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# RECIPROCAL TEACHING, METACOGNITIVE AWARENESS, AND ACADEMIC PERFORMANCE IN TAIWANESE JUNIOR COLLEGE STUDENTS

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## Abstract:

This study was conducted to discover the effects of reciprocal teaching (RT) on metacognitive awareness and reading comprehension in junior college students. The Metacognitive Awareness Inventory (MAI) was used to identify metacognitive awareness, and the General English Proficiency Test (GEPT) was used to evaluate reading comprehension. Two reading courses with 77 students taught using RT were treated as the experimental group, and 30 students from a non-RT reading course constituted the control group. The results showed statistically significant differences in MAI scores (conditional knowledge and debugging strategy) and reading comprehension between the 2 groups. Although RT had a significant impact on only 2 out of 8 MAI scales, the experimental group had higher overall mean scores on the 8 MAI components than the control group. However, unlike RT, the MAI failed to have a statistically significant impact on enhancing students' reading scores. Thus, metacognitive awareness might affect text comprehension, but metacognitive awareness did not influence the levels of reading comprehension students achieved in this study.

## Keywords:

reciprocal teaching, reading comprehension, metacognitive awareness, MAI

**JEL Classification:** I29

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# 1. INTRODUCTION

Traditional English teaching methods in Taiwan focus mainly on delivering lectures on vocabulary and structures, with the result being that students spend a considerable amount of time memorizing words, grammar, and structures, rather than learning how to comprehend the material by using reading strategies. Primarily because of the intensive academic schedule, students are not trained to improve comprehension, and their poor performance might lead students to become less motivated and more anxious about learning English.

Reciprocal teaching (RT), a multiple-strategy approach used for teaching reading comprehension, is a technique considered to be effective in helping students become active learners by reading for comprehension (Taylor et al., 2006; National Reading Panel, 2000). Each RT strategy is designed for a specific goal in language learning, with the aims of RT being to allow students to participate in generating resources and questions to gain a deep understanding of the written text.

Metacognition has been reported to influence learning positively (Kruger & Dunning, 1999; Schraw & Dennison, 1994). Western theories on intellectual development, such as those of Bruner, Piaget, Gagne, and Sternberg, have proposed that cognitive and metacognitive skills can be developed though practice and drills (Roblyer & Edwards, 2000). Based on studies conducted in Taiwan, RT is considered an effective approach for developing metacognition (Yang, 2002) and reading comprehension (Anastasiou & Griva, 2009; Frances & Eckart, 1992; Tsai, 2010; Ya, 2010; Yang, 2002; Su, 2010). Thus, the use of RT has been recommended for improving students' reading strategies and metacognitive awareness.

Since the 1970s, several models and strategies of reading comprehension have been developed. Research for the National Reading Panel has identified five effective reading comprehension strategies: summarizing, self-questioning, story-structure teaching, graphic and semantic organizing, and comprehension monitoring (Taylor et al., 2006, p.305).

RT was chosen as the teaching method in this study to develop students' learning processes and thereby their reading comprehension. The purpose of this study was to use RT to promote metacognitive awareness though practice and activities. The specific aim was to help the participating students enhance their metacognitive awareness and reading comprehension through the practice of RT.

## 1.1 *Purpose of the study*

In this study, the first aim was to determine whether RT resulted in higher levels of

metacognitive awareness and reading comprehension in English-major students at a five-year junior college in Taiwan. A second aim was to analyze the relationships among RT, metacognitive awareness, and reading comprehension.

### 1.2 *Research questions and hypotheses*

The study was designed for two purposes: one, to determine whether RT leads to greater metacognitive awareness and better reading comprehension; and two, to investigate if RT and metacognitive awareness can predict students' English reading comprehension.

To address these aims, the following specific questions were asked:

1. Does RT have any effect on metacognitive awareness?
2. Does RT lead to better reading comprehension?
3. Do RT and metacognitive awareness predict students' reading comprehension?

Based on these three questions, three hypotheses were generated:

Hypothesis 1: Students in RT groups have higher metacognitive awareness than students in non-RT groups.

