# The Effects of the Reciprocal Teaching Model on Jordanian Tenth Grade Students' Reading Comprehension Achievement in English

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## Abstract

This study aims at examining the effects of the Reciprocal Teaching Model on Jordanian tenth grade students' reading comprehension achievement in English. The sample of the study (N= 166) consisted of two groups: the experimental group (N= 85) and the control group (N= 81). To answer the questions of the study, students' scores on the pre- and post Reading Comprehension Achievement Test were analyzed utilizing t-tests. The results demonstrated the effectiveness of the model in improving the students' achievement, especially with male students and within the inferential level of reading comprehension. Finally, implications and recommendations for educators, teachers, and researchers were suggested.

# أثر نموذج التعليم الدوري التبادلي في تحصيل طلبة الصف العاشر الأساسي في فهم المقروء باللغة الإنجليزية

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## الملخص

هدفت هذه الدراسة إلى فحص أثر نموذج التعليم الدوري التبادلي في تحصيل طلبة الصف العاشر الأساسي في فهمهم المقروء باللغة الإنجليزية. وقد تكونت عينة الدراسة (ن= ١٦٦) من مجموعتين: الأولى تجريبية (ن= ٨٥)، والثانية ضابطة (ن= ٨١). وللإجابة عن أسئلة الدراسة، وظفت اختبارات (ت) لتحليل درجات الطلبة على اختبار التحصيل في فهم المقروء قبل التطبيق وبعده للوقوف على نمو تحصيل المجموعة التجريبية؛ فبرهنت النتائج على فعالية النموذج في تحصيل الطلبة، وخصوصا الطلبة الذكور وفي المستوى الاستنتاجي. وخلصت الدراسة، في ضوء نتائجها، إلى جملة من التطبيقات والمقترحات للتربويين والباحثين.

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## Introduction

Current research investigating reading comprehension instruction in classrooms suggests a lack of instructional models and strategies that causes a lack of reading comprehension skills among many students in today's classrooms (Farstrup, 2002; Pearson, Kamil, Mosenlal, & Barr 2000). Therefore, it is of great importance that teachers be aware and knowledgeable of the many instructional models and strategies available to enhance students reading comprehension, and how to teach them to students. Simultaneously, it is very essential to identify the effective instructional models and strategies that: give students greater enthusiasm about reading, promote their interest and encouragement in reading comprehension, develop their reading comprehension skills, help them comprehend different types of materials, and aid them in accomplishing reading comprehension tasks successfully.

One of the effective instructional means that can achieve such previous mentioned goals is the Reciprocal Teaching Model (RTM). This instructional model was designed by Brown and Palincsar (1982) to enhance students' reading comprehension skills and their metacognitive awareness by promoting self-regulation and self-monitoring while at the same time requiring students to activate their schema According to Brown (1985), the (RTM) can be defined as a model in which reading comprehension is viewed as problem solving activity that aims at promoting thinking while reading. Routman (2000) views the (RTM) as an interactive scaffolded instructional procedure in which the teacher leads a group of students as they dialogue their way through a text to understand.

The term "reciprocal" emphasizes the nature of instruction that each person acts in response to the other (Palincsar & Brown, 1984). Oczkus (2003) has introduced the (RTM) as a cooperative model that is designed

to provide overt instruction, role play and modeling, practice, and feed-back in order to improve students' reading comprehension skills. Thus, an important feature of the (RTM) is the social and verbal interaction among students and their teacher that is referred to as interactive and cooperative learning. Palincsar, Brown and Martin (1987) stated that when interaction is lacking, learning is inhibited. During the (RTM), the teacher and students work closely together to construct meaning from a given reading text.

