to evaluate it. They include planning, monitoring, and evaluating strategies (Phakiti, 2003). He further explained that these strategies are usually used when readers face with difficulties because they need to assess the situation and to monitor their comprehension to make their reading effective even though it might make their reading process slower.

Reading strategies have been found to be closely related to reading comprehension performance as stated by Naeni and Rezaei (2015). Based on some studies conducted in the field of reading, it has been found that there is a statistically significant difference on the use of cognitive and metacognitive reading strategies between students with high reading comprehension performance and those with low reading comprehension performance (Naeni and Rezaei, 2015; Zarra-Nezhad, Shooshtari, & Vahdat, 2015; Phakiti, 2003).

These studies suggested that students with high reading comprehension performance are mostly aware of their use of cognitive and metacognitive reading strategies, and can apply these strategies appropriately when comprehending English texts. On the other hand, students with low reading comprehension performance might not be aware on their use of cognitive and metacognitive reading strategies and could not apply them appropriately (Naeni and Rezaei, 2015).

One of the studies conducted in this area was a study conducted by Phakiti (2003) which examined the nature of cognitive and metacognitive reading strategies employed by Thai EFL learners in an EFL reading comprehension test. It also studied the relationship between the strategies used and the reading comprehension performances of the learners and found out how the highly successful, moderately successful, and unsuccessful learners differ in the use of cognitive and metacognitive reading strategies. The results of the research showed that the use of cognitive and metacognitive strategies had a positive relationship on the learners' performance in a reading comprehension test. It also showed that highly successful learners significantly use higher metacognitive strategies than the moderately successful ones and that the moderately successful ones have higher metacognitive strategies used than the unsuccessful ones.

Similarly, Naeni and Rezaei (2015) also conducted the research on the relationship between cognitive and metacognitive reading strategy use and reading comprehension, but in a different context. They did the research on the Iranian learners of English, examining the structural pattern of Iranian learners' use of learning strategies when taking a reading comprehension test and

the relationships between the learners' reading comprehension performance and the cognitive and metacognitive learning strategies that they employed. The research also revealed a strong relationship between the learners' reading proficiency scores and the strategies that they used when taking the comprehension test. Also, it showed a significant difference on the scores of the questionnaire between the more successful readers and the less successful ones showing that the more successful readers used more strategies compared to the less successful ones and that the more successful readers used more metacognitive strategies than the less successful ones.

Although many studies covered both cognitive and metacognitive reading strategies, there are some studies which only focus on metacognitive reading strategies (Iway, 2016; Zhang and Seepho, 2013). Iway (2016) compared the use of metacognitive reading strategies of the pre-service teachers at the initial, middle, and final stage of their education program. The results show that there is no significant difference between the scores of Metacognitive Awareness Reading Strategy Inventory (MARSI) at different stages of the program. In contrast, Zhang and Seepho (2013) found that there was statistically significant correlation between the use of metacognitive reading strategies and the Chinese EFL reading performance.

This study, then, focuses on finding out the nature of both cognitive and metacognitive reading strategies employed by Indonesian EFL pre-service teachers. These reading strategies cover comprehension, memory, and retrieval strategies under cognitive strategies, and planning, monitoring, and evaluating strategies under metacognitive strategies. It also aims at finding out the relationship between the

strategies used and the pre-service teachers reading comprehension performance. The proposed hypothesis is:

H1: There is a statistically significant relationship between cognitive and metacognitive reading strategies use and the reading comprehension performance of Indonesian EFL pre-service teachers.

METHOD

The research employed a quantitative research approach with correlational research design. The overall population chosen to become the research participants consists of 150 students. However, there were only 132 students showed up during the data collection sessions. Then, the total participants for the analysis were 118 since there were 14 participants who did not fill out the questionnaires completely, so the data were excluded from the analysis. These Indonesian EFL pre-service teachers are 18-20 years old students who were studying at a private university in Yogyakarta, Indonesia. They were, then, on their second year of their bachelor's degree program when the study was conducted. They have taken Basic Reading and Writing course and Academic Reading and Writing course in their first year, so they should have been familiar with reading strategies since they have learned these strategies in both courses. The participants were then categorized into three categories based on their reading test performance. Those who scored 0 to 12 were categorized into less successful readers (LSR), and there were 11 participants were in this category. Meanwhile, participants who scored 13 to 25 were categorized into the moderately successful readers (MSR), and there were 103 participants were in this category. Finally, there were 4 participants who scored 26 to 38, and they were categorized

as the highly successful readers (HSR).

