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## **Effects of Reciprocal Teaching Strategies on Reading Comprehension**

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### **ABSTRACT**

*Reading Comprehension is one of the four components tested by the MUET (Malaysian University English Test) for Sixth-Form students in Malaysia, and school teachers are charged with the task of helping these students improve. This article discusses how 'reciprocal teaching strategies' could help low-proficiency Sixth-Form students improve their reading comprehension. A study using a quasi-experimental design was conducted among 68 low-proficiency students from four Sixth-Form, intact classes. An intervention of nine reading lessons using reciprocal teaching strategies was administered over a period of one month. Tools for data collection were a pretest, a posttest and five open-ended questions given after the treatment. The findings from the independent t-test and paired-sample t-tests showed a significant difference, revealing the effectiveness of the strategies, and the respondents from the Experimental Group gave positive feedback regarding the use and effects of these strategies. The article concludes with implications for pedagogy and research.*

### **INTRODUCTION**

In Malaysia, English is taught to prepare pre-university (Sixth-Form) students to meet various academic challenges through the development of critical thinking and the competent use of language skills. Furthermore, students are taught to understand texts beyond the literal level, to understand the interconnectivity of content from a variety of genres, and to respond critically (MUET Syllabus, 2006). These skills are then assessed by the Malaysian University English Test (commonly known as the MUET). Lee (2004) notes that the reading component of the MUET examination has a heavier weight (45%) because it is perceived that students at the university level will be expected to read more than they write. Based on our observations, our teaching experience and students' past results on the MUET, some students at this crucial pre-university stage have been found to lack both motivation to learn English and adequate reading-comprehension skills.

Whenever teachers are faced with the problem of students who have good decoding skills but inadequate comprehension skills, they need to be able to train those students to use

metacognitive strategies; otherwise, these students will continue to read texts emphasizing only words and not meaning (Dermody & Speaker, 1999). One widely used set of metacognitive strategies are the *reciprocal teaching strategies*, a set of four cognitive strategies, used to improve students' reading comprehension. From the cognitive-constructivism perspective, we believe that struggling readers can improve their performance through the use of interactive (through dialogue) strategies and the reconstruction of ideas. The study reported here examined the effectiveness of these strategies on a group of students who had difficulty comprehending expository texts.

## BACKGROUND OF THE STUDY

Sixth-Form students are taught eight periods of English per week in order to equip them with enough proficiency in English to perform effectively in their academic pursuits. They have to sit for the MUET, which is a competency test administered by the Malaysian Examination Council, to measure their level of English proficiency. The MUET is made up of four components: listening, speaking, reading comprehension, and writing. The test measures students' proficiency based on an aggregate score ranging from 0-300. The aggregate scores are then banded into six levels of achievement. It is a requirement for admission to local universities that applicants obtain the minimum band set by the faculty of each university (MUET, 1999, p. 11). Reading comprehension is one of the four language skills addressed in the MUET with the objective that students not only read a variety of texts independently, but also to read with understanding in order to extract and process the information efficiently. Most texts on the reading comprehension portion of the MUET are linear expository texts that have been written to inform, describe, explain, or persuade. This genre, and the level of difficulty of the texts, may pose problems for students with low levels of proficiency in English.

With an increasing number of students achieving only bands two and three ranging from 100-139 and 140-179 points respectively, and approximately 67% of the total 256 candidates achieving very low scores in reading comprehension last year, there is a need to investigate how to help these struggling readers enhance their reading comprehension. We propose here to use reciprocal teaching strategies to address this challenge. To date, not many studies have been conducted on the effectiveness of these strategies in the ESL context in Malaysia.