The (RTM) involves four major strategies: predicting, questioning, clar-ifying, and summarizing; all of which are valuable in improving reading comprehension skills (Palincsar & Brown, 1984). Predicting refers to activating studentsí background knowledge and hypothesizing what information a text or a section of it might present. Questioning is the identification of information needed to formulate cogent questions, to articulate the question, and to engage in self-monitoring of the text. Clarifying refers to recognizing the organization of written materials, not-ing items that hinder comprehension, and asking for explanations during discussion. Summarizing is the integration of the content being read, retelling it emphasizing the main points, and depending upon it to make predictions about the content of the next section (Routman, 2000). Consequently, the (RTM) is a teaching procedure with specific strategies that can be employed by teachers in implementing reading lessons. This model consists of four major strategies (questioning, clarifying, predict-ing, and summarizing) with certain steps that determine the roles of both teacher and students for each strategy.

Since the development of the (RTM) by Brown and Palincsar (1982), many research studies have been carried out to explore the advantages of this model (Oczkus, 2003; Carter, 1997; Rosenshine & Meister, 1994; Miller, Miller & Rosen, 1988), and to examine its effectiveness in improving reading comprehension skills across a range of elementary (Hashey & Connors, 2003; Hacker & Tenent, 2002; Kelly, Moore & Tuck, 1994; Gilory & Moore, 1988), middle (Little & Richards, 2000; King & Johnson, 1999; Dearmody & Speaker, 1999), and high school stu-dents (Clark, 2003; Westera & Moore, 1995). The results of these research studies showed that the (RTM) was advantageous in: (1) improv-ing students' reading comprehension using the four strategies of the model; (2) scaffolding the four strategies by modeling, guiding, and applying the strategies while reading; (3) guiding students to become

metacognitive and reflective in their strategy use; (4) helping students monitor their reading comprehension and solve problems that hinder it; (5) using the social nature of learning to improve and scaffold reading comprehension; and (6) affecting students' reading comprehension achievement positively.

In summary, the (RTM) has been demonstrated by research studies to be a successful model in regular classroom settings in improving students' reading comprehension skills at all age and grade levels, especially with elementary and middle school students. However, this model has not been researched to examine its effectiveness in improving high school studentsí reading comprehension skills in terms of different levels of comprehension (literal, inferential, critical, and creative) and their gender. Hence, it is felt by the researchers to carry out this study that would address such variables to examine the extent to which the (RTM) can affect: (1) the skills of specific reading comprehension levels over others, and (2) students' reading comprehension achievement in these specific skills in terms of their gender.

### Problem and Significance of the Study

The problem of this study can be represented by the fact that there is a need for Jordanian teachers to be aware of the effective instructional models to develop Jordanian students' reading comprehension skills. Most Jordanian students lack the reading skills necessary for adequate comprehension because of the control of the traditional classroom environment which is due to a deficiency in precise instructional practices. Therefore, this study is carried out as an endeavor to improve Jordanian students' reading comprehension skills through the use of the (RTM). In light of the results of this study, Jordanian teachers will be able to employ this model to enhance their students' reading comprehension skills.

It is the significance of this study to provide information that would assist educators and teachers as well as researchers to better understand good teaching, and in turn to formulate more effective instructional models and strategies in the area of reading comprehension. Therefore, the study is an attempt to examine the effectiveness of reciprocal teaching in enhancing students' reading comprehension skills. It is hoped that the findings of this study to be of more practical value for reading teachers. It is very essential for reading teachers to understand the specific and effective models and procedures that are responsible for the development of

significant methodological concepts that eventually will improve students' reading comprehension skills.

## Purpose of the Study and Research Questions

The purpose of this study was to examine the effects of the Reciprocal Teaching Model on Jordanian tenth grade students' reading comprehension achievement in English. To achieve this purpose, the following research questions were addressed:

1. Does the (RTM) affect Jordanian tenth graders' reading comprehension achievement in English?

2. Are there any significant differences between Jordanian male and female tenth graders' reading comprehension achievement in English due to the (RTM)?

3. Are there any significant differences between Jordanian tenth graders' Literal and Inferential reading comprehension achievement in English due to the (RTM)?

