

The Effect of the Reciprocal Teaching Method on Enhancing Critical Reading to Skills of Jordanian Secondary School Student

Khalil S. Al-Qatawneh *

ABSTRACT

The purpose of this study was to examine the effect of using the Reciprocal Teaching model on enhancing reading comprehension skills in English by the Jordanian secondary school students. The participants of the study consisted of 88 male first secondary grade students during the year 2005/2006. The school was purposefully selected on convenient grounds. The two first secondary grade students' sections in the school were assigned to the levels of treatment by draw. The experimental group was taught by the reciprocal teaching method and the control group was taught by the conventional method of teaching. The study involved a reading comprehension test. The computed reliability for internal consistency for the comprehension test was 0.82. Analysis of Covariance (ANCOVA) and MANCOVA were used to detect the significance of differences between the mean scores of both groups at $\alpha = 0.05$ level.

The results of the study showed that there was a statistically significant difference at $\alpha = 0.05$ between the mean scores of the two groups on the entire reading comprehension test, and on each domain of the test in favor of the experimental group. The study concluded that more research be recommended to provide additional knowledge with regard to the replication of the experiment at other different levels of learners in school. It also recommended that extensive courses and workshops for teachers on the new reciprocal teaching method to be encouraged if the method requirements to be met in the educational sector of Jordan.

Keywords: Reciprocal Teaching Model, School Students, English Language.

1. INTRODUCTION

Reading involves more than the ability to decode words or sound out words. The purpose of reading is to make meaning from the words that are presented. For example, being able to sound out the words in a manual way that tells how to install a new system on your computer will not help you know what to do unless you can interpret the words and figure out how they work together in that context. That is to say that words must work together to create a coherent picture in one's mind (McGriff, 1996). Research has shown that meaningful learning occurs when learners actively construct knowledge representation of information in working memory (Novac, 1990). The conditions of meaningful learning require an instructional model that must elicit cognitive processes of comprehension (McGriff, 1996).

One line of research on cognition has focused on the reciprocal method to use in order to construct meaning. According to Alverman and Phelps (1998) the reciprocal teaching model, which was developed in the mid 1980s, involves a high degree of social interaction and collaboration.

According to Palincsar (1986), the basic tenet of reciprocal teaching is that students check their own understanding of the material they have encountered. They do this by conducting several strategies to have positive effect on reading comprehension. These strategies include summarizing, question generation, clarifying and predicting (Carrol and Martien 1988). Palincsar (1986) comments reciprocal teaching in essence is an authentic activity because learning, both inside and outside school, advances through collaborative social interaction and construction of knowledge.

Although studies of Carrel et. al, (1989) and Al-Fassi (1989) have claimed positive effects of reciprocal teaching in first language settings. However, there have been relatively few studies to investigate the effect of

* Department of Curriculum and Instruction, Tafila Technical University, Jordan. Received on 14/1/2006 and Accepted for Publication on 11/9/2006.

reciprocal teaching on student's reading comprehension in ongoing English as a foreign language EFL school reading situation.

The present study attempts to examine the effect of the reciprocal teaching method on enhancing reading comprehension skills by Jordanian secondary school students.

There are many problems related to teaching English as a foreign language in Jordan (Al-Makhzoumi, 1986). Additionally, the researcher noticed that students have considerable problems in comprehending written text in English. Reading comprehension is a problematic area for learners of English in Jordanian schools (Al-Makhzoumi, 1986). Therefore, it is worth attempting to use new methods for teaching reading comprehension in English, which might improve reading comprehension in particular and enhance learning English in general.

2. STATEMENT OF THE PROBLEM

Research on learner's comprehension abilities suggests that, although they have the mental abilities and memory capacities to process information presented explicitly and implicitly in a reading text, some do not do so spontaneously (Fredricksen, 1957). That they may not be attributed to their lack of background knowledge about the topic, or to the lack of opportunities given to them to discuss, summarize, or clarify on the relevant information that would allow them process the text more thoroughly. English language teachers have rarely led the learners to relate new materials presented in class to their previous knowledge base nor do they provide them with opportunities to generate questions, make summaries, or clarify the materials presented to them (Al-Makhzoumi, 1986).

Therefore, the researcher believes that the model introduced might help enhance reading comprehension among these students in English language.

3. PURPOSE OF THE STUDY

This study attempts to examine the effect of the reciprocal teaching method on enhancing reading comprehension by Jordanian students in the English language subject.

4. RESEARCH QUESTIONS

This study attempts to respond to the following major

question, "Is there any significant difference at ($\alpha=0.05$) between the mean scores of the first secondary school student on the reading comprehension test that can be attributed to the method of teaching?"

5. RESEARCH HYPOTHESES

For the purpose of the study, the following research hypotheses are formulated.