## THEORETICAL PERSPECTIVES

Reciprocal teaching is an instructional activity that utilizes four comprehension strategies (predicting, questioning, summarizing, and clarifying) in the form of a dialogue between teachers and students regarding segments of a text. Pressley (1998) asserts that reciprocal teaching encourages students to take a more active role in leading a group dialogue, and helps to bring more meaning to the text at a personal and cognitive level. It is based on the assumption that knowledge and meaning are the result of creative socializations arranged through negotiation and discourse among teachers and students, or students and students. Three theoretical perspectives underpin reciprocal teaching: interactive, cognitive-constructivist, and the social constructivism perspectives. Knowledge and meaning can only be derived when the reader either interacts with the text alone or constructs its meaning with others. When students interact with the texts, they use their prior knowledge, acquire information from the context, and combine disparate elements into a new whole before they arrive at their own idea of the meaning (McNeil, 1992). In the process of interacting with

others, the learning takes place in a sociocultural environment (students to student or student to teacher) through dialogue (Anderson & Pearson, 1984; Wilson, 1999). This is in line with Vygotsky's (1978) sociocultural theory, in which learning takes place in an interactive environment. Reciprocal teaching is based on active socialization, wherein the knowledge constructed from the text is negotiated within discourse communities through both teacher-student and student-student interactions (Gergen, 1999a, 1999b). In facilitating learning using reciprocal teaching activities, students are taught cognitive strategies (Rosenshine & Meister, 1994) through appropriate support and feedback (Oczkus, 2003). Students learn these strategies through discussion, support, and feedback to enhance reading comprehension, develop self-regulatory and monitoring skills, and achieve an overall improvement in motivation (Palincsar, David, & Brown, 1989).

Research by Pearson and Fielding (1991) has shown that instruction in comprehension strategies is especially effective for students who exhibit poor comprehension. Findings from a study done by Westera and Moore (1995), who used three groups of students (those who received reciprocal teaching for a short period of time, those who received reciprocal teaching for an extended period of time, and the control group, which did not receive reciprocal teaching), indicated that students who received 12 to 16 reciprocal teaching sessions gained, on average, more than one age-equivalent year in tested reading comprehension over a five-week period. In this study, 95% of the extended reciprocal teaching students showed gains in comprehension, compared to 47% of students in the short reciprocal teaching group and 45% of the students in the control group. In higher education, Rosenshine and Meister (1994) conducted a meta-analysis of 16 quantitative studies focusing on reciprocal teaching that revealed that reciprocal teaching is most effective for older students as well as those with poor comprehension skills.

In examining the effectiveness of the four reciprocal teaching strategies (on a group of students with low-level skills in comprehending expository texts), this study has two research questions:

1. Can reciprocal teaching strategies help low-proficiency students in the Sixth Form improve their reading comprehension of expository texts?
2. How do these low-proficiency level students in the Sixth Form respond to the use of reciprocal teaching strategies in their reading comprehension of expository texts?

The first research question has two sets of null hypotheses: (1)  $H_{01}$ —there is no significant difference in the reading comprehension performance of the participants in the Control Group and the participants in the Experimental Group, and (2)  $H_{02}$ —there is no significant difference between the pretest and posttest reading comprehension scores in the Experimental Group.

## METHOD

A quasi-experimental design was employed using four intact classes of Sixth-Form, low-proficiency level students. Two classes were randomly assigned to the Experimental Group, while the other two were randomly assigned to the Control Group. In a quasi-experimental, nonrandomized control-group type design, every effort should be made to use groups that are as equivalent as possible; our nonrandomized Control Group was as equivalent as possible in terms of performance in their reading comprehension.

Students learned to make predictions and hypothesize about what the author will discuss next in the text, which generated questions (giving them the opportunity to evaluate

the components of a good question, phrase their own questions, and finally engage in questions for self-testing). With the summarizing strategy, students integrated the information from one passage to another. Lastly, the clarifying strategy helped them to reflect on what they read, and identified any difficulties that interfered with comprehension. Through modeling (or scaffolding), these struggling readers received support from the teacher and, in turn, got to be the teacher, until they could apply these strategies for themselves (Garner, 1992).

## Participants

In this study, *purposive sampling* was used: 68 low-proficiency level students from the Sixth Form were selected as a sample to represent the population to be studied. A qualitative aspect was also included, wherein all respondents from the Experimental Group took part in a final reflective session. The subjects were from four intact classes; two classes were assigned as the Experimental Group and the other two classes as the Control Group. Each intact class constituted 17 students with low English language scores on their MUETs, and were known as Class A, Class B, Class C, and Class D. The researcher and the English language teacher in the Control Group were also participants in this study. The researcher taught the Experimental Group, while the English language teacher taught the Control Group.