## Limitations of the Study

The results of this study are limited by the following: (1) the sample consisted of only the students of the tenth basic grade. Therefore, the results cannot be generalized for students of other basic grades. (2) the sample represented the students in public schools of Irbid city; thus, the results cannot be generalized for students in other Jordanian public schools. And (3) the study examined the effects of the Reciprocal Teaching Model on students' reading comprehension achievement in the two levels of comprehension: literal and inferential; therefore, the results can't be generalized to represent the effects of the model on students' reading comprehension achievement in other comprehension levels (critical and creative).

## Methodology and Procedures
## Population and Sample of the Study

The population of this study consists of all Jordanian students of the tenth basic grade in public schools of Irbid city for the academic year 2004/2005. The total number of those students, according to the statistical records of the first directorate of Irbid, is (3638) which includes (1832) male students enrolled in (45) sections, and (1806) female students enrolled in (50) sections.

The sample of this study was chosen randomly from its population and included (166) students who were enrolled in four sections (two sections for male students and two sections for female students) in two schools. Each of the two groups of the study (the experimental and the control) was represented by two sections, one for male and another for female. Table (1) shows the distribution of the sample of the study according to the sections, gender and groups.

**Table (1)**
**The Distribution of the Sample of the Study**

| Group | Section | | | | Total |
|---|---|---|---|---|---|
| | Male | | Female | | |
| | (1) | (2) | (3) | (4) | |
| Experimental | 44 | | 41 | | 85 |
| Control | | 40 | | 41 | 81 |

**Instrumentation**

The Reading Comprehension Achievement Test (RCAT) was the major instrument in this study. To examine Jordanian tenth basic grade students' reading comprehension achievement in English, the researchers have adopted the (RCAT) which is one of a Timed Readings Series that was constructed, validated, and published by Spargo (1989).

The (RCAT) consists of two 400-word expository passages entitled"ìA Great Composer" and "Food Smart." Each passage followed by ten questions: five fact questions (1, 2, 3, 4, and 5) to measure literal reading comprehension (i.e., main ideas, secondary ideas, supporting details: facts, examples, names, events, dates, etcÖ) and five thought questions (6, 7, 8, 9, and 10) to measure inferential reading comprehension (i.e., exploring hidden ideas, recognizing cause-effect relationships, making analogies, predicting consequences, identifying purposes, drawing conclusions, etc...). That is , the (RCAT) contains a total of (20) questions for the two passages. Moreover, the researchers used Fry's Readability Graph (Fry, 1977) to examine the readability level of the two passages of the (RCAT), and have found that the two passages were readable for Jordanian tenth grade students and compatible with the required reading passages in their English curricula.

The researchers also distributed the (RCAT) to twenty experts in the fields of Language instruction and measurement and evaluation to assure

the content suitability of its two passages for Jordanian tenth grade students and to judge its questions in terms of measuring literal and inferential reading comprehension. The experts' comments indicated that the (RCAT) has an excellent content and construct validity.Then, the (RCAT) was administered to a sample of (130) Jordanian male and female students of the tenth grade to examine its reliability and determine the time required for such exam. After analyzing their responses, it has been found that the required time for implementing the (RCAT) is 60 minutes, and the Chronbach's alpha reliability coefficient, according to Split-half method, is (0.93). This indicates that the (RCAT) is valid and reliable to be administered to the sample of the study.

As for the administration of the (RCAT), the following instructions were followed:
1. The examiner distributes a copy of the (RCAT) for each student.
2. The examiner asks the students to write their serial numbers and their sections on the first page of the exam.
3. The examiner informs the students that the exam consists of two texts, each one is followed by ten questions.
4. The examiner informs the students that they are required to read each text silently and answer its ten questions without referring back to the text.
5. The examiner tells the students that time of the exam is 60 minutes and announces its start.

With regard to the (RCAT) scoring, each question is given (5) scores; that is, the literal reading comprehension score is (50), the inferential reading comprehension score is (50), and the total score of the (RCAT) is (100).

**Data Collection Procedures**

After assuring the validity and reliability of the (RCAT), the study has undergone the following sequential procedures for data collection over the first month of the second semester for the academic year 2004-2005:
1. Meeting with the headmaster and headmistress of the two schools that represent the four sections of the sample of the study, after taking permission from the First Directorate of Irbid, to carry out the study in these schools.
2. Clarifying the purpose of the study to the teachers (two males and two females) of the four sections of the sample of the study, and training them

on how  to implement both the pre- and posttests of the (RCAT) accord-ing to   its prescribed procedures.