Hypothesis 1. There is no statistically significant difference between the grand mean scores of the two groups, the experimental and the control, on the *reading comprehension test* attributed to the method of teaching at the $\alpha = 0.05$ level.

Hypothesis 2. There is no statistically significant difference between the mean scores of the two groups, the experimental and the control, on the *literal level* of the reading comprehension test attributed to the method of teaching at the $\alpha = 0.05$ level.

Hypothesis 3. There is no statistically significant difference between the mean scores of the two groups, the experimental and the control, on *the inferential level* of the reading comprehension test attributed to the method of teaching at the $\alpha = 0.05$ level.

Hypothesis 4. There is no statistically significant difference between the mean scores of the two groups, the experimental and the control, on *the critical level* of the reading comprehension test attributed to the method of teaching at the $\alpha = 0.05$ level.

6. SIGNIFICANCE OF THE STUDY

The study is expected to provide other researchers with instructional guidelines, teaching procedures, and experimental findings to employ in future research. Educational decision-makers and local educational supervisors, as well as faculties of education in Jordan might benefit from the findings and implications of this study to better qualify and prepare prospective teachers, to make use of and promote a variety of procedures to facilitate the learning by the reciprocal teaching. The findings of this study may attract the attention of curriculum designers to the procedures and strategies incorporated within the framework of the reciprocal teaching for developing a teacher's guide. They also suggest activities to assist in implementing the reciprocal strategies successfully.

7. OPERATIONAL DEFINITIONS

The reciprocal teaching refers to an instructional activity that takes place in the form of a dialogue between teachers and students regarding segments of text. The dialogue is structured by the use of four strategies: summarizing, question generating, clarifying and predicting. The teacher and students take turns assuming the role of teacher in leading this dialogue.

- Summarizing: is selecting or creating key ideas across paragraphs, synthesizing ideas across paragraphs, deleting unimportant and redundant information, and categorizing information.

- Clarifying: means that learners are dealing with difficulties in the text by being alert to unfamiliar vocabulary, texts which are structured or set out in an unfamiliar way, new or difficult concepts.

- Predicting: means anticipating what will come next in the text based on appropriate prior knowledge and on the structure and content of the text.

The reading comprehension skills are operationally defined as follows: (a) literal comprehension skills included skimming, scanning, and vocabulary items; (b) inferential comprehension included drawing inferences and conclusions; and (c) critical comprehension included identification of the writer's purpose (Smith, 1987; Serag, 2000).

The first secondary students' score on the reading comprehension test administered for the purpose of the study measured reading comprehension skills.

Limitations

The findings of the study should be limited by the following:

- The participants of this study are restricted to the first secondary class students in Mu'tah Secondary School for Boys in Al-Mazar Directorate of Education.

- The instructional material course which was confined to a number of units taken from the English textbook prescribed for the Jordanian first secondary class students by the Jordanian Ministry of Education.

8. REVIEW OF RELATED LITERATURE

Theoretical framework

From a historical perspective, instruction in how to comprehend and understand is not new. The development of text comprehension instruction can be referred back to

Thorndike in (1917) who claimed that reading is reasoning. However, beginning readers were seldom taught cognitive strategies that could assist them in reading.

Research on reading instruction indicates that little time was spent on comprehension instruction. Comprehension was best tested but not taught. Before 1970s explicit instruction was done largely in content areas and not in context of formal reading instruction (Durkin,1979); research on instruction of comprehension strategies that could help students improve reading comprehension began in late 1970s and has evolved since.

According to Rosenshine and Meister (1994), the earliest uses of the term 'comprehension monitoring' is found in Markman (1981). The interest of scholars in what the readers know about cognition has led to the development of practical strategies for improving students' comprehension.

The National Reading Panel (2004) study indicated that instruction of text comprehension over the last 30 years has passed through three distinct three trends:

- The individual strategy training. Initial instruction focused on training of students on particular strategies such as comprehension monitoring or identifying main ideas. The idea behind this trend was whether the student could learn to use an individual strategy.

- Successful strategy instruction. The focus in this trend was shifted to whether particular strategies could be learned whether they could facilitate comprehension. Teaching of text comprehension strategies was validated by this trend. Good strategies were recommended and poor strategies were abandoned.

- Multiple strategy instruction. Next, scholars shifted their concern to whether the teaching of combinations of different strategies would lead to their acquisition and improvement of text comprehension. The significance of this trend lies in the fact that these multiple strategic teaching methods lead to study of the preparation of teachers to teach strategies in natural classroom context.

Comprehension strategies are procedures that guide students as they attempt to read and write (The National Reading Panel, 2004:4-41). For example, as the learner reads, he may be taught to generate questions, make a summary,...etc. These procedures help the reader to process the text more actively (The National Reading

Panel, 2004). The value of cognitive strategies in text comprehension is indicated by the usefulness of these strategies in the devising of instructional procedures; learning of these procedures by students will aid their text comprehension and learning independently; teaching strategies for text comprehension is a practical way for teachers to break the passivity of readers and encourage them to engage in their learning.

