

**THE EFFECTS OF RECIPROCAL TEACHING ON THAI
HIGH-SCHOOL STUDENTS' ENGLISH READING
COMPREHENSION ABILITY**

ผลของการใช้การสอนการอ่านแบบ **RECIPROCAL TEACHING** ต่อความเข้าใจใน
การอ่านภาษาอังกฤษในชั้นมัธยมศึกษาตอนปลาย

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ABSTRACT

This study aimed to investigate the effects of reciprocal teaching modified from Palincsar and Brown's (1984) on the English reading comprehension of twelfth grade students in a Thai high-school classroom. The experimental group was taught by reciprocal teaching while the control group was instructed through skill-based teaching. Reciprocal teaching involves four main reading strategies: predicting, questioning, clarifying, and summarizing. The results indicated that reciprocal teaching had significantly positive effects on the English reading comprehension of Thai high-school students. The posttest's mean score of the experimental group was significantly higher than that of the control group. The reciprocal teaching also enhanced the reading ability of both proficient and less proficient students. Moreover, the students employed more metacognitive reading strategies after reciprocal teaching. The findings of this study offer many vital pedagogical implications for teachers, students, and educators in an EFL reading context. The most obvious pedagogical implication is that reciprocal teaching is one of the reading strategy instructions which, through proper training on metacognitive strategies, best enhances student readers' reading comprehension and metacognitive awareness.

Keywords: Reciprocal Teaching; Reading comprehension; Metacognitive reading strategy

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บทคัดย่อ

จุดมุ่งหมายในการวิจัยครั้งนี้เพื่อศึกษาประสิทธิภาพของการสอนการอ่านแบบ Reciprocal Teaching ต่อความเข้าใจในการอ่านภาษาอังกฤษและยุทธวิธีอภิปัญญาไทยในชั้นมัธยมศึกษาปีที่ 6 กลุ่มตัวอย่างที่ใช้ในการศึกษาค้นคว้าครั้งนี้แบ่งนักเรียนออกเป็นเป็น 2 กลุ่ม คือเป็นกลุ่มทดลอง และกลุ่มควบคุม โดยกลุ่มทดลองที่ได้รับการสอนการอ่านแบบ Reciprocal Teaching และกลุ่มควบคุมได้รับการสอนการอ่านแบบ Skill-based Teaching การสอนการอ่านแบบ Reciprocal Teaching ประกอบด้วยยุทธวิธีในการอ่าน 4 ยุทธวิธีคือ การทำนาย การตั้งคำถาม การหาความชัดเจน และการสรุป เครื่องมือที่ใช้ในการวิจัยในครั้งนี้ประกอบด้วย การอ่านเพื่อความเข้าใจจากข้อสอบเข้ามหาวิทยาลัยวิชาภาษาอังกฤษปี พ.ศ.2547 แบบสอบถามเรื่องยุทธวิธีอภิปัญญา แบบบันทึกการใช้ยุทธวิธีอภิปัญญาระหว่างการอ่าน การอัดเทปบทสนทนาในขณะที่นักเรียนทำงานกลุ่ม และการสัมภาษณ์

เข้าใจ และการใช้ยุทธวิธีอภิปัญญา อย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05 คะแนนเฉลี่ยของการสอบหลังเรียนของกลุ่มทดลอง มีค่าสูงกว่าคะแนนเฉลี่ยของกลุ่มควบคุมอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05 การสอนแบบ Reciprocal Teaching ช่วยเพิ่มความสามารถในการอ่านเพื่อความเข้าใจ ของนักเรียนที่มีความสามารถในการอ่านสูง และนักเรียนที่มีความสามารถในการอ่านต่ำ นอกจากนั้น แล้ว Reciprocal Teaching มีผลต่อการใช้ยุทธวิธีอภิปัญญา นักเรียนใช้ยุทธวิธีอภิปัญญามากขึ้น หลังการเรียนการสอนการอ่านแบบ Reciprocal Teaching อย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05