3. Holding a workshop for seven days to the two male and female teach-ers of the two sections that represented the experimental group.  The workshop has dealt with:

   a. Explaining the (RTM) to the two teachers, training them on how such model can be employed in carrying out reading lessons, and having dis-cussion about the Model.

   b. Observing the two teachers employing the Model with their students in a reading lesson entitled "The Royal Jordanian Story"(Harrison et al., 1994), providing them with necessary feedback, and answering their questions.

4. Implementing the pre-test of the (RCAT), two days prior to the onset of the teaching, by the four teachers to all subjects in both the experimen-tal and control groups.

5.  Teaching the two lessons of "The Heart," and "Four Famous Arab Writers" (Harrison et al., 1994), for two weeks - five classes per week for each lesson, by the four teachers to the students in the four sections of the sample of  the study according to two different instructional sequences. The instructional sequence of the Reciprocal Teaching Model was employed by two male and female teachers in teaching the two lessons to the students in the two sections that represented the experimental group, and the instructional sequence of the Traditional Method was employed by the other two male and female teachers in teaching the same two les-sons to the students in the two sections that represented the control group.

6. Implementing the post-test of the (RCAT) according to the procedures of the pre-test, one week after the end of teaching, by the four teachers to all subjects in both the experimental and control groups.

**Data Analysis Procedures**

   Students participating in this study were in four separate sections, two of them represented the experimental group that was taught by the (RTM), and the other two represented the control group that was taught by the Tradition Method.  The reading comprehension achievement test (RCAT) pre- and posttests were administered to the subjects in the two groups to measure their reading comprehension achievement in English. Consequently, the following quasi-experimental, pretest, posttest design

was used for this study:

Experimental Group:          T1     X      T2
Control Group:               T1     Y      T2
Where:

1. T1: stands for the pretest of the (RCAT) that was given to the subjects in the two groups.

2. T2: stands for the posttest of the (RCAT) that was given to the subjects in the two groups.

3. X: stands for the treatment of the Reciprocal Teaching Model.

4. Y: stands for the treatment of the Traditional Method.

Moreover, an independent t-test was the main statistical procedure used in this study for the purposes of data analysis. This procedure was conducted by the (SPSS) program to examine the effects of the (RTM) on Jordanian tenth graders' reading comprehension achievement in English as represented by: the total score on the posttest of the (RCAT) to answer the first research question, the total score on the posttest of the (RCAT) to answer the second research question, and the scores of both the Literal and Inferential Questions on the posttest of the (RCAT) to answer the third research question.

**Results of the Study**
**Results about the First Question**

The first research question was "Does the (RTM) affect Jordanian tenth graders' reading comprehension achievement in English?" To answer this question, an independent t-test was first carried out to examine the equality of means between the experimental and control groups on the (RCAT) pre-test total scores. According to the results of this test as shown in table (2), the mean of the scores for the experimental group was (66.94) with a standard deviation of (3.94); whereas the mean of the scores for the control group was (67.84) with a standard deviation of (3.87). The t value (t = -1.48; df = 164) indicates that the mean difference between the two groups was not significant; that is, the two groups were equal in their reading comprehension achievement in English prior to the beginning of teaching.