## Instruments

Four instruments were used in this study: a pretest, a posttest, nine reading lessons (using reciprocal teaching strategies), and five open-ended questions for reflection. The pretest and posttest both were 20 multiple-choice questions on the comprehension of expository texts. To ensure validity and reliability, the texts and questions were selected from past MUET examinations. The pretest was administered to the Control and Experimental Groups at the beginning of the study to verify the equality of the two groups in their reading comprehension performance. The nine reading lessons formed the treatment of the study.

The Control Group studied the same nine expository texts without any treatment. The 34 students of the Experimental Group were trained to use the four strategies of the reciprocal teaching method during the first reading lesson. This training session aimed to enable the students to carry out the procedures and activities (both individually and in groups) during the next eight reading lessons using expository texts from the curriculum materials. In this group, the researcher used a variety of materials: the *Be the Teacher Bookmark* from Oczkus (2005), *Train your Brain Bookmark* from the Miami-Dade Teacher Education Centre [<http://www.miamisci.org/tec/model.html>]; the Florida Online Reading Professional Development (FORPD) reciprocal teaching worksheet [[http://www.readingrockets.org/content/pdfs/reciprocalteaching\\_worksheet.pdf](http://www.readingrockets.org/content/pdfs/reciprocalteaching_worksheet.pdf)]; reciprocal teaching worksheets adapted from Lysynchuk, Pressley, and Vye (1990) [<http://home.southernct.edu/~deanc1/Upload490/RecipTeachSheet.doc>], and reading passages from the local Form 6 MUET textbook and The Virtual Language Centre reading comprehension with questions [<http://vlc.polyu.edu.hk/vlc/comp/readcomp.htm>]. Using the guidelines and procedures from a model lesson extracted from the Miami-Dade Teacher Education Center, the researcher demonstrated the four comprehension strategies, and students practiced them through dialogue amongst themselves. Immediately after the intervention, the Experimental Group attended a reflection session to answer a set of five open-ended questions. These questions sought to ascertain the students' views about reciprocal teaching strategies, their likes and dislikes, the benefits and impact of using reciprocal teaching strategies and, finally, their overall impression of these strategies.

## DATA ANALYSIS

Prior to the intervention, all the pretest scores were analyzed using the Statistical Package for the Social Sciences (SPSS, Version 15) software program. To ensure that both the Control and Experimental Group were as equivalent as possible before the study was carried out, an independent-sample *t*-test (Levene's Test) was used to determine whether the Control Group and the Experimental Group were homogeneous. Then, an independent-sample *t*-test was employed to determine if there was any significant difference in the means between the Control Group and the Experimental Group in the pretest scores, while the paired-sample *t*-test was used to measure if there was any significant difference in the means of the Experimental Group between the pretest scores and posttest scores. Regarding the qualitative data, all responses to the five open-ended questions were summarized and analyzed.

## FINDINGS AND DISCUSSION

### Quantitative Analysis on Pretest and Posttest Results

The pretest scores of the two groups were compared using the independent *t*-test. From the data below (Table 1), the Levene's Test for equality of variances shows  $F = .173$  and  $p = .679$ , proving that the variance of the groups was equivalent. Moreover, the result also shows  $t = -.670$ ,  $df = 66$ , and  $p = .505$ , showing that the two groups did not differ significantly, but were homogenous.

**Table 1.** Results of the Levene's Test for Equality of Variances

	F	Sig	<i>t</i>	df	Sig (2-tailed)	95% CI	
						lower	upper
Equal variance assumed	.173	.679	-.670	66	.505	-4.097	2.038
Equal variance not assumed			-.670	65.946	.505	-4.097	2.038

Significant at a confidence level of  $p < 0.025$  (2-tailed)

Therefore, it can be assumed that the samples of both groups were equal in their reading proficiency levels at the time of the experiment. To answer the first research question, the means of the pretest and posttest scores were compared. The paired-sample *t*-test and independent *t*-test were employed to provide statistical verification.