Mier (1984) identified three dimensions for typical instruction of cognitive strategies while reading, (a) the readers' awareness of his/her cognitive processes, (b) strategy modeling by the teacher, and (c) the reader practices asset of strategies to achieve internalization and independent mastery.

Research on the efficacy of cognitive strategies strongly supports reading strategies instruction. The general findings is that when readers are taught cognitive strategy instruction, they usually make significant gains on measures of reading comprehension over students trained with conventional instruction procedures (no cognitive strategy instruction) (Pressley et al. 1989; Rosenshine and Meister, 1994; Palincsar and Brown, 1984).

In summary, the last 20 years of research in learning, language acquisition, and teaching have produced some useful findings and generalizations about how teachers can facilitate students' reading comprehension. Within this broad area of teaching and learning, reciprocal teaching has focused on the comprehension processes, that teachers stimulate learners to use to construct meaning from instruction (Wittrock, 1992). According to Wittrock (1992) recent research on cognition and instruction has heavily addressed memory systems in learning. Mnemonic systems have been used to teach students to arrange familiar objects or ideas into an unambiguous series. To recall a point or a series of points one needs only to think of a familiar subject at home. The results of such research have been extended to include educational relevant problems of learning and teaching with comprehension. Given strategies of learning, learners are said to enhance their ability to construct meanings as they read text or learn in school.

Palincsar and Brown (1984) proposed the reciprocal teaching method. The reciprocal method is a feasible teaching method for teaching cognitive and metacognitive strategies of reading comprehension to poor readers even before they are fully able to decode. Reciprocal teaching requires students to be able to cope

with the concurrent cognitive demands of high-level English language processing and high-level strategic thinking for reading comprehension (Anderson and Pearson, 1984). According to Rosenshine and Meister (1997), there are four important instructional practices imbedded in the reciprocal teaching method:

- Direct teaching of strategies, rather than reliance solely on teaching questioning.
- Student practice of reading strategies with real reading, not with work sheets or contrived exercises.
- Scaffolding of instruction; students as cognitive apprentices.
- Peer support for learning.

According to Palincsar and Brown (1984), teachers should lead students to reconstruct their model of learning. First, teachers of English should work on changing the preconceptions of their students about reading and the subject itself with responsibilities of:

- Leading the dialogue and implementing the strategies. That is, through modeling, the teacher demonstrates how to use the strategies while reading.
- During guided practice the teacher supports students by adjusting the demands of the task based on each student's level of proficiency.
- The teacher assumes the role of a coach facilitator by providing students with evaluative information regarding their performance and promoting them to higher levels of participation.

It seems that teachers have a big responsibility while teaching via the reciprocal method, but students must know that success in school begins with a belief in themselves, in their abilities, and in the value of their efforts.

Empirical Studies

Jad (2003) proposed a teaching strategy and investigated the effect of this strategy on some comprehension skills by the Egyptian second preparatory class students. Eighty-eight participants were equally divided into two groups, experimental and control. A comprehension test was used to measure the students' performance on four aspects of comprehension: literal, inferential, critical and appreciative. The results of the study showed statistically significant differences between the experimental and control groups on the grand posttest and each domain of the post test in favor of the experimental group.

Abdul Hamid (2000) examined the effect of three

cognitive strategies on reading comprehension skills. One hundred and three first-secondary school students participated in this study. The findings of the study showed significant difference between the mean scores of students on the reading comprehension measure attributed to three cognitive strategies. Combined questions and summary strategy was better than each strategy separately in promoting reading comprehension skills. The author concluded that using cognitive strategies in teaching reading comprehension to secondary students should be welcomed, if any of these strategies was used appropriately.

Thashdhah (2001) investigated the effect of training on extracting the main idea from the reading text on the tenth grade students' reading comprehension in South Amman UNRWA school. One hundred students participated in this study, and were equally divided into two groups, experimental and control. The findings of the study revealed significant differences between the experimental and control groups on the comprehension measure in favor of the experimental group.

McGriff (1996) investigated the effects of learner-generated summaries on information acquisition, comprehension and recall of facts, concepts, rules, and principles from a scientific text about the physiology of the human heart. The study employed 159 undergraduate students, who were divided into three treatment groups: summarizing among parts of text (32 students), summarizing between text and prior knowledge (45 students), and summarizing with a combined strategy (41 students), and a control group (39 students). The treatment groups received a self-directed instructional lesson on how to write their particular type of reciprocal summary before applying that strategy, while reading the scientific text. The control group received the same scientific text, but without a lesson, and were instructed to use a preferred study strategy while reading. Posttest data were collected on three measures – terminology, identification and comprehension. The results indicated no main effect for the use of the reciprocal learning strategies.