**Table (2)**

**T-test for the Equality of Means between the Experimental and Control Groups on the Reading Comprehension Pre-test Scores**

| Group | N | Mean | S.D | t | df | Sig. |
|---|---|---|---|---|---|---|
| Experimental | 85 | 66.94 | 3.94 | -1.48 | 164 | .14 |
| Control | 81 | 67.84 | 3.87 | | | |

*P< .05

Table (3) shows the means and standard deviations for the experimental and control groups on the reading comprehension achievement post-test scores. The results in this table reveal that the mean for the experimental group was (78.76) with a standard deviation of (3.35), whereas the mean for the control group was (68.52) with a standard deviation of (2.90). Therefore, an independent t-test was performed to examine the mean difference between the two groups on the (RCAT) post-test total scores. The t-value (t = 21.01; df = 164; p < 0.001) according to the results of this test as shown in table (3) indicates that there were statistically significant differences between the two means of the experimental and control groups in favor of the experimental group. Thus, in answer to the first research question, the results demonstrate that there were significant differences in Jordanian tenth grade students' reading comprehension achievement in English due to their exposure to the (RTM). Consequently, the (RTM) does affect Jordanian tenth graders' reading comprehension achievement in English when compared to the Traditional Method.

**Table (3)**

**T-test for the Equality of Means between the Experimental and Control Groups on the Reading Comprehension Post-test Scores**

| Group | N | Mean | S.D | t | df | Sig. |
|---|---|---|---|---|---|---|
| Experimental | 85 | 78.76 | 3.35 | 21.01 | 164 | .000* |
| Control | 81 | 68.52 | 2.90 | | | |

*P< .05

## Results about the Second Question

The second research question was "Are there any significant differences between Jordanian male and female tenth grade students' reading comprehension achievement in English due to the (RTM)?" To answer this question, an independent t-test was conducted to examine the mean difference between the two male and female groups within the experimental group - that was exposed to the (RTM) - on the (RCAT) post-test total scores. Table (4) shows the means and standard deviations for the two male and female groups within the experimental group on the reading comprehension achievement post-test total scores. The results indicated that the mean for the male group was (80.91) with a standard deviation of (2.48), whereas the mean for the female group was (76.46) with a standard deviation of (2.56).

## Table (4)
## T-test for the Experimental Group between the Males and Females Reading Comprehension Achievement Post-test Scores

| Gender | N | Mean | S.D | t | df | Sig. |
|--------|----|-------|------|------|----|-------|
| Male | 44 | 80.91 | 2.48 | 8.14 | 83 | .000* |
| Female | 41 | 76.46 | 2.56 | | | |

*P< .01

The t-value (t = 8.14; df = 83; p < 0.001), according to the results of the independent t-test as shown in table (4), indicate that there were statistically significant differences between the two means of the male and female groups within the experimental group in favor of the male group. Thus, in answering this research question, the results demonstrated that there were significant differences between the male and female Jordanian tenth grade students' reading comprehension achievement in English due to their exposure to the (RTM). Consequently, the effects of the (RTM) on Jordanian tenth grade studentsí reading comprehension achievement in English were greater within the male group when compared to the female group.

## Results about the Third Question

The third research question was "Are there any significant differences between Jordanian tenth grade students' Literal and Inferential reading

comprehension achievements in English due to the (RTM)?"  To answer this question, a paired sample t-test was performed for the experimental group post-test scores between the literal and inferential reading comprehension achievements to examine the mean difference between the two achievement scores.  Table (5) shows the means and standard deviations of the experimental group post-test scores for the literal and inferential reading comprehension achievements.  The results in this table indicated that the mean for the literal reading comprehension achievement was (35.82) with a standard deviation of (5.17), whereas the mean for the inferential reading comprehension achievement was (43.00) with a standard deviation of (5.07).

The t-value (t = -6.88; df = 84; p < .001), according to the results of the paired sample t-test as shown in table (5), reveals that there were statistically significant differences between the two means of the literal and inferential reading comprehension achievements in favor of the inferential reading comprehension achievement.  Hence, the results indicate that there were significant differences between the literal and inferential reading comprehension achievements in English due to the impact of the (RTM).  Therefore, the effects of the (RTM) on Jordanian tenth grade studentsí reading comprehension achievement in English enhance their inferential reading comprehension achievement more than their literal reading comprehension achievement.