Hypothesis 2: Students in RT groups perform better in reading comprehension test than students in non-RT groups.

Hypothesis 3: RT, metacognitive awareness, and reading comprehension are positively correlated.

### 1.3 *Significance of the study*

RT is considered an effective approach to promote reading comprehension (Frances & Eckart, 1992; Tsai, 2010; Ya, 2010; Yang, 2002; Su, 2010), and educators have started investigating how RT affects Taiwanese students' learning. However, research on RT studies in Taiwan revealed that most of the studies on RT have centered on elementary students and adults, especially in the area of English learning, and the effect of RT on metacognitive awareness has not been discussed during the past decade. Therefore, in this study, the aim was to focus on junior college students and on the relationships among RT, metacognitive awareness, and reading comprehension.

## 2. LITERATURE REVIEW

Effective instruction often comprises several complex teaching patterns (Holt & Kysilka,

2006), and how a teacher selects and adopts instructional patterns depends on various factors, such as learning goals, students' requirements, or teaching preferences. Because instructional patterns vary from person to person and from field to field, teachers have to decide how to instruct their students by selecting appropriate teaching patterns to achieve optimal learning outcomes.

Strategies are teachable and strategies help improve students' performance on comprehension tests and recall (Carrell, 1985; Janzen, 2001; Pearson & Fielding, 1991). Moreover, because reading involves cognitive and metacognitive structures, strategies that promote higher-level thinking can be applied to enhance readers' understanding and retention in reading (Sousa, 2006).

RT is an instructional technique that was designed by Palincsar and Brown (1984) to enhance reading comprehension by teaching students reading strategies. Palincsar and Brown recommended teaching four activities to students to improve comprehension: (a) summarizing the main points and monitoring understanding of the text; (b) predicting what might come next; (c) clarifying unclear or ambiguous words, phrases, or sentences; and (d) generating questions and answering them (Palincsar & Brown, 1984; Brown & Palincsar, 1989).

Each of the four strategies addresses specific reading functions. By reviewing traditional and current theoretical literature, Palincsar and Brown (1984) determined the six most important functions engaged in the instruction of comprehension.

The aim of RT is to allow students to generate questions while reading, which leads to another type of instruction called responsive engagement. Because comprehension deals with cognitive features, the aims of using responsive engagement instruction are to provide practice to students to in engaging keenly with the text and then to enhance students' comprehension by developing their cognitive skills (Taylor et al., 2006).

Successful readers are accepted to be capable of adopting resources for learning strategically (Celce-Murcia, 2001; Tompkins, 2005). Among various learning strategies, those that emphasize cognitive and metacognitive processes are considered vital for fostering students' higher-level thinking and learning.

For developing cognition, meaningful learning is considered a crucial goal and procedure in both learning and teaching (Saadeh, 1969), and answering questions is postulated to be an effective method of stimulating meaningful learning and reading comprehension (Andre, 1990; Hiller, 1974; Richards & Vesta, 1974; Wolfe, 1976).

# 3. METHODOLOGY

## 3.1 *Participants*

Participants in this study were students in three English-department reading classes that the researcher taught at a private junior college in Southern Taiwan. The reading courses were taught for 2 hours a week for 16 weeks. One class was randomly chosen as the control group, and the other two classes were treated as the experimental group. The data of the study were based on surveys answered by 127 students in the three classes. After uncompleted surveys were eliminated, the valid samples obtained were from a total of 107 students, 16 males (15%) and 91 females (85%), with 77 students (72%) in the experimental groups and 30 students (28%) in the control groups. All participants were 17–19-years old, and Chinese was their native language.

## 3.2 *Research instruments*

Instruments used in this study were the Metacognitive Awareness Inventory (MAI) and an English reading test, called the General English Proficiency Test (GEPT).