Alfassi (1998) conducted a study to investigate the effects of strategy instruction on reading comprehension. The main objective of strategy instruction is to foster comprehension monitoring. The study examined whether reciprocal teaching methods (strategy instruction) were superior to traditional methods of remedial reading (skill acquisition) in large intact high school remedial classes.

With a methodology similar to that used in the pioneering work of (Palinscar and Brown, 1984), 53 students in five intact reading classes who received strategy instruction were compared to 22 students in three control – group classes. The results indicated that in this challenging setting strategy instruction was superior to traditional reading methods in fostering reading comprehension as measured by experimental-designed reading tests. Consistent with previous research, no differences were found between the groups on two standardized measures of reading.

An interesting study was conducted by Le fever (in Moore, Wilkinson, 1999), where students used a tape recorder to listen to the story. The aim was to help students who did not have adequate decoding skills to participate in reciprocal teaching. They found that the students responded well to this approach and showed significant gains. They found that the students felt more motivated because they could use a text that was of interest to their age level.

King and Johnson (1999) found that the dialogue helped students construct meaning in their study with reading texts. The purpose of the study was to examine reciprocal teaching in typical classrooms where teachers had previous exposure to constructivist thinking. The sample of this study consisted of four elementary schools in a public school district having 10 elementary schools. One hundred students were involved in this study. Data analysis involved scoring the number correct on each of six researcher-designed assessments. Two statistical tests were conducted on students raw scores on the Dimensions of Scientific Literacy of the standardized MEAP test–subset. The reciprocal teaching provided a framework for the students to understand. They also found that when teachers consistently and clearly modeled all four reciprocal teaching strategies, provided examples of meaningful dialogues, offered guided practice to the students, and gave praise and feedback, students dialogues mirrored that of their teachers. Conversely, when teacher modeling was neither clear nor consistent, or if instruction was lacking any of the four above areas, student dialogues mirrored those weaknesses, which influenced their ability to elaborate on and apply test ideas.

Fung, Willinkson and Moore (1999) investigated L1-assisted reciprocal teaching for ESOL students to improve their comprehension of English expository text. The sample of the study consisted of 12 year 7 and 8

grade Taiwanese students. The study employed standardized and experimenter-developed tests of reading comprehension. The result of the study showed that students with limited English proficiency can improve their English comprehension through reading strategy instruction that can capitalize on students L1 language proficiency and literacy skills.

The present study is guided by the reciprocal teaching of Palincsar and Brown (1984). In their teaching approach, students were taught four concrete reading strategies: summarizing, questioning, clarifying, and predicting. The present study investigates whether reciprocal teaching will be effective in enhancing the reading comprehension skills of the first secondary school students. In addition, this study will concentrate on the four reciprocal teaching strategies: summarizing, questioning, clarifying, and predicting, unlike other studies, which concentrated on one or two strategies of the reciprocal teaching. For example some studies concentrated on reciprocal questioning, others studies focused on poor readers, whereas this study will be conducted in General English-reading classes at Jordanian schools, where students reading proficiency is mixed.

As a conclusion, the knowledge gleaned from these studies was useful in the following considerations: (a) there existed empirical evidence favoring the conclusion that teaching of a variety of reading comprehension strategies leads to increased learning of the strategies; (b) text comprehension moved from individual strategy instruction to the use of strategies in combination, and finally to a multiple strategy instruction; multiple strategy instruction, such as the case of the reciprocal teaching method adopted by this study which includes flexible strategies in term of what strategies and when to be taught over the course of reading sessions, would be an effective and natural bases for teachers' preparation.

Therefore, the present study utilized a multiple strategy instruction for enhancing reading comprehension.

9. METHODS AND PROCEDURES

Participants

The participants of the study consisted of 88 first secondary grade students, aged 17-18, enrolled in Mutah Secondary School for Boys, during the first semester 2005/2006. The school was purposefully selected on convenient grounds. By draw, two sections were

randomly assigned to the treatment groups, the experimental group which was taught by the reciprocal teaching method, and the control group, which was taught by the conventional method of teaching. Randomization of the participants was not possible!

Instrument

For the purpose of the study, the researcher constructed a reading comprehension test. The following is a brief description of this test.

Reading Comprehension Test

The purpose of this instrument was to measure the performance of the two groups of the study in reading comprehension. The texts for reading comprehension were selected from that used in reading resources for English language (cf. Markstein and Hirasawa, 1981), and from the recent first secondary school textbook (AMRA, English Course for Jordan, General English 1, 2000). The selection was guided by the descriptions of learning objectives for English reading that are set for students in the first secondary class in Jordan. In this selection the researcher aimed at equivalence of text types and appropriateness for the students. Therefore, a number of expository and narrative texts were selected (ranging from 150 to 350 words per passage) aiming at the given age group, intended for use in the context of English language education.