**Table (5)**
**T-test for the Experimental Group Post-test Scores between the Literal Reading Comprehension (LRC) and Inferential Reading Comprehension (IRC)**

| Pair Compared | N | Mean | S.D | t | df | Sig. |
|---|---|---|---|---|---|---|
| LRC | 85 | 35.82 | 5.17 | -6.88 | 84 | .000* |
| IRC | 85 | 43.00 | 5.07 | | | |

* P< .001

### Discussion of the Results

The results of this study showed that the (RTM) does affect Jordanian tenth gradersí reading comprehension achievement in English when compared to the Traditional Method as in the control group.  Also, the results revealed that the effects of the (RTM) on Jordanian tenth grade students'

reading comprehension achievement in English were greater within the male group when compared to the female group. Finally, the results indicated that the effects of the (RTM) on Jordanian tenth grade students' reading comprehension achievement in English enhance their inferential reading comprehension achievement more than their literal reading comprehension achievement.

These results can be considered most encouraging. In connection with the (RTM), the students in the experimental group showed significant improvements in their reading comprehension achievement in English as measured by the post-test score on the reading comprehension achievement test (RCAT). On the contrary, no such improvements in reading comprehension achievements were evident for the students in the control group that was taught by the tradition method. That is, the noted reading comprehension improvements appear to be a function of the instructional strategies provided within the (RTM).

Moreover, the results of this study are consistent with previous findings (Clark, 2003; Westera & Moore, 1995; Little & Richards, 2000; King & Johnson, 1999) and provide further evidence of the effectiveness of the (RTM) with its direct and explicit instruction in enhancing studentsí reading comprehension achievement. Furthermore, the results were obtained within the normal classroom settings, with no additional resources for the teachers and students involved, but with the usual classroom environment. Thus, these results assure the applicability of the (RTM) for the regular classroom teachers. The (RTM) treatment with the experimental group indicates that the teachers were able to introduce and manipulate such model effectively without affecting the managerial interactions between the teachers and their students.

Finally, the results of this study provide an evidence for the robustness of the (RTM) in both improving the male students reading comprehension achievement rather than the female students, and enhancing the inferential reading comprehension achievement over the literal reading comprehension achievement. This implies that the male students were more motivated than the female students in playing the teacher's role and implementing the four strategies of the model, and that the (RTM) was effective in making students more experts in the cognitive encoding, organization, integration and elaboration, and self-monitoring and control of comprehension of the materials they read.

## Implications and Recommendations

This study was launched to examine the effects of the (RTM) on Jordanian tenth grade students' reading comprehension achievement in English. The results of the study demonstrate the effectiveness of the model in improving the studentsí reading comprehension achievement, especially the male students and the inferential level of reading comprehension. It has been shown that the (RTM) promotes the studentsí reading comprehension since the purpose of the four strategies pertained to this model was to facilitate meaning from texts in a group effort between teacher and students and among the students themselves, thereby providing instructional support for each other through the four comprehension strategies.

One of the major aims of reading comprehension, that can be achieved through the implementation of the (RTM) strategies as shown in this study, is to create skilled readers who are able to make predictions about what they are reading, generate questions about the material, ask for clarifications, and summarize what they read.Undoubtedly, such readers establish goals for their reading, read with intention and purpose, know how, when, and why to use reading strategies for specific tasks, and finally regulate, monitor, and control their comprehension.

Since many Jordanian teachers are faced with the problem of students having good decoding skills but inadequate comprehension skills, these teachers need to be able to successfully train their students to employ effective models and strategies, such as the (RTM), for enhancing reading comprehension; otherwise, the students will continue to read texts emphasizing decoding, not comprehension. Finally, in light of the results of this study, the following implications and recommendations are suggested for educators, teachers, and researchers:

1. Employing the (RTM) in reading lessons as an alternative for the traditional method, especially with male students and when the reading lesson objectives concentrate on developing the inferential level of comprehension.

2. Holding seminars and workshops to train Jordanian teachers on how to implement the (RTM) along with its four strategies in their reading lessons.

3. Carrying out more research to examine the effects of the (RTM) on developing other reading comprehension levels (Critical and Creative) with other variables such as students' learning style.

4. Launching further research to test the effects of other models and strategies in teaching reading on improving Jordanian studentsí reading comprehension skills.


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