คำสำคัญ: การสอนการอ่านแบบ Reciprocal Teaching ยุทธวิธีอภิปัญญา การอ่านเพื่อความเข้าใจ

INTRODUCTION

In Thailand, English is taught as a foreign language, and the purpose of learning English is for communication (Chandavimol, 1998). To communicate efficiently, learners need the four skills of listening, speaking, reading, and writing, but of all these four skills, reading is regarded as the most vital and necessary for students in both a classroom context and an extracurricular environment (Carrell, 1989; Grabe & Stoller, 2002). In classrooms of higher education, Thai college and graduate students need efficient reading skills to comprehend a mass of reading materials from various sources related to their studies (Piyanukool, 2001). More importantly, reading is highly important for high-school students since they have to be highly competitive in the English entrance examination (Chandavimol, 1998) and the National English Test. Therefore, the ability to read and comprehend texts efficiently is crucial for Thai students. In addition, because of the demanding expectations for academic success in all areas of learning, high-school students, as English foreign language (EFL) learners, need to develop strong English reading comprehension abilities to a more advanced level (Soonthornmanee, 2002).

However, these Thai high-school students do not have much opportunity to develop these abilities, since most of the time, English language teaching emphasizes on linguistic knowledge such as grammar points and vocabulary (Chandavimol, 1998). Results from previous studies have revealed that Thai students' English reading ability does not reach a very high level of proficiency. This may come from many causes including classes of a large size, limited reading strategies, and the methods of teaching reading comprehension in Thai classrooms (Chandavimol, 1998; Mejang, 2004).

RECIPROCAL TEACHING AND ITS THEORETICAL FRAMEWORK

The reciprocal teaching approach is a model originally developed by Annemarie Palincsar and Ann Brown during the mid-1980s. It is one of the reading instruction methods which cover the necessary reading strategies: predicting, generating questions, clarifying, and summarizing. It helps students improve their reading comprehension, and thus become better readers. The goal of reciprocal teaching is to use discussion to improve students' reading comprehension, develop self-regulatory and monitoring skills, and achieve overall improvement in motivation (Allen, 2003). Its theoretical framework is based on three sociocultural theories namely, the zone of proximal development, proleptic teaching, and expert scaffolding (Palincsar & Brown 1984).

The zone of proximal development refers to a learner's potential ability to learn with help from an expert or a more capable partner. It is Vygotsky (1978) who pointed out that all learners have two levels of thinking development: an actual development level and a potential development level. The actual development refers to the thinking level at which learners are able to solve problems by themselves, and the potential development refers to the thinking level at which learners need help from an expert or a more capable partner. The zone of proximal development (ZPD) is the distance between the actual development and the potential development. Learners can push themselves from the actual development level to the potential level or learn beyond their actual development level with explicit scaffolding through social interaction until they internalize the strategies (Rosenshine & Meister, 1994).

As mentioned above, most studies on the reciprocal teaching approach have been done in the L1 language classrooms, some studies carried out in the EFL university or college classrooms in Thailand. However, few studies on the reciprocal teaching approach have been conducted on EFL high-school learners in Thailand (Soonthornmanee, 2002). It appeared that the reciprocal teaching approach had positive results for all age groups in L1 classrooms and in EFL mostly in university or college classrooms. The researchers were interested in adapting

Palincsar and Brown's reciprocal teaching approach to Thai high school students to explore the effects of reciprocal teaching on students' reading proficiency. The objectives of the study are as following:

1. Do the 12th-grade students at Watnuannordit School improve their reading comprehension after reciprocal teaching?
2. Does reciprocal teaching enhance the English reading ability of proficient and less proficient students?
3. Is the increase in English reading ability of the students in the experimental group significantly higher than the increase in English reading ability of the students in the control group?
4. Do students in the experimental group increase their use of metacognitive reading strategies after reciprocal teaching?