The research was conducted by administering a reading comprehension test and a questionnaire on cognitive and metacognitive reading strategies to the participants. The reading comprehension test was adopted from a preparation module of a standardized test published by ETS (2009). This test consisted of three reading passages and thirty-eight questions. Meanwhile, the cognitive and metacognitive questionnaire was modified from the questionnaire developed by Phakiti (2003, 2006) which was quite similar to Purpura's (1997). The questionnaire consisted of thirty items in the form of Likert scale; thirteen items were for cognitive strategies, and seventeen items were for metacognitive strategies.

There were some steps the researcher did to ensure the validity and reliability of the research instruments. For the reading comprehension test, the researcher did not do any measurement to ensure the validity and reliability of the test since the test was taken from a standardized test, and it was assumed that the test was already measured for the validity and reliability, and it has been considered valid and reliable. Meanwhile, for the cognitive and metacognitive strategy questionnaire, used in this study, the researcher did a piloting before the questionnaire was distributed to the participants to ensure the validity and reliability of the questionnaire. A validity test was used to check whether the questionnaire really measures what it is supposed to measure. There were two steps of validity test used in this research (Cohen, Manion, & Morrison, 2011). The first step was the face validity step, and in ensuring this validity, the researcher chose three students who were not one of the participants of this research to read the questionnaire to make sure that the participants

would not have any difficulty in understanding the items in the questionnaires when filling them out. The next step in the validity test was items analysis. A reliability test was used to test the level of internal consistency of each item in the cognitive and metacognitive questionnaire for the pilot study, analyzing whether the items measure the same underlying construct for the sample participants. In order to measure that, the correlation coefficient (r value) was compared to the r-table for 118 participants. The items would be regarded valid if the r coefficient is higher than the r-table, which is 0.181.

Here are the results of validity and reliability tests. For the validity test, the face validity and items analysis tests showed good results. All three students stated that they did not have any difficulty in understanding the thirty items in the questionnaire. Meanwhile, for the item analysis, all the thirty items in the questionnaire have correlation coefficients higher than the r-table, 0.181, which means that

the items were valid. Meanwhile, the reliability test for the questionnaire yielded a good result with the Cronbach Alpha of .727 for cognitive strategies and .860 for metacognitive strategies. It means that there is an internal consistency of each item in the cognitive and metacognitive questionnaire, and that the items in the questionnaire measure the same underlying construct for the participants since the Cronbach Alphas for both strategies are in the range between -1.0 to +1.0. Also, the reliability indexes are quite high for they are close to +1.0. Therefore, the questionnaire is reliable to measure the cognitive and metacognitive reading strategies used by the pre-service teachers in this study. Table 1 below shows the taxonomy of the cognitive and metacognitive strategies and their reliability indexes.

Processing	Sub-categories	Items	Reliability
1. Cognitive Strategies	Comprehension	2, 3, 6, 7, 14	.727
	Memory	1, 5, 8, 22	
2. Metacognitive strategies	Retrieval	4, 9, 26, 29	.860
	Planning	10, 11, 19, 20, 23, 27	
	Monitoring	12, 16, 17, 21, 24, 25	
	Evaluating	13, 15, 18, 28, 30	

It can also be seen from the table that on the questionnaire, cognitive strategies include comprehension (5 statements), memory (4 statements), and retrieval (4 statements); whereas metacognitive strategies include planning (6 statements), monitoring (6 statements), and evaluating (5 statements).

The data were collected during the class time with the permission from the lecturer and also the students. At first, the researcher explained the research, the data collection procedure, the reading comprehension test, and the questionnaire to the participants. Afterward, the participants were requested to fill out the consent form, that is, the agreement to participate in the research to ensure that the participants understand the research and its risks. Then, with the researcher's presence in the classroom to answer students' questions if they have any, the participants did the reading test for sixty minutes followed by filling out the questionnaire for fifteen to twenty minutes afterward.

The data obtained were, then, analyzed statistically using descriptive statistics, and Pearson product moment correlation (multiple correlation) in order to answer the two questions. The descriptive statistics on the results of the questionnaire were obtained in order to reveal the distribution of the strategies employed by more-successful and less-successful readers, comparing the strategies employed by more successful readers to the strategies employed by less successful readers. This is done to answer the first question of the research. Then, the Pearson product moment correlation was calculated in order to answer the second research question, that is, to find out whether the cognitive and metacognitive strategies that are employed by the pre-service teachers relate to their reading com-

prehension.