The 25-items of the test were directed at the literal, inferential and critical of reading comprehension. The literal aspect consists of 9 questions asking students to find information and ideas that are explicitly stated in the text. In addition, it is also appropriate to test vocabulary in this aspect, The inferential aspect includes 8 questions on thinking processes such as drawing conclusions, making generalizations and prediction. Summarizing the main idea when it is not explicitly stated in the text, and selecting conclusions which can be deduced from the text are examples of questions in this domain. Finally, the critical reading aspect- comprising 8 questions covered the ability to identify and judge the purpose of the author or the tone of the passage (Mohamad, 1999; Karlin, 1971).

The following steps were employed for the preparation and administration of the comprehension test.

1. The instructional objectives of each unit/lesson were identified. The units' objectives were consistent with that already identified in the Teacher's Book and in the Chart of Scope and Sequence of Objectives and

Structural Content for the first secondary school students.

2. A table of specification was constructed based on the three aspects of reading comprehension, literal, inferential, and critical.

3. The test was built based on the aspects of comprehension stated in the table of specification. Test items reflect the weights of objectives in each domain (36% for the literal, and 32% for each of the other two domains).

4. A panel of judges refereed the comprehension test. The panel was requested to make any changes seen appropriate in terms of language clarity, accuracy, appropriateness, and the like. Further, it was asked to judge whether each question reflects the domain it pertains to.

5. The time for the reading comprehension test was assigned based on the piloting study. The test time was 50 minutes.

6. A test addendum was prepared. It described the test objectives, content, number of pages, items, time, and the rubrics for each item.

Test Validity

The comprehension test was content validated by a panel of experts from Department of English language, and Department of Curricula and Instruction at Mu'tah University, as well as experts from the Department of Examinations and local supervisors and teachers of English in the Directorates of Al Mazar, Al Qasser and Tafila. One expert was specialized in methods of teaching English language from Amman Arab University for Graduate Studies.

Some items had to be modified in line with the remarks and suggestions of the judges. One passage (Summer Course) was seen as inappropriate by the judges, and it was completely removed and replaced with another passage about "Aspirin".

Test Reliability

The comprehension test was tried out on a group of 30 students. This group was selected from the population, but outside the participants of the study. The purposes of piloting were to discriminate questions that could be answered based on examinees' logic or general knowledge, to estimate the appropriate time for the test, and to measure the test reliability.

Only the questions and the multiple-choice options were first copied down and given to a volunteer English

language expert for taking the test without the passages. Items, which nearly take 50 percent, or more, right answers, were taken away (Madsen, 1983).

Second, some minor corrections in the distracters and rubrics were made accordingly. Third, the computed reliability for internal consistency of the entire test was (0.82). Additionally, the computed reliability for internal consistency of the three domains of the test were 0.86, 0.83, and 0.78.

The teach comprised the purpose, texts, methods of teaching and evaluation procedures. The following is a brief description of the model.

Objectives

The literal, inferential, and critical skills of reading comprehension were the focus of the Specifically, the first secondary grade students were expected to (a) identify the main idea of a text; (b) identify specific information in a text; (c) guess the meaning of words from a context; (d) draw a conclusion; and (e) identify the purpose of the author.

Texts

The content of the present Reciprocal Based Reading Program (GBRP) included all reading lessons prescribed for the first secondary school students during the second semester of AMRA GENERAL ENGLISH 1. Eight lessons were required, and each lesson represented one period of class time (60 minutes per period). Lesson one of each unit has a common format and focuses on reading. The eight units of the program covered the major themes of mass media; advertisements; competitions; ecology; social development; and democratic government.

The program contained eight reading lesson plans for eight reading lessons. The purposes of these plans were to reach a consensus on the reciprocal teaching plans through experts in reading and reading psychology, and to facilitate the work of the teacher. The selections were authentic material drawn from a wide variety of written English ranging from journalistic to academic and literary styles. Each selection contained about 455 words. The overall pattern of the reading lessons was as shown under methods of teaching.

Method of Teaching

The reading comprehension program was based on the reciprocal teaching model. Comprehension instruction

based on a reciprocal view of the reading process emphasized a set of procedures (reciprocal in nature) that students could use to comprehend a text. The goal of instruction was to develop a sense of conscious control, or metacomprehension awareness, over a set of procedures that they could adapt to any text they read.

For the purpose of the study, a set of procedures was identified from the research evidence. One methodology more than any other had revealed much about the active comprehension strategies of reciprocal readers as they make sense of text. These strategies included processes that occur before a text was read, as they read, and after the front-to-back reading of the text was completed. The learning strategies were derived from the reciprocal learning model and strategic reading. Successful readers often used these strategies.