RESEARCH METHODOLOGY

Participants

The participants of this study were purposively selected from students in a high-school in Bangkok, Thailand. They were 66 twelfth grade students from two intact classes enrolled in *Reading for Further Study* (ENG 40201) as an elective course in the second semester of the academic year 2007. They were Thai native speakers with mixed-gender and mixed-ability. From these two classes, one class was randomly selected as an experimental group, and the other as a control group. The experimental group consisted of 30 students and 36 students formed the control group; thus, 66 students participated in this study. Students in the experimental group were divided into groups of six. Each group consisted of three proficient readers and three less proficient readers according to the final scores of the English Reading Course of the first semester of the academic year 2007.

Procedure of Data Collection

This study was an experimental study with a mixed method design consisting both quantitative and qualitative data collection and analysis. For quantitative data, before the instruction, the reading section of the National English Entrance Examination used as the reading pretest was administered to the participants of both groups to examine their English reading proficiency level. The participants in the experimental group were asked to answer the pre-questionnaire to examine metacognitive reading strategies they employed when they read the text before receiving the reciprocal teaching. Then the experimental group was taught through the reciprocal teaching while the control group was taught through the skill-based teaching. After the instruction, the reading posttest was employed to investigate whether the students improve their reading comprehension and whether the reciprocal instruction enhances proficient and less proficient students' reading ability. In addition, the interview data were triangulated the data from the reading test. Finally, the post- questionnaire was employed to investigate whether the students improve their metacognitive strategies after the reciprocal instruction. The data obtained from the mentioned research instruments was analyzed both quantitatively and qualitatively regarding the research questions.

Instruments for Data Collection

The research instruments used to collect the data were the reading comprehension part of the National English Entrance Examination 2004, the metacognitive reading strategies questionnaire, and in-depth interview.

The Reading Part of National English Entrance Examination 2004

There are four parts of the National English Entrance Examination: situational dialogues (25 items), cloze-letter (10 items), cloze-passage (25 items), and reading comprehension (40 items). The test time is 120 minutes for 100 items. The purpose of the whole test is to assess high-school students' English ability that is the requirement for the students who

apply to study for higher education in Thai state-run universities. In this study, only English reading comprehension part of the National English Entrance Examination 2004 (40 items/50 minutes) was used as both the pretest and posttest to investigate the participants' reading ability.

Metacognitive Reading Strategies Questionnaire (MRSQ)

The purpose of the Metacognitive Reading Strategies Questionnaire was to investigate the metacognitive reading strategies students employed. The MRSQ was developed from Anderson's (2003) and Phakiti's (2003) questionnaires. To develop the MRSQ, the researcher selected only the strategies that were related to the four main strategies of the reciprocal teaching approach. Following the three main metacognitive processes of planning, monitoring, and evaluating, the 20 sub-metacognitive strategies on the questionnaire were categorized into 10 metacognitive strategies: Predicting, Activating background knowledge, Verifying prediction, Self-management, Setting goal, Taking notes, Making an inference, Selective attention, Summarizing, Self evaluation (Wenden, 1991; and Chamot, Barnhard, El-Dinary, & Robbins, 1999)

In-depth Interview

The interview was applied at the end of the course after the instruction of the experimental group. All participants in the experimental group were asked how they used the four strategies of reciprocal teaching (metacognitive reading strategies) when reading the texts, their views on the four main reading strategies, their procedure to complete the tasks and group working. The interview was conducted in Thai so that the participants would not have difficulties understanding and answering the questions.

RESULTS

The findings were based on the mean scores of the pretest and posttest taken by both the experimental group and the control group. Mean scores and standard deviations of students in reciprocal teaching group on the pretest and posttest are shown in Table 1. Table 2 shows mean scores and standard deviation of proficient students and less proficient students in reciprocal teaching group for reading comprehension ability. Table 3 shows mean scores and standard deviations of reciprocal and skill-based groups for reading comprehension on the posttest. Table 4 shows mean scores, standard deviation, and level of use of metacognitive strategies employed before and after the instruction of reciprocal teaching.

Quantitative Results

English Reading Comprehension Results

In order to investigate whether students in the reciprocal teaching group improved their reading ability, the mean score of the pretest and posttest from English reading comprehension part of the National English Entrance Examination of the experimental group were calculated to determine whether there was a significant difference by using dependent t-test. The results are presented below.