**Metacognitive Awareness Inventory:** MAI was designed by Schraw and Dennison (1994) to measure adults' metacognitive awareness. MAI comprises 52 items that are classified into eight components (*declarative knowledge, procedural knowledge, conditional knowledge, planning, information management, monitoring, debugging, and evaluatio*n) under two broad categories (*knowledge of cognition and regulation of cognition*). Participants responded to each statement by using 5-point Likert scales. To help students understand the questions and to avoid confusion, the MAI used in this study was translated into Chinese by the researcher.

**General English Proficiency Test:** To evaluate students' English reading comprehension, the reading section of the GEPT was used in the study. The GEPT is an English testing system developed in 2001 by the Language Training & Testing Center in Taiwan to assess all levels of English proficiency. Because of its validity, the GEPT is widely accepted and adopted by companies, universities, and government organizations to measure language achievement. The GEPT is divided into five levels according to difficulty: elementary, intermediate, high-intermediate, advanced, and superior. Each level includes listening, reading, writing, and speaking components and is administered in two stages.

The elementary level of the GEPT was chosen in this study because it is designed

for examinees who have achieved English proficiency at least at a junior high school level. The GEPT reading test has a total of 35 items that cover three components of reading: vocabulary and structure (Items 1 to 15), cloze texts (Items 16 to 25), and reading for comprehension (Items 26 to 35). Each item contains a statement that requires examinees to choose one answer that best fits its description. Participants must complete the reading test in 35 minutes, and the maximum score is 120 points.

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3.3 *Procedures*

The study was conducted in five steps:

Step 1: Translating the questionnaire (MAI) into Chinese and choosing the reading test.

Step 2:

1. Explaining the purpose of the study;
2. Asking participants to complete the MAI and the reading test (Pretest).

Step 3:

1. Demonstrating the four RT strategies;
2. Practicing strategies while reading during a 16-week reading course.

Step 4: Asking participants to complete the posttest of MAI and a reading test on week 16.

Step 5: Collecting, computing, and analyzing data.

3.4 *Data Collection*

Participating students were given relevant materials including a copy of the MAI and the GEPT reading comprehension test in the beginning of semester. In order to investigate the effects of teaching on student performance, the same materials were handed to participants in the end of semester. Participants were guaranteed that all data and information was collected anonymously and would not be accessed by anyone other than the researcher.

3.5 *Variables and Data Analysis*

The data was gathered from the MAI with a five-point Likert scale, from personal feedback, and from the GEPT reading scores. The Statistical Package for the Social Sciences (SPSS), Version 16.0, was used for data analysis in this study. Descriptive statistics, such as means, standard deviations, t-tests, and regression analysis were adopted to analyze

and determine the results for this study's research questions.

The first purpose of this study was to identify whether reciprocal teaching affects Taiwanese EFL junior college students' metacognitive awareness and reading comprehension. The second purpose was to investigate the relationships among reciprocal teaching, metacognitive awareness, and reading comprehension.

The data was intended to answer the research questions that were presented previously. In order to test hypothesis 1 and 2, which questioned whether reciprocal teaching have an influence on promoting student metracognitive awareness and reading comprehension, an analysis of covariance (ANCOVA) was utilized. Two types of groups comprised the independent variable, whereas the dependent variable was student posttest MAI scores and reading scores. Pretest scores on individual scale of MAI and reading scores were treated as covariate to control the effect of difference on two groups.

## 4. RESEARCH FINDINGS

Information was gathered in this study to answer three research questions: Does RT have any effect on metacognitive awareness? Does RT lead to better reading comprehension? Do RT and metacognitive awareness predict students' reading comprehension?

**Research question 1:** Does RT have any effect on metacognitive awareness?

Analysis of covariance (ANCOVA) was performed to test Hypothesis 1, which predicted that students in the experimental groups would have higher metacognitive awareness than students in the control group.

The research findings indicated that the overall MAI scores of the two groups were not significantly different ($F_{(1.104)}$ = 2.703, $p$ >.05). However, after adjustment using the covariate, the main effect of RT was significant on knowledge of cognition factors ($F_{(1.104)}$ = 5.124, $p$ <.05), conditional knowledge ($F_{(1.104)}$ = 8.059, $p$ <.01), and debugging ($F_{(1.104)}$ = 8.936, $p$ <.01).