RESULT

The results of the research are divided into two sections. The first section shows the results of the descriptive statistics to find out the nature of the cognitive and metacognitive strategies employed by Indonesian EFL pre-service teachers and their reading comprehension performance. The next section shows the correlation between the cognitive and metacognitive strategy use and the reading comprehension of these pre-service teachers, examining whether or not these variables relate to each other.

The Nature of Cognitive and Metacognitive Strategies Employed by Indonesian EFL Pre-service Teachers and Their Reading Comprehension Performance.

In presenting the data, the researcher presented the data from the reading test first since they were used to categorize the participants into three categories namely less successful readers (LSR), moderately successful readers (MSR), and highly successful readers (HSR), and the results of the questionnaire were arranged based on these categories. The results of the reading test were as follows. Out of 118 participants, the data were classified into three categories based on the reading comprehension score, namely less successful readers (LSR), moderately successful readers (MSR), and highly successful readers (HSR). Those who scored zero to twelve were categorized as the less successful readers (LSR); those who scored thirteen to twenty-five were categorized as moderately successful readers (MSR); and those who scored twenty-six to thirty-eight were categorized as the highly successful readers

(HSR). Thus, 11 participants were categorized as LSR; 103 participants were categorized as MSR; and 4 participants were categorized as HSR. The demography is illustrated in the following table.

Categories	LSR	MSR	HSR
Score Range	0-12	13-25	26-38
Number of participants	11	103	4

Further, Table 3 below shows the mean scores of each category. For the reading test, the mean score for LSR was 10.36, for MSR was 17.71, and for HSR was 27. The mean scores for the cognitive and metacognitive strategies were also presented. It can be seen that the mean scores for cognitive strategies were almost similar across the groups, but the lowest one was LSR and the highest one was HSR. It shows that HSR reported using the cognitive strategies more than MSR, who reported using the cognitive strategy more than LSR even

though the difference was not really significant. However, the results for metacognitive strategies were slightly different, in that MSR reported that they used metacognitive strategies more than HSR, who reported using the strategies more than LSR. Another thing that can be seen from the table is that the mean scores for metacognitive strategies were always higher than the mean scores for cognitive strategies for all the groups, meaning that all groups reported using metacognitive strategies more than cognitive strategies.

Categories	The mean score of Reading test	The mean score of Cognitive Strategy	The mean score Metacognitive Strategy
LSR	10.36	42.36	56.36
MSR	17.71	42.92	59.50
HSR	27	44.25	57.75
Total Participants	17.34	42.91	59.14

More detail mean scores comparison across the groups and strategies is presented in table 4. For cognitive reading strategies, it can be seen that HSR reported using memory strategy more than LSR and MSR. Meanwhile, for the comprehension and retrieval strategies, HSR reported using

them less than MSR, but more than LSR. For the metacognitive reading strategies, HSR reported using monitoring and evaluating strategies less than MSR, but more than LSR; and HSR reported using planning category less than both MSR and LSR.

Strategies	LSR	MSR	HSR
Total Cognitive	42.36	42.92	44.25
Comprehension	16.18	16.94	16.75
Memory	12.64	11.62	13.50
Retrieval	13.54	14.35	14.00
Total Metacognitive	56.36	59.49	57.75
Planning	19.64	20.70	19.50
Monitoring	20.00	20.70	20.25
Evaluating	16.72	18.07	18.00

More detail mean scores comparison across the groups and strategies is presented in table 4. For cognitive reading strategies, it can be seen that HSR reported using memory strategy more than LSR and MSR. Meanwhile, for the comprehension and retrieval strategies, HSR reported using

them less than MSR, but more than LSR. For the metacognitive reading strategies, HSR reported using monitoring and evaluating strategies less than MSR, but more than LSR; and HSR reported using planning category less than both MSR and LSR.

		Reading Score	Cognitive Strategies	Metacognitive Strategies
N		118	118	118
Normal Parameters ^a	Mean	17.339	42.915	59.144
	Std. Deviation	4.0090	5.0342	8.4462
Most Extreme Differences	Absolute	.075	.059	.060
	Positive	.075	.059	.060
	Negative	-.064	-.044	-.056
Kolmogorov-Smirnov Z		.820	.638	.656
Asymp. Sig. (2-tailed)		.513	.810	.782
a. Test distribution is Normal.				