Table 1 Reading Comprehension Mean Scores and Standard Deviations of Students in Reciprocal Teaching Group

Teaching method	Pretest Mean (SD)	Posttest Mean (SD)	t
Reciprocal teaching (N =30)	14.73 (5.55)	17.70 (5.56)	5.783*

***p < .05**

As shown in Table 1 the posttest mean scores of students in the reciprocal teaching group were significantly higher than the pretest mean scores at the 0.05 level. This indicates the participants in reciprocal teaching group developed their English reading ability. It implies that reciprocal teaching is an effective reading strategy instruction and can be employed to enhance students' reading comprehension.

Table 2 Reading Comprehension Mean Scores and Standard Deviations of Proficient and Less Proficient Students in Reciprocal Teaching Group

Students' Ability	Pretest	Posttest	t
Less Proficient Students (N=15)	9.50	13.10	3.959*
Proficient Students (N=15)	21.00	23.80	3.698*

***p < .05**

As shown in Table 2, proficient and less proficient students in the experimental group gained significantly higher scores in the posttest mean scores than the pretest's. The mean scores in the posttest were significantly different from the mean scores in the pretest at the 0.05 level. This indicates that the reciprocal teaching enhanced the English reading ability of both proficient and less proficient students.

In order to investigate whether the increase in English reading ability of the students in the experimental group is significantly higher than the increase in English reading ability of the students in the control group, the mean score of the pretest and posttest from English reading comprehension part of the National English Entrance Examination of the experimental group and the control group were calculated by using independent t-test. The results are presented below.

Table 3 Mean Scores, Standard Deviations of Students in Reciprocal and Skill-Based Teaching Groups for Reading Comprehension

Teaching Method	Posttest	SD	t
Reciprocal Teaching	17.73	5.620	4.537*
Skill-based Teaching	14.86	4.067	

*p < .05

As shown in Table 3, there was a significant difference between the mean scores of the posttest of the experimental group and the control group at the 0.05 level. The students in the reciprocal teaching group achieved higher mean scores than those in skill-based teaching group. It can be concluded that the reciprocal teaching assisted the students in enhancing their English reading ability than the skill-based teaching did.

Questionnaire Results

In order to investigate how students in the reciprocal teaching group employed their metacognitive reading strategies, the mean scores of the metacognitive strategies used from the pre-questionnaire and post-questionnaire of the experimental group were calculated to determine whether there was a significant difference by using dependent t-test. The results are presented below.

Table 4 Mean, Standard Deviation, and Level of Use of Metacognitive Strategies Employed Before and After the Instruction of Reciprocal Teaching

Main Metacognitive Strategies	Participants in the Experimental Group (N = 30)						t	P
	Before training			After training				
	Mean	SD	Level	Mean	SD	Level		
Predicting	3.37	.70	M	4.02	.57	H	-7.197	.000*
Activating Background	3.37	.97	M	4.20	.75	H	-4.209	.000*
Verifying Prediction	3.37	1.0	M	4.07	.78	H	-4.826	.000*
Self-management	3.00	.91	M	3.57	.73	H	-3.616	.001*
Setting Goals	3.40	.79	M	3.97	.70	H	-7.223	.000*
Taking Notes	3.10	1.1	M	3.97	.69	H	-4.878	.000*
Making an Inference	3.70	1.0	H	4.00	.74	H	-3.525	.048*
Selective Attention	3.40	.56	M	3.80	.50	H	-5.425	.000*
Summarizing	3.30	.69	M	3.90	.57	H	-6.238	.000*
Self Evaluation	3.90	.76	H	4.40	.67	H	-5.298	.000*

Table 4.5 shows the mean scores, standard deviations, and level of the use of metacognitive strategies students used before and after they were taught through reciprocal teaching. Before the training, they employed the high level of the use of metacognitive only in *Making an Inference and Self Evaluation* (the mean scores were 3.7 and 3.9). The rest were in the medium level of use of metacognitive strategies: *Self-management, Taking Notes, Predicting, Activating Background, Verifying Prediction, Summarizing, Setting Goals, and Selective Attention* (the mean scores were between 3.0-3.4). After the training, the most metacognitive strategy students used was *Self Evaluation*. All strategies used, before and after the training, were significantly different at the 0.5 level. ($p < 0.05$).