Instructional Guidelines

The followings are practical procedures for improving teaching reading by the reciprocal teaching method.

- **Summarizing.** Ask students to make summaries across sentences, across paragraphs, and across the passage as a whole. When the students first begin the reciprocal teaching procedure, their efforts are generally focused at the sentence and paragraph levels. As they become more proficient, they are able to integrate at the paragraph and passage levels.

- **Question generating.** Ask students to generate questions; the students first identify the kind of information that is significant enough to provide the substance for a question. They then pose this information in question form and self-test to ascertain that they can indeed answer their own question.

- **Clarifying.** Ask students to clarify, and to be alert to the effects of difficulties to comprehension and to take the necessary measures to restore meaning (e.g., reread, ask for help).

- **Predicting.** Students must activate the relevant background knowledge that they already possess regarding the topic. The students have a purpose for reading: to confirm or disprove their hypotheses. Furthermore, the opportunity has been created for the students to link the new knowledge they will encounter in the text with the knowledge they already possess. The predicting strategy also facilitates use of text structure as students learn that headings, subheadings, and questions imbedded in the text are useful means of anticipating what might occur next

Validity of the Program

To complete the program and to increase its content validity, comments and criticism on the original draft of the program were solicited from 14 teachers, professors, and education experts. A brief review of the reciprocal model was presented to them along with the drafts. The panel comprised members from Jordanian state/private-universities (departments of English language, and of instruction and curriculum) as well as experts from the Ministry of Education, Directorate of Examinations and local supervisors and teachers of English from the Directorates of Education in Al Mazar, Al Qasser and Al Gassaba regions. Each reviewers were asked to comment on the suitability, practicability, exhaustiveness, and accuracy of the reciprocal reading strategies of the three stages of reading.

On the basis of the reviewers' written feedback, the investigator completed the program, the *Reciprocal – based Reading Program*. One strategy was sub-divided into three relevant ones for facilitating implementation.

Piloting

One unit of the texts included in this program was tried out on a group of 28 students. This group was selected from the population, but outside the participants of the study. The purposes of piloting were to estimate the appropriate time for the lesson implementation, to try out the practicability of the lesson forms, and to provide the teacher of English with a real demonstration. On the basis of this implementation, the teacher was asked to train students on the pre-reading strategies before the treatment was set out. The teacher directly instructed the strategies employed in this stage. This instruction aimed to identify the new role of learning, the teachers' sensitivity, and expectations to his individual students, and the purpose and requirements of every strategy.

Teacher's Training

A highly qualified teacher of English, with a B.A. in English language, General Diploma in Education, and a Master's degree in Education, volunteered to implement the program. To ensure intact implementation of the procedures and strategies employed in the reciprocal teaching strategy, the teacher was given intensive training. Before the experiment, he was invited to participate in the development of the lesson plans, and the selection of objectives and texts of the reading program. He participated in validating the teaching plans, and the

instruments of the study. The teacher was trained on the effective procedure of strategy instruction. He was told that instruction could be most effective when the instructor carefully explained the purpose of the strategy, modeled its use, provided extensive practice and feedback for the students, and encouraged the independent transfer of these strategies to new learning situations.

Study Procedures

The procedures of this study went as follows:

- Review of related literature was conducted. The investigator used the terms *comprehension*, *reciprocal teaching*, *reading strategies*, *metacognition*, and *meta-comprehension*.
- The English course material prescribed for Jordanian first secondary school students was selected as a basis for inclusion in the reciprocal-based reading program.
- The reading texts in the units were identified, analyzed and prepared compatible with the reciprocal teaching requirements and referred to a panel of judges for further validation. The contents comprised the reading selection for the purpose of the study because they found appropriate for the Jordanian secondary school learners in terms of age, culture, background knowledge, language level ...etc. All lessons were planned in writing for classroom delivery based on the reciprocal teaching method.
- The reciprocal reading comprehension program including 4 reciprocal reading strategies was developed, validated, and piloted as appropriate.
- Based on the objectives of the reciprocal-based reading program, the measures of reading comprehension was prepared, drafted, content-validated, and piloted.
- The time for the comprehension test and lesson plans was assigned based on the pilot study.
- The consent of the Ministry of Education, and consequently the permission of Al Mazar Directorate of Education were taken for implementing the reading program in the targeted school.
- The school and the participants of the study were selected, divided, and treated as appropriate. There were two groups of the study, one experimental and the other was control. The experimental group studied by the reciprocal teaching method, and, the control group studied by the conventional teaching method.
- Before the experiment commenced, the students'

scores in the first semester 2005/2006 in the English subject were taken, recorded, and analyzed for detecting any prior differences between the two groups of the study.