The table shows that the significant value for the reading score was 0.513; the significant value for the cognitive reading strategies was 0.810; and the significant value for the metacognitive reading strategies was 0.782. These significant values were more than 0.05, which means that the

data were at the normal distribution, and they can be measured for the correlation test. The data were then tested using Pearson Product Moment Correlation Test. The result of the test is shown in Table 6 below.

Table 6				
<i>The Result of Pearson Product Moment Correlation Test</i>				
		total cognitive	total metacognitive	Reading Score
Cognitive Strategies	Pearson Correlation	1	.721**	.049
	Sig. (2-tailed)		.000	.599
	N	118	118	118
Metacognitive Strategies	Pearson Correlation	.721**	1	.127
	Sig. (2-tailed)	.000		.171
	N	118	118	118
Reading Score	Pearson Correlation	.049	.127	1
	Sig. (2-tailed)	.599	.171	
	N	118	118	118
**. Correlation is significant at the 0.01 level (2-tailed).				

The table shows the results of significance values and the Pearson Correlation Index of cognitive reading strategies and reading score, and metacognitive reading strategies and reading score. The r values and the Sig. (2-tailed) values are used to analyze the data. For the r values, if the observed r values are higher than the r -table, H_1 is accepted (observed r values $>$ r -table). While for the Sig. (2-tailed), if the Sig. values are lower than 0.05, H_1 is accepted (P -value $>$ 0.05). The results are significant if the two of the requirements are obtained.

The first result shows that the Sig. (2-Tailed) value between cognitive reading strategy and reading comprehension performance was 0.599. The score is higher than 0.05 ($0.599 > 0.05$). It can also be seen from the Pearson Correlation index (r value) at (d.f. = 118) which was 0.049. Here the r value is lower than the r -table ($0.049 < 0.181$). The result shows that there was no statistically significant correlation between cognitive reading strategy and reading comprehension performance. For the correlation between metacognitive reading strategy and the reading comprehension performance, Sig. (2-Tailed) value was 0.171. It is higher than 0.05 ($0.171 > 0.05$). In addition, the r value at (d.f. = 118) was 0.127. The r value is lower than the r -table ($0.127 < 0.181$). This indicates that there is also no statistically significant correlation between the use of metacognitive reading strategy and reading comprehension performance. Thus, the result of the correlation test showed that alternative hypothesis (H_1) is rejected for there is no statistically significant relationship between the use of cognitive and metacognitive reading strategies and the pre-service teachers' reading comprehension performance. It implies that the use of cognitive and metacognitive reading strategies

does not relate to the pre-service teachers' reading comprehension performance.

DISCUSSION

This research focuses on the use of cognitive and metacognitive reading strategies and their relationship with the reading comprehension performance of pre-service teachers because the results of previous studies (Naeni & Rezaei, 2015; Phakiti, 2003; Zarra-Nezhad, A., Shooshtari, Z. G., & Vahdat, S., 2015; Purpura, 1998) mostly showed that there is a correlation between the reading strategies and the reading comprehension performance of the users. These previous studies also showed that highly successful readers reported using more cognitive and metacognitive reading strategies compared to moderately successful readers. Similarly, moderately successful readers reported using more cognitive and metacognitive reading strategies than less successful readers.

It can be seen from the result of the descriptive statistics of this research in general that HSR reported using cognitive reading strategies the most. This confirms the results of the previous research ((Naeni & Rezaei, 2015; Phakiti, 2003; Purpura, 1998). Meanwhile, for the metacognitive strategies, MSR reported using the strategies the most. The results are not in line with the previous studies (Naeni & Rezaei, 2015; Phakiti, 2003; Purpura, 1998), in that HSR reported using both the cognitive and metacognitive reading strategies the most, followed by MSR in the middle, and LSR as the ones who reported using both strategies the less.

Moreover, the mean scores comparison across the groups and the sub-strategies of this study do not confirm with the results of previous research either. It can be seen

from the result of the descriptive statistics that the mean scores of MSR were higher than HSR for comprehension and retrieval strategies (cognitive), and also for planning, monitoring, and evaluating strategies (metacognitive). For one sub-strategy, LSR had higher scores than MSR, that is, on the memory strategy. This is in contrast to the results of the previous research mentioned earlier in that highly successful learners had higher mean scores on both cognitive and metacognitive strategies compared to moderately successful learners, who had higher mean scores on both cognitive and metacognitive strategies than less successful learners, and the highly successful ones had particularly higher scores on metacognitive strategy use.