The average MAI scores (Table 1) revealed that the experimental groups performed better than the control group on both knowledge of cognition factors (experimental: $M$ = 60.70, $SD$ = .780; control: $M$ = 57.36, $SD$ = 1.252) and regulation of cognition factors (experimental: $M$ = 125.43, $SD$ = 1.578; control: $M$ = 121.74, $SD$ = 2.529).

These results indicate that students taught using RT methods gained better overall and conditional knowledge of cognition and debugging skills for regulation of cognition than students who were taught without using RT methods. Thus, Hypothesis 1 was

supported.

Table 1 Descriptive Statistics of MAI Scores in Experimental and Control Groups

| | Experimental | | Control | | Total | |
|---|---|---|---|---|---|---|
| MAI scales | M | SD | M | SD | M | SD |
| Overall | 186.134[a] | 2.266 | 179.089[a] | 3.633 | 182.611[a] | 2.140 |
| Knowledge of cognition | 60.704[b] | .780 | 57.359[b] | 1.252 | 59.032[b] | .736 |
| declarative | 28.243[c] | .363 | 27.144[c] | .582 | 27.693[c] | .343 |
| procedural | 14.304[d] | .246 | 13.721[d] | .395 | 14.012[d] | .232 |
| conditional | 18.125[e] | .286 | 16.580[e] | .461 | 17.352[e] | .270 |
| Regulation of cognition | 125.426[f] | 1.578 | 121.739[f] | 2.529 | 123.583[f] | 1.490 |
| planning | 24.971[g] | .372 | 24.241[g] | .596 | 24.606[g] | .351 |
| information | 35.253[h] | .514 | 35.118[h] | .824 | 35.185[h] | .485 |
| monitor | 24.503[i] | .380 | 24.142[i] | .609 | 24.323[i] | .359 |
| debug | 19.532[j] | .355 | 17.502[j] | .573 | 18.517[j] | .335 |
| evaluate | 21.143[k] | .307 | 20.800[k] | .493 | 20.971[k] | .290 |

Note. Covariates appearing in the model were evaluated at the following values: a. pretest MAI scores = 176.97; b. pre knowledge = 57.3738; c. pre declarative = 26.8972; d. pre procedural=13.3832; e. pre condition = 17.0935; f. pre regulation = 119.5981; g. pre plan = 23.9159; h. pre information = 33.6355; i. pre monitor = 23.1215; j. pre debug = 19.1028; k. pre evaluate = 19.8224

**Research question 2:** Does RT lead to better reading comprehension?

ANCOVA was used to test Hypothesis 2, which predicted that students in the experimental groups would receive higher reading scores than students in the control group. The data gathered indicated a statistically significant difference between the two groups on reading scores. After pretest reading scores were used as the covariate to control for the distinctions between the two groups, the difference between the

adjusted scores of the two groups remained significant ($F_{(1,104)}$ = 25.492, $p$ <.001). On average, the experimental groups performed better in reading than the control group (experiment: $M$ = 87.168, $SD$ = 2.317; control: $M$ = 64.989, $SD$ = 3.721). These results indicate that students taught using RT methods scored higher on reading comprehension than students who were taught without using RT methods. Thus, Hypothesis 2 was supported.

**Research question 3:** Do RT and metacognitive awareness predict students' reading comprehension?

Regression analysis (Table 2) confirmed the significance of the model predicting students' reading comprehension ($F_{(6.100)}$ = 11.107, $p$ <.001). The results of Model 1 and Model 2 did not indicate any significance of MAI or of the two subscales of MAI on students' reading scores. Neither total MAI scores nor the two subscales of MAI provided statistically significant evidence of development of reading comprehension. However, Model 1 indicated that groups ($\beta$ = -.363, $p$ <.01) and pretest GEPT ($\beta$ = .416, $p$ <.01) had significant impacts on posttest reading scores: students in the experimental groups scored higher in reading than students in the control group, and students who received RT scored higher in reading comprehension than students who did not receive RT.