In-depth Interview Results

The finding from the in-depth interview supported the quantitative results. Before reading, the students in the reciprocal group planned to find the main idea of each paragraph, starting from predicting and then questioning, clarifying, and ending with summarizing. Some students viewed that if the reading text was followed by questions, they would read the questions first in order to view the scope of the text. Besides the questions, they predicted the text from the title. The following are some examples of their views:

- I set the goal of reading such as finding the main idea, clarifying and draw a conclusion.
- I check the reading passage. If there are questions or exercises, I will read them first and then plan to read the passage to find out the answers.
- I plan to find the main idea of the paragraph, first predict the text from the title and then check the prediction by reading for the main idea and then for important details.
- I predict and analyze the title by using background knowledge.

Regarding the while-reading stage, the students indicated that they planned what to do while reading. All of them knew that finding the main idea was the main purpose of their reading each paragraph. Moreover, they knew that to find the main idea, they had to ask questions about the content of the paragraph. They asked the questions related to the main point. When they had problems with key words or references, they clarified them. Moreover, they knew how to clarify the unknown words by using context clues and word formation. They evaluated their understanding. If they did not understand the text, they reread it. All this means that they planned, controlled and evaluated themselves while they were reading a text. The following quotes are a few examples of some of the participants' views while they were reading the passages:

- *While reading, I planned to find out the main idea of the paragraph by using predicting, questioning, clarifying, and summarizing.*
- *While reading, I read the whole passage to find out the main idea.*
- *I reread the passage if I didn't understand it.*
- *Questioning helps me to understand each paragraph and to find the main idea.*
- *Clarifying helps me a lot in reading. If I didn't know the words, I used context clues and my own knowledge.*
- *Summarizing helps me comprehend the text better. I summarized by connecting each main idea.*

Regarding the after-reading stage, all students agreed that summarizing was important for reading because by doing so, they could see the whole picture of a reading passage. Moreover, they evaluated their understanding. Additionally, when they did the exercises and could not answer the questions, they went back to the part of the passage that related to the questions to find out the answers.

From the interview question on students' view of reciprocal teaching, it shows that the students had positive views on reciprocal teaching and on working in groups. They learnt to act as leaders from the teacher's explicit teaching and from their friends who previously acted as leaders. They enjoyed working with their friends and helping each other. They could reflect and share their ideas with others. They experienced to be both a leader and a member of the group. Moreover, they felt relaxed to work with their friends. They improved their use of the four key strategies from working in cooperative groups. The following are examples of some participants' views.

- *We could help each other when in groups. It was enjoyable and I felt relaxed. We worked together to complete our task. Working in groups also helped my weak friends to comprehend the text.*
- *Working in a group helped me to be a leader and to know what I should do while being a leader. I was eager to act like a teacher and prepared myself to help my friends understand the passage. After being a leader, I made a conclusion or asked my friends to make it in order to evaluate their understanding.*

In conclusion, the results from the in-depth interviews show that the students, both the proficient and less proficient students, in the reciprocal group had similar metacognitive awareness. They planned before reading a text and the next paragraph. They monitored themselves while reading in their group to comprehend the text and they evaluated their results according to their planning. They enjoyed working in cooperative groups and having a chance to be a leader. They shared and learned from their friends. Finally, they had positive views on reciprocal teaching and commented that they had never had a chance to study reading through a reading strategy instruction like reciprocal teaching. In the end, they suggested that it is necessary for the next groups of students who will attend the reading course to learn through reciprocal teaching, as they did, because it was worth it for them to know what strategies to use,

and when and how to use them to comprehend the reading text. As mentioned in the interviews, the students in the reciprocal teaching group developed their reading skill by using the four main reading strategies consciously when their reading comprehension broke down.