**Table 2.** Posttest Scores between the Experimental and Control Groups

	Group	N	Mean	SD	SE	<i>t</i>	df	Sig. (2 tailed)
Posttest	Control	34	47.79	7.507	1.287	-9.919	66	0.000
	Experimental	34	65.15	6.907	1.185			

Significant at a confidence level of  $p < 0.025$  (2-tailed)

These independent *t*-test results show that the mean for the posttest scores for the Control Group was 47.79, and the mean for the Experimental Group was 65.15, with the great difference of 17.36 (Table 2). The result in Table 3 ( $t = -9.919$ ,  $df = 66$ , and  $p = .000$ ) shows that there was a significant difference in the mean for the posttest scores between the Control Group and the Experimental Group.

**Table 3.** Independent Sample Test Results on Posttest Scores

Posttest	Levene's Test for Equality of Variances		<i>t</i> -test for Equality of Means				
	F	Sig.	<i>t</i>	df	Sig.	95% CI Lower Upper	
Equal variance assumed	.727	.397	-9.919	66	.000	-20.846	-13.860
Equal variance not assumed			-9.919	65.548	.000	-20.846	-13.860

Significant at a confidence level of  $p < 0.025$  (2-tailed)

Therefore,  $H_01$  (no significant difference in the reading comprehension performance between the participants in the Control Group and the participants in the Experimental Group) was rejected. It can be deduced that with the help of reciprocal teaching strategies, the Experimental Group scored better than the Control Group.

As gathered from the results, the students were probably experiencing a kind of cognitive apprenticeship (Alverman & Phelps, 1998) where they were gradually learning to assume the role of teacher in helping their peers construct meaning from the text. As a 'teacher' led a group of students, they talked their way through the expository text to understand it. Working together enabled members to monitor their understanding by stopping at regular intervals to ask questions, summarize, predict, and clarify. These students with poor decoding skills were allowed to read aloud and listen to the dialogue between the teachers and their peers (Hacker & Tenent, 2002). Cognitively, the students' relevant background knowledge was activated through the posing and answering of questions (Palincsar & Brown, 1986).

**Table 4.** Paired Samples Statistics between the Pretest-Posttest of the Experimental Group

		Mean	N	SD	SE	<i>t</i>	df	Sig. (2-tailed)
Experimental Group	Pretest	53.38	34	6.243	1.071			
	Posttest	65.15	34	6.907	1.185	-9.870	33	0.000

Significant at a confidence level of  $p < 0.025$  (2-tailed)

**Table 5.** Results of the Paired Samples *t*-test between Pretest-Posttest Scores of the Experimental Group

	Mean	SD	SE	95% CI Lower Upper		<i>t</i>	df	Sig.
Pair Pretest-Posttest	-11.765	6.950	1.192	-14.190	-9.340	-9.870	33	0.000

Significant at a confidence level of  $p < 0.025$  (2-tailed)

The paired-sample *t*-test analysis in Table 4 shows that the mean score on the posttest ( $M = 65.15$ ) is significantly greater than the mean score on the pretest ( $M = 53.38$ ). The observed mean difference is  $-11.765$ , implying that the performance of the Experimental Group had improved significantly. Therefore,  $H_02$  (no significant difference between pretest and posttest in the reading comprehension scores in the Experimental Group) was also rejected. As can be seen from the paired sample *t*-test results and the comparison of means between the pretest and posttest scores for the Experimental Group in Table 5, the mean difference was approximately  $11.765$ , which indicates significant improvement. Based on the findings, the researcher accepts the alternative hypothesis that there was a significant difference between the pretest and posttest reading comprehension scores for the Experimental Group. This indicates that reciprocal teaching strategies had indeed helped to significantly elevate the students' performance in their reading comprehension of expository texts.

### **Qualitative Analysis on Students' After-Treatment Responses**

This section displays the qualitative findings regarding the students' written responses to five open-ended questions at the end of the treatment to answer Research Question 2 (i.e., how these low proficiency level students from the Sixth Form respond to the use of reciprocal teaching strategies in their reading comprehension of expository texts). The following segments deal with the analysis and interpretation of students' responses to each question.

*Q1: What do you think of reciprocal teaching strategies?*

Students' views were grouped into the five categories below:

1. Good and Effective
2. Nice and Interesting
3. Useful and Able to Help
4. Uninteresting
5. Complicated

The majority of the students responded positively (Responses 1-3) toward the strategies. Only five out of 34 students regarded the strategies as uninteresting and complicated. These negative comments were probably repeated in their responses to the other questions as revealed below.