Table 2 Regression Analysis Summary for Variables Predicting Posttest Reading Scores

| | Model 1 | | | Model 2 | | |
|---|---|---|---|---|---|---|
| Variables | *B* | *SEB* | *β* | *B* | *SEB* | *β* |
| grade | 3.669 | 4.889 | .068 | 3.543 | 4.853 | .066 |
| gender | 7.514 | 6.101 | .105 | 6.971 | 5.857 | .098 |
| group | -20.584 | 5.047 | -.363*** | -20.793 | 4.987 | -.367*** |
| GEPT(pretest) | .505 | .100 | .416*** | .507 | .099 | .418*** |
| knowledge cognition | .172 | .517 | .053 | | | |
| regulation cognition | -.083 | .267 | -.050 | | | |

| | | | |
|---|---|---|---|
| overall MAI | .001 | .092 | .001 |

*Note*. $R^2$ for model 1 was = .398 and adjust $R^2$ = .362. $F_{(6,100)}$ = 11.107, $p$ < .001, whereas $R^2$ for model 2 was = .397 and adjust $R^2$ = .367. $F_{(5,101)}$ = 13.303, $p$ < .001.

*$p$ < .05. ** $p$ < .01. *** $p$ < .001.

*Summary of findings*

1. To some extent, reciprocal teaching significantly predicted students' knowledge of cognition factors (overall, conditional knowledge) and regulation of cognition factors (debugging skills). That is, student in RT groups scored higher on overall and conditional knowledge of cognition, and conditional knowledge of cognition, and debug skills of regulation of cognition than those who did not receive RT methods.
2. On average, experimental groups performed better in all areas of MAI, including 3 types of skills belonging to knowledge of cognition and five types of skills belonging to regulation of cognition than control groups.
3. Experimental groups achieved better in reading comprehension than control groups.
4. Reciprocal teaching had significant impact on students' reading comprehension. It is to say that students with reciprocal teaching performed better reading scores than those without receiving reciprocal teaching.
5. Although experimental and control groups revealed significant differences on average scores of MAI, reciprocal teaching failed to make a significant impact on students' overall MAI and two subscales of MAI.
6. Overall MAI and two subscales of MAI did not indicate any significance on students' reading comprehension.

## 5. DISCUSSION OF THE FINDINGS

The following discussion of the results includes four sections: (a) Taiwanese EFL(English as foreign language) students' MAI scores; (b) the effect of RT on MAI; (c) the effect of RT on English reading; (d) the relationships among RT, MAI, and English reading achievement. Possible explanations for the findings are provided in each section.

### 5.1 *Taiwanese EFL students' MAI scores*

In terms of total MAI scores, the research data showed that the mean score of MAI was

182.611 out of 260. The study by Şendurur et al. (2011), in which self-reporting by pre-service college students was used, presented similar results, with slightly higher scores on both MAI subscales than the participants in this study. However, in the study by Young and Fry (2008) on undergraduate and graduate students, the mean score reached 206.85, which is considerably higher than that in this study. Here, the MAI scores were found to be significantly correlated with students' academic performance and grade level. Moreover, the results indicated a significant difference between the experimental and control groups on knowledge of cognition, a finding that is opposite to that of the Young and Fry (2008) study. Although parts of the MAI factors were distinct between the two groups, the results showed no significant difference when all MAI factors were considered; thus, RT helped build metacognitive awareness, but the effect was not sufficiently strong to have a statistically significant impact on students' overall metacognitive awareness. Research suggests that age could also influence metacognitive skills: old children and young learners have been reported to acquire better metacognitive skills and build more complex metacognitive skills through training than young adults (Baker & Brown, 1984; Flavell, 1985; Schraw & Moshman, 1995), which could explain why the 17–19-year-old participants of this study may have found developing appropriate metacognitive skills challenging. Moreover, the educational climate at the junior-college stage is test-oriented, focusing mainly on training students to score as high as possible on exams. Thus, little emphasis is placed on the attention and motivation required to practice cognitive skills.