- The teacher of English was given intensive training on teaching the reciprocal reading comprehension program. He was trained on modeling the reciprocal learning and teaching strategies, following with increasing emphasis on the learner-generation of the comprehension-building devices included in this program. Additionally, He was told to conclude by teaching metacognitive procedures for self-guided reciprocal learning.
- Upon completion of the experiment, the comprehension test was immediately administered. Participants in the two sections were informed on the test date, time, and purpose.
- Results for the comprehension test were tabulated. The maximum score was 25 and the minimum was null. Each item takes either 1 score or null. The students' results in the first semester in the English language were collected, transformed from 70 into 25, and tabulated as well.
- Means and standard deviations were computed to compare means for the two groups on the pre and post administrations of the comprehension test.
- Analysis of covariance, ANCOVA test, using pretest scores as the covariates, was performed to detect significant differences between the two groups on the post-administration of the reading comprehension measure.

Study Design

The present study adopted the quasi-experimental design. It employed administering the treatment followed by a posttest. The independent variable was the method of teaching, which had two levels: the reciprocal teaching method and the conventional teaching method. Students' performance on the comprehension test was the dependent variable.

Data Analysis

Means and standard deviations were computed to compare means for the two groups on the posttest. Analysis of covariance test, using pretest scores as the covariates, was performed to detect any significant differences between the three groups on the posttest. All hypotheses were tested at the $\alpha = 0.05$ level.

11. Results of the Study

To test the hypotheses of this study, mean scores and standard deviations of both groups on the pretest and the overall posttest are tabulated as shown in Table (1).

As can be seen from Table (1), the experimental group mean score was higher than the control group (18.05; 16.99) in the English language subject as indicated by the school official transcript for the first semester 2004/2005. Concurrently, the experimental group outperformed the control group on the posttest (16.16; 13.27 respectively).

To answer the first question and test these hypotheses, mean scores and standard deviations for both groups on the posttest are tabulated as shown in Table (2).

The results of Table (2) show differences of (11.56%, 1.28%, 4%, 1.3%) between the mean scores of the two

groups of the study on the overall comprehension posttest and on each level of it in favor of the experimental group, which was taught by the reciprocal teaching method. These differences are computed according to the following formula, means of the experimental minus the means of the control on the overall posttest and on each level of it multiply 4 because the test was scored out of 25.

To test the significance of these differences between the means of both groups on the levels of comprehension of the posttest, the MANCOVA statistical procedure was performed, using the pre-scores as the covariate. The Hotelling T-square value of .46 is significant at $\alpha < 0.05$. Table 3 shows the results of MANCOVA to test the significance of the mean scores of both groups on the levels of reading comprehension of the posttest using the pre-scores as the covariate.

Table 1. Means and standard deviations for both groups in the English subject prior the treatment and on the overall reading comprehension posttest

Group	No.	Pre-scores		Posttest	
		Means	SD	Means	SD
Experimental	44	18.05	2.66	16.16	2.36
Control	44	16.99	3.59	13.27	3.44

Table 2. Means and standard deviation for both groups on the overall comprehension and the three levels of comprehension of the posttest

Group	Variable	No.	Means	SD
Experimental	Comprehension (overall)	44	16.16	2.36
	Literal	44	4.30	1.77
	Inferential	44	6.00	1.12
	Critical	44	5.75	1.10
Control	Comprehension (overall)	44	13.27	3.44
	Literal	44	3.98	1.64
	Inferential	44	5.00	1.61
	Critical	44	4.43	1.48

Table 3. Results of MANCOVA of the students' scores for both groups on the levels of reading comprehension of the posttest, using the pre-scores as the covariate

Source of Variance	Variables	Sum of Squares	Degree of Freedom	Mean Square	F.	Sig.
Covariate	Literal	4.34	1	4.34	1.50	.00
	Inferential	20.56	1	20.56	12.01	.00
	Critical	.79	1	2.79	1.64	.20
Method	Literal	3.31	1	3.31	11.14	.00
	Inferential	28.99	1	28.99	16.94	.00
	Critical	0.64	1	40.64	23.95	.00
Residual	Literal	245.79	85	2.89		
	Inferential	145.43	85	1.71		
	Critical	44.25	85	1.69		
Total	Literal	253.44	87			
	Inferential	194.98	87			
	Critical	187.68	87			

Table 4. Results of ANCOVA of the students' scores for both groups on the overall reading comprehension posttest, using the pre-scores as the covariate

Source of Variance	Sum of Squares	Degree of Freedom	Mean Square	F.	Significance
Covariate	112.43	1	112.43	15.02	.00
Method	228.75	1	228.75	30.56	.00
Residual	636.17	85	7.48		
Total	977.35	87			

Table (3) indicates that the F values of 11.14, 16.94, and 23.95 are significant at $\alpha < 0.05$. Thus, the null hypotheses, which state that there are no statistically significantly difference between the mean scores of the experimental group, and the control group on the literal, inferential and the critical levels of the comprehension posttest at the $\alpha < 0.00$ level, are rejected. This means that the students' performance on the literal, inferential, and critical levels of comprehension has improved by the treatment in favor of the experimental group, which was taught by the reciprocal teaching model.