DISCUSSION AND CONCLUSION

This study used both quantitative and qualitative data collection. The data from the interviews were triangulated with the mean scores of the pretest and posttest. The results derived from the different data corroborated each other.

This study investigated if metacognitive training as employed in the reciprocal teaching helped EFL students to better comprehend the texts. It was found that EFL students in the reciprocal teaching group had greater gain on the posttest than the pretest. Both proficient and less proficient students in the reciprocal teaching group enhanced their reading ability. They obtained significantly higher reading mean scores across the posttest than mean scores of the pretest. The EFL students in reciprocal teaching group had greater gains on the posttest mean scores than those receiving the skill-based teaching. Moreover, the participants in the experimental group employed more metacognitive strategies after the instruction of reciprocal teaching after they studied through reciprocal teaching.

Findings from the quantitative data suggested that the students in the reciprocal teaching group developed their metacognitive awareness (planning, monitoring, and evaluating) when they read a reading passage. After the teacher modeled the procedure of the reciprocal approach, they organized their own thoughts in their cooperative group. Everyone in the group had a chance to be a leader and reflected directly on their own and others' performances. The stages of the reciprocal approach guided them towards achieving an understanding of the meaning of the reading passage in order to improve their reading ability.

According to the findings, it can be concluded that reciprocal teaching was one of the effective reading strategy instruction. These results support Palincsar and Brown's (1984) assertion that reciprocal teaching can be an effective approach to improve metacognitive

awareness and reading comprehension skills. The concept of reciprocal teaching differs from the skill-based teaching. In reciprocal teaching procedures, teachers model or provide direct explanation of what, how, when, and why, not only mention what the strategies are. After students have enough practice, teachers gradually and slowly release teachers' role and responsibility to students. The students complete the task in their own cooperative group. Finally they are able to do the task on their own. This method helps EFL students understand the texts and learn consciously. They learn to plan, monitor or control themselves while reading and evaluate their planning and understanding. Finally, students create new knowledge from what they internalize with their old knowledge to reach their potential development level.

RECOMMENDATIONS

This study proposes one reading strategy instruction for improving EFL students in reading skill. In order to improve students' reading comprehension through reciprocal teaching, students need time to implement four main strategies and to get used to the reciprocal procedure. They need enough practice to help them work by their own and know what, when, how, and why to use each strategy. Furthermore, teachers should provide students some feedback, guidance, and help while they are doing the task. After the task, teachers may raise the points of problems while they were working and give them suggestion for the next task. Therefore, teachers should be active and attentive listeners while students are doing their tasks. For EFL teachers, this study may serve as a starting point to adapt the procedure of reciprocal teaching to help their students build metacognitive awareness, improve their students' reading comprehension, and finally to become independent readers.

This study investigated on the effects of reciprocal teaching on English reading comprehension and usage of metacognitive strategies of students in a Thai high-school classroom. Also, through the analysis of its results, reciprocal teaching was shown to have advantages over skill-based teaching and to improve students' reading comprehension and metacognitive strategies. Thus, it would be interesting to perform further studies on reciprocal

teaching in relation to other aspects of its method. Reciprocal teaching should be compared to other teaching methods so as to consider which one provides more advantages for the improvement of the English reading comprehension of Thai students. Other studies should be conducted with participants from different levels such as students from primary or junior high-school, gifted students, students at risk of academic failure, disabled students, and drop-outs. It would be interesting to see whether reciprocal teaching would still be beneficial to these other groups. It would be worth exploring if reciprocal teaching could be successfully applied to other language skills including listening and speaking for example. According to the reciprocal teaching processes, when working in groups, the students' roles involve mainly speaking and listening. As a result, it might be beneficial to evaluate whether reciprocal teaching affects students' listening comprehension and speaking ability. As we know, the teachers themselves are one of the main factors in the outcome of teaching. Further studies could focus on teacher training on reciprocal teaching. The teachers could be observed and interviewed for their roles in the classroom, and to monitor the correlation between their role and their learners' improvement.

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