### 5.2 *The effect of RT on MAI*

This study was conducted to test whether RT can predict students' MAI scores and reading performance. As expected, RT was found to strongly affect students' MAI scores, especially in conditional knowledge and debugging strategy.

**Conditional knowledge** is the knowledge required for solving problems faced in diverse learning tasks (Schraw & Moshman, 1995). Pintrich (2002) stated that conditional knowledge enables learners to use specific cultural norms or teacher preferences to solve problems. For example, a student who understands a teacher's instructional preference is likely to match the teacher well: if the student is aware that the teacher administers quizzes after lecturing, the student may take notes or pay full attention during lectures and thereby perform well on tests. The scores in this study suggested that students taught using RT had higher awareness of conditional knowledge, meaning that they were aware of "why" to learn, which could be because the students gained a clear understanding of the purpose of reading by following the four strategies taught by the teacher.

The **debugging strategy**, which students use to detect and correct their own errors, was found to be significantly different between the experimental and control groups. This finding could be explained by the study of Young and Fry (2008), who reported that graduate students from schools that require students to pass an elimination exam are better skilled at identifying their own learning errors than graduate students at other schools. The students in this study may have developed the ability to identify their learning errors because of the RT strategies used in the class, especially the clarifying and questioning strategies. In class, each student was required to ask for clarification when he or she encountered unfamiliar words, or had to answer questions related to unclear or known text to enable the teacher to assess the student's reading comprehension. During the process, hints or guidance rather than correct answers were provided to help students find answer to questions.

Knowledge of cognition and regulation of cognition can potentially affect one another **(**Schraw, 1994; Schraw & Moshman, 1995**;** Swanson, 1990). Thus, training for certain metacognitive skills might drive the development of other skills. However, not all the skills are beneficial for teachers' strategic instruction, and therefore teachers use multidimensional instruction to promote certain metacognitive skills and then enhance other skills as the metacognitive skills focused on initially show improvement.

On average, reciprocal teaching method affected frequency of students' MAI. In this study, students in the RT groups scored higher in all areas of MAI than students in the control non-RT group. Caliskan and Sunbul (2011) obtained similar results: in their study, awareness of metacognitive knowledge was enhanced when students were taught learning strategies in a Turkish course. Turan, Demirel, and Sayek (2009) studied medical college students and reported that instruction that focused on learners substantially enhanced MAI scores. Collectively, these findings reveal how learners' development of metacognitive skills varies with age and how metacognitive skills can be taught and trained by instructing students on learning strategies.

### 5.3 *The effect of RT on English reading comprehension*

In this study, students who received RT scored higher in reading comprehension than students who did not receive RT. Compared with traditional reading instruction, RT is more learner-centered; in RT, students are taught to use strategies while reading. Moreover, student-centered teaching has been proposed to provide students the opportunity to engage in their own learning and to enable students to choose learning strategies for specific situations (Holt & Kysilka, 2006; O'Neil & Spielberger, 1979). These findings can be explained using the constructivist view that teachers focus on

students' developing abilities to manipulate materials and knowledge to complete assignments rather than on simple memorization. For students who do not fare as well as others, time and raising and answering questions are essential for improving reading comprehension. In group discussions, it is important that students are open and anxiety-free when seeking to clarify their questions and problems. Moreover, Palincsar (2013) stated that students are motivated as they gain experience in using RT strategies and that RT can enhance students' interaction with their peers and teachers. Instructing students on learning strategies gives the students opportunities to enhance their awareness of activities that affect learning outcomes and to apply the strategies to their learning.

### 5.4 *The relationships among RT, MAI, and reading comprehension*

When RT and MAI scores were examined together, only RT predicted reading comprehension. Neither overall MAI scores nor the scores of the two subscales of MAI scores significantly affected reading comprehension, agreeing with the results obtained by Tok, Ozgan, and Dos (2010), who studied an online English course. These results indicate that the students' levels of metacognitive awareness did not contribute substantially to their reading comprehension. Similar studies, conducted mostly in the USA, have focused on discovering whether RT is related to measurements of academic performance, such as GPA (Coutinho, 2007; Everson & Tobias, 1998; Nietfeld et al., 2005; Young & Fry, 2008) and SAT (Sperling et al., 2004). Everson and Tobias (1998) found the closest relationship to be between metacognitive knowledge and English. In the studies of Coutinho (2007) and Young and Fry (2008), weak-to-medium correlation was detected between metacognition and academic performance in college students, and more senior students were found to have higher MAI scores than junior students. Interestingly, however, MAI scores have been reported to correlate negatively with SAT mathematics scores (Sperling et al, 2004).