To test the significance of the 11.56% difference between the mean scores of the two groups on the overall reading comprehension measure, the ANCOVA test is performed using the school-given scores as the covariate. Table 4 shows the results of ANCOVA to test the significance of the overall posttest means for both the

experimental and the control groups using the pre-scores as the covariate.

The results of Table (4) indicate that the F value of 30.56 is significant at $\alpha < 0.05$. Thus, the first null hypothesis, which states that there is no statistically significant difference between the overall mean scores of the experimental group, and those of the control group on the posttest of the reading comprehension at the $\alpha < 0.05$ level, is rejected. This means that the students' performance on the entire posttest has, also, improved by the treatment in favor of the experimental group, which was taught by the reciprocal teaching model.

12. DISCUSSION OF RESULTS AND RECOMMENDATIONS

To recall, the major purpose of this study was to

examine the effects of the reciprocal teaching method in enhancing the reading comprehension skills of the first secondary students.

The results of the MANCOVA and ANCOVA procedures indicated that the mean score of the experimental group was significantly higher than that of the control group on the posttest, using the pretest as the covariate. This significant improvement was expressed in the subjects' mean scores on the total posttest, and on the three domains of the reading comprehension test, literal, inferential, and critical. The literal comprehension skills, domain 1 included skimming, scanning, and vocabulary items skills; drawing conclusions and identification of the author's point of view skills represented the inferential and critical comprehension skills (domains 2 and 3 of the posttest, respectively).

The significant increment in the mean score of the experimental group over that of the control group on the three domains of the posttest can be attributed to the effectiveness of the reciprocal teaching model. The results of the study indicated that the use of the reciprocal teaching model had led to an increment in the subject's performance. This increment was expressed on all the reading lessons, 8 units, of the English language subject required for the first secondary school students in the second semester 2005/2006.

This result supports the hypotheses under investigations. It, also, supports the findings of the studies that used reciprocal instructional strategies in teaching reading comprehension (Jad, 2003; Thashdhah, 2001; Abdul Hamid, 2000; Al-Fassi, 1989; King and Johnson, 1999; Fulg, Wilkinson, and Moore, 1999).

The reciprocal strategies used in these studies had positive effects on reading comprehension, vocabulary recall, and decoding. These results could be attributed to the reciprocal procedures that the learners used during instruction to establish relations among the parts of the text presented, and procedures that the learners used to link between instruction and their prior knowledge and experiences. Research has validated the effectiveness of many reciprocal strategies for reading comprehension. Among these are summary generations (Thashdhah, 2001).

This phenomenon of improvement might best be attributed to the assumption that the reciprocal model teaches learners strategies of perceiving the importance of their control and responsibility for being active in learning.

The positive gains in reading comprehension obtained by the experimental group in this study might be construed by the effect of questioning strategy on reading comprehension.

This result could be attributed to the effectiveness of the reciprocal model in stimulating the student's awareness of their roles in learning with understanding, and their preconceptions about reading comprehension. This is consistent with a huge bulk of literature on the role of schema in reading and comprehension.

Probably, the positive effects of this study are attributed to the metacognitive strategies incorporated in the reciprocal teaching model. In a study by Hammash (2004) the students gained significant differences in favor of the SQ3R, the graphic organizer, and KWL strategies, respectively. Also, Awadh and Sa'eed (2003) detected significant differences on the comprehension test, question production, and reading awareness attributed to the strategy of teaching in favor of the metacognitive strategies; and Serag (2000) obtained significant differences between the mean scores of the study groups in favor of the experimental group, which was taught by the indirect strategies-based program.

On the other hand, this finding of this study was inconsistent with the study of (McGriff, 2001). The incompatibility between this study and that of McGriff (1996), which indicated no main effect for the use of the reciprocal learning strategies (different variation of summarization), may be attributed to the impact of novel learning strategies used by that study, the design of materials, and the strategies used by the control group of that study.

RECOMMENDATIONS

Further research is recommended to provide additional knowledge regarding the effect of using cooperative groups when using the reciprocal teaching model; some studies found that teamwork was more effective than individual or collective teaching methods when using the reciprocal teaching method. Further replication of the experiment at other different levels of learners in school and other educational institutions is recommended.

By implication, teachers should think of text printed questions, different levels of summary given in advance as good techniques of achieving comprehension; teachers should not think of the additional efforts exerted at the beginning of implementing the generative teaching

method because this effort would diminish drastically upon the repetitious use of the instructional plans, and

these plans can be re-used in subsequent offerings and reading classes.

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