One possible explanation to these results is that LSR, and MSR probably over-reported their reading strategy use because they wanted to show that they understood about reading strategies, and that they already applied them while doing the reading test even though in fact they did not use the strategies or they use them but not very often. On the other hand, HSR might under-report their strategy use. They may have better understanding on reading strategies and also better awareness of the reading strategies they use, so they were more careful in filling out the questionnaire making sure that they reported their reading strategy use correctly. Another possible explanation is that the pre-service teachers probably know and aware of the strategies for they have learnt them in the class, but they could not apply the correct strategies when they did the reading.

As for the relationship between the cognitive and metacognitive strategies used and the reading comprehension performance, the results showed that there was no statistically significant correlation

between the cognitive reading strategies employed by the pre-service teachers and their reading comprehension performance with the significant value of 0.599. There was also no statistically significant correlation between the metacognitive reading strategies and the reading performance with the significant value of 0.171. There was a correlation between the strategy use and the reading performance, but the correlation was only very small, that is 0.049 for cognitive strategies to reading performance and 0.127 for metacognitive strategies to reading performance, so that they were not significant. In general, these results are not in line with the results of previous studies which found that there is a relationship between cognitive and metacognitive reading strategies and the learners' reading achievement (Naeni & Rezaei, 2015; Zarra-Nezhad, A., Shooshtari, Z. G., & Vahdat, S., 2015; Kummin & Rahman, 2010).

The results of this study do not confirm the results of previous studies. It might be because there are other factors influencing the reading comprehension performance of the pre-service teachers. These other factors which might take part in influencing the results can be the students' language ability and the difficulty level of the test. This is in line with Phakiti (2003), who stated that,

The fact that the relationship of cognitive and metacognitive strategies to the reading performance was weak ... might be because there were factors other than these strategies – such as language ability, test method effects and error of measurement – that could be used to explain the test score (p.40).

Thus, the results of the cognitive and metacognitive reading strategies questionnaire and the reading test can be used by the lecturer to reflect on their teaching. The lecturer can provide more practices for the students, so that they can apply the reading strategies that they have learnt in the class to comprehend texts in English. That way, it is expected that the pre-service students' reading comprehension performance could also be improved.

CONCLUSION AND RECOMMENDATION

The current study seeks to reveal the cognitive and metacognitive reading strategies employed by the Indonesian EFL pre-service teachers. It showed whether highly, moderately, and less successful Indonesian EFL pre-service teachers differ in terms of reading strategies they employed in comprehending English texts. It also found out the relationship between the strategies and the reading comprehension performance of these pre-service teachers, analyzing whether the differences in the use of these reading strategies relate to their performances in a reading comprehension test. The results of the study showed that there was no significant relationship between the cognitive and metacognitive reading strategies employed by Indonesian EFL pre-service teacher and their performance in a reading comprehension test. The results also showed that there was no significant difference in the use of cognitive and metacognitive reading strategies between highly successful, moderately successful, and less successful readers. The results were different from the results of the previous studies which showed that there was a significant relation between the use of cognitive and metacognitive reading strategies and the reading performance, as well as there was a difference in the use of

these strategies.

Since the study showed that there was no significant relationship between cognitive and metacognitive reading strategies and the pre-service teachers' reading comprehension performance; whereas some previous studies found otherwise, several implications regarding the implementation of cognitive and metacognitive reading strategies in language learning can be drawn. First, the teacher is encouraged to provide more time to teach the students how to apply cognitive and metacognitive reading strategies to improve the students' reading comprehension performance. Second, the teacher should provide more practices and tasks on applying both cognitive and metacognitive reading strategies for the students because they may know and understand the strategies, but they may not know how to apply them correctly when they are comprehending English texts resulting on the moderately or less successful reading comprehension performance. By practicing a lot, the students are expected to be able to internalize the strategies, and apply them appropriately while reading English texts.

It is also suggested for future researchers to design their own reading test based on the students' ability and the materials that they have received in the class, so that the students will be readier to do the test, and the results will be better, and might provide better insight for the use of reading strategies both cognitive and metacognitive strategies. Also, the researcher might need to reconsider the time allocation to do the test, so the students have the right amount of time to finish all the test items. Finally, it will be better if a follow up interview can be conducted since it can provide data that could not be obtained from the questionnaire.

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