*Q2: What do you like about reciprocal teaching strategies?*

While only two students wrote "none" for this question, the rest of the students gave a variety of positive comments. These include: "I like these strategies because I can work and discuss in groups," "I can work as a team and help each other to understand the passages," "I can work together in groups and discuss the ideas in the passages," "I like working in groups and answering the questions asked," and "I can work and discuss in groups with my friend."

Clearly the common feature is teamwork. Working in teams, students were able to support each other in clarifying the meaning of difficult vocabulary words and different segments of the text.

*Q3: What don't you like about reciprocal teaching strategies?*

One third of them responded with "none," "nothing that I don't like about these strategies," or "nothing that I dislike." However, many complained that they had to repeat the

same techniques and strategies many times in order to understand the passages; such comments point to the need for the teacher to vary the techniques (within the strategies) to reduce boredom.

A handful of students felt that it was time-consuming to follow the procedures from one strategy to another, proceeding from predicting to questioning, clarifying and summarizing before they could answer the comprehension questions. This reaction is understandable in the Malaysian context, in which students have been trained from a young age to answer accurately in the shortest amount of time. This process, in guiding them to fully understand the text, seemed to slow them down.

In addition, they did not express equal preferences for all four strategies. Some indicated specific negative inclinations such as “I don’t like predicting strategy,” “I don’t like to be the teacher,” and “I don’t like to find main ideas and write them down.”

*Q4: How have you benefited from reciprocal teaching strategies?*

Except for two students who were unsure and two others who stated that they had gained little, the students claimed that they had benefited from certain aspects of the strategies. Eighty-two percent claimed that they had improved in either their language skills or their reading comprehension skills. Some of the responses were: “I can understand the passage clearly,” “I’m able to identify main ideas from the passages and understand them,” “I learned to read and understand better and able to interact with others. It has helped me to understand more about the articles or passages I’ve read,” “It has improved my skill to read and understand the passage and I could answer the questions well,” “It has improved my reading skill,” “I learn a lot and able to summarize the passage better,” and “I’m able to talk bravely and I learn more words and understand the passages better.”

*Q5: What is your overall impression of reciprocal teaching strategies?*

There were mixed responses to this question, with some similarities to the responses to Q1. One student found the strategies “boring.” Two others claimed that it was “a waste of time,” and another two felt that the strategies were too involved. The rest of the comments were positive. Here are some samples: “I feel these strategies are good and can be used to improve students’ comprehension skills,” “I think these strategies are good,” “These strategies are good and interesting,” “They are quite effective and can be used to benefit all students to read with understanding,” “These strategies help students to understand passages well,” and “I think these strategies are good strategies and useful.”

Overall, it can be noted that the students generally responded positively to the use of reciprocal teaching strategies and acknowledged these strategies as good, effective, and useful for their reading comprehension. Along with this, their language skills had also improved. From the social constructivist perspective, students benefited from interacting with each other, co-constructing meanings from the text.

## CONCLUSION

This small study has yielded both quantitative and qualitative data in support of the use of reciprocal teaching strategies in the reading class, encouraging teacher reflection on their practices. The findings have pedagogical implications for the ESOL classroom in Malaysia, as the results show a significant impact on the reading comprehension of the students. ESOL teachers should be encouraged to model reciprocal teaching strategies (King & Johnson, 1999) in the reading class, providing an effective, alternative to learning how to



construct meanings from the texts and how to work collaboratively in the context of group discussion. In the process, students' self-regulatory and monitoring skills can develop, producing an autonomous reader.

This study, which only explored the reading skills of a group of Sixth-Form students from an urban school, has implications for research as well in that it would be worthwhile to expand this study to include students from different levels of schooling, across rural and urban areas. Other than expository texts, texts from other genres can also be explored. For instance, short stories might be studied as part of the literature component in the Malaysian English syllabus for the lower-secondary level, as well as English Literature for the Sixth-Form and higher; this might help to further determine the effectiveness of reciprocal teaching strategies in promoting and sustaining interest in literature study. Repeating the study over a longer period and incorporating different techniques, such as graphic organizers, tape-assisted teaching, computer-assisted learning or story-sharing, is recommended.

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