In addition to the studies on academic achievement, studies on metacognitive awareness and its effect on reading comprehension have been conducted mostly with students who speak a language other than English. RT has been widely reported to enhance EFL learners' reading comprehension substantially (Akfassi, 1998; Choo, Eng, and Ahmad, 2011; Fung, Wilkinson, and Moore , 2003; Kingner and Vaughn, 1996; Lin, 2012; Spörera, Brunsteina, and Kieschkeb, 2009; Tsai, 2010; Ya,2010; Yang, 2002, Su, 2010; Yang, 2010; Shiau,2010). In the study by Shiau's (2010) on 36 male senior high school students, RT enhanced students' thinking skills and English ability. Thus, teaching learning strategies can improve reading comprehension effectively (Carrell, Pharis, & Liberto, 1989; Fung, Wilkinson, & Moore, 2003; Pilonieta & Medina, 2009;

Spörera, Brunsteina, & Kieschkeb, 2009; Wang, 2008; Yang, 2010).

## 6. IMPLICATION

In this study, reciprocal teaching was found to enhance students' certain metacognitive awareness and English reading comprehension. However, RT failed to provide significant evidence on the development of individual skill of metacognitive awareness. By classroom observation, the researcher found the amount of time is essential to use RT strategies well and smoothly, especially for students who have difficulty reading fluently. In this case, it is suggested to divide students with different levels into groups, and then it is hoping to provide lower-level students more support and help from high-level students. In addition, without sufficient practice, students did not use certain strategies well, such as predicting and summarizing strategy. It could be a fact that most classes students took are mainly teachers' lectures, and seldom did they have chance to practice those strategies. It is suggested that teachers could adopt part of RT strategies, and adjust the amount of time the teacher want to spend on the strategies. All RT strategies are not necessary to receive the same attention and practice. Teachers could choose what strategy to be trained based on students' need and learning condition.

## 7. CONCLUSION

RT is considered an effective strategic instruction method for developing cognitive skills and for enhancing academic performance (Akfassi, 1998; Carrell, Pharis, and Liberto, 1989; Kingner and Vaughn, 1996; Palincsar, 2013; Pilonieta and Medina, 2009; Fung, Wilkinson, and Moore, 2003; Spörera, Brunsteina, and Kieschkeb, 2009; Wu, 2012; Yang, 2010). RT is successful mainly because (a) it involves comprehension-fostering and comprehension-monitoring activities; (b) RT requires students, both capable and weak learners, to respond to tasks by using the RT strategies; and (c) RT offers teachers the opportunity to monitor students' comprehension and to provide support when students face difficulties in comprehending reading materials.

Although RT facilitates the development of reading-comprehension abilities and metacognition, RT may not be effective for students who find decoding challenging (Hashey & Connors, 2003). Students who cannot decode or recognize words to comprehend text sufficiently might find working with peers using RT strategies uncomfortable. Moreover, in this study, some students were noted to be anxious when answering questions from the teacher and that anxiety might interfere partly

with the development of potential skills. Because students learn better when they feel comfortable in the learning environment, assigning more peer-to-peer tasks may be more effective than teacher-student activities for helping students learn. Moreover, students can affect the development of metacognitive skills in one another (Schraw, 1994; Schraw & Moshman, 1995; Swanson, 1990). Thus, based on the ZPD theory, tasks could be assigned to groups comprising students with mixed abilities to reduce the anxiety students experience when facing the teacher and to enhance their metacognitive skills through the process of task completion, with the support of the teacher.

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