

# Reciprocal Teaching Strategy and Reading Comprehension in Students with Disabilities: A Third Grade Study

Asma I. Alharbi

Self- Development Skills Department, Common First Year Deanship, King Saud University, Riyadh, KSA

Received: 5 Oct. 2023, Revised: 22 Nov. 2023, Accepted: 22 Dec. 2023.

Published online: 1 May 2024

**Abstract:** In this study, we discussed the effectiveness of the reciprocal teaching strategy in developing reading comprehension among a sample of third-grade students with reading-learning disabilities. The strategy was applied to three female students who struggled with reading comprehension. Multiple baselines were used to measure progress and intervention effectiveness. The results showed significant improvement in the students' verbal responses to reading comprehension questions, increased participation in the classroom, and improved motivation. These positive outcomes were attributed to the implementation of the reciprocal teaching strategy and successful intervention using baseline designs.

**Keywords:** Motivation; Learning; Creative Thinking; Validity; Reliability; Psychometric Tests; Kindergarten Children.

## 1 Introduction

Reading is the entrance to all sciences, since reading is one of the most human means to discovery, learning and communication. Also, reading is considered of the most essential methods to develop knowledge, self-creative capabilities, sense, and cognitive study. Reading is the process of customizing students how and what to read. The most important objective of reading is to prepare and enable students scientifically and cognitively to get the knowledge by their own, and to be effective as thinkers and creators, to enter and compete creatively and creatively in the real world. Reading is the key to the door of reason because whomever reads puts God Almighty's directives in His Holy Book into practice, making it the lamp of knowledge with numerous advantages for our present and future. Reading is another crucial component for the development of a child because it fosters abilities, creativity, intelligence, and innovation. Reading also helps the child build a closer relationship with language as a medium of expression and a way of thinking.

Henceforth, different educational systems concentrate more on the skills of reading and perfecting these skills. Moreover, it is essentials to start leaching reading from early years since reading is a cumulative skill and is of paramount importance to the development of a child's culture. When the child starts to read according to his/her abilities and capacities and following strategies in line with his/her needs, the child would be equipped with many keys of knowledge and experiences. In addition, to promote his/ her confidence and positivity. Keeping in mind that the different ways of acquisition knowledge and getting experience is characteristic of human nature related to both time and method of acquisition.

One of the issues that students and teachers face in the classroom is learning disabilities. However, language learning disabilities take precedence because reading requires the individual to be able to recognize and comprehend words and these two processes are intertwined. However, the functional problems that students with learning disabilities suffer from constitute an obstacle to learning to read effectively like other students, because the neurological factors such as the ability to focus and pay attention, and the sensory factors such as hearing, vision, and pronunciation. In addition, the factors of the ability to perceive relationships, locate locations, logical association, and remember are ineffective factors for students with learning disabilities, which directly affects their ability to learn to read [1].

Learning disabilities are classified into two types (developmental learning disabilities and academic learning disabilities). Speech and language disorders are among the early indicators of developmental learning disabilities, as the child has disorders in developing language output, which is a failure to use speech sounds, developmental reading disorders or what is called dyslexia, in addition to developmental writing disorders [2].

The degree of harmony and interaction among students, the classroom setting, teachers, and the teaching strategies employed by the teacher are all factors that contribute to students' performance in general and students with learning challenges in particular. In addition to the helpful teaching tools in the classroom, more student interaction and harmony

\*Corresponding author e-mail: [Aalharbi4@ksu.edu.sa](mailto:Aalharbi4@ksu.edu.sa)

yields higher results, and vice versa [3].

While the classroom environment provides the natural atmosphere for receiving science in an atmosphere of social interaction with the rest of the class, with the availability of a resource room. The urgent need has emerged, whether for students with learning disabilities or other students of varying abilities, capabilities, and speed of completing tasks, to the necessity and witness of fixed strategies within the regular class, allowing each student to benefit from the regular curriculum according to his ability and speed. Also, the information inputs should be different and varied as long as the outputs are the same.

#### The problem of the Study and its questions

There is no doubt that the ordinary classroom environment is the best educational place for students who have learning disabilities in reading, and that the regular curriculum is also theirs, but the difference lies in how to communicate the vocabulary and skills of this curriculum to all students in the class who have different abilities, needs, and learning styles.

After the researcher's actual practice of teaching in several primary schools in the normal classrooms and the resource room, she encountered a real challenge, which is a lack of harmony among children with learning disabilities to read in the regular class or profit from the usual curriculum. This prompted her to investigate the need for students with learning disabilities to read and learn in the classroom using modern teaching approaches that are appropriate for their unique requirements.

Also, the researcher noticed, through supervising the teachers of students with learning disabilities, that there is a difference in the level between the students who have learning disabilities in reading between those in the resource room and those in the regular class, as the level of those in the regular class decreases because of the focus on traditional methods of teaching. Accordingly, the researcher sought to discover the effect of an educational program based on the reciprocal teaching strategy in developing the reading comprehension of female students who suffer from disabilities in reading learning in the regular class. As the reciprocal teaching strategy is a proven scientific one, emanating from experiments and studies, carried out by many scientists and researchers with ordinary students or students with learning disabilities, which enables the later ones to benefit from the regular curriculum, and apply it in the time and spatial frameworks of the regular class.

The field of teaching is full of modern, diverse, and different strategies that are used with ordinary class students and students with learning disabilities, such as the active learning strategy, the student's self-assessment strategy, and the visual teaching strategy. But the question here is whether the reciprocal teaching strategy can enable the student who has learning disabilities in reading to comprehend reading and benefit from the regular curriculum in the classroom in Saudi schools? This is what the current study attempts to answer by providing a guide that enables the teacher to benefit from this strategy and apply it in the classroom, thus making the educational process within the classroom a dynamic and useful process. Thus, the problem of the study is crystallized in the following main question: What is the effect of applying an educational program based on the strategy of reciprocal teaching in developing reading comprehension skills for a sample of female students with reading disabilities of the regular curriculum in the classroom at the primary stage? From this question a sub-question is branched that is: Are there (clear) differences in the results on the reading comprehension scale for students with reading disabilities before and after the intervention, attributed to the independent variable "the educational program based on the reciprocal teaching strategy"?

## 2 Study limitations

**Time limits:** The study was implemented in the second semester of the academic year (2022/2023), on a weekly basis for a period of five weeks, according to the schedule of each student.

**Spatial boundaries:** The study was applied at (250) primary school for girls in Al-Olaya district in the north of the city of Riyadh, which is a government school affiliated to the Ministry of Education. The number of its students is (440) students, and the number of its teachers is (48) teachers and (15) administrators. The school has a learning disabilities program with one resource room and two learning disabilities specialized teachers. The school is one of the distinguished schools that has won several awards in student and educational excellence and at the level of school health, and it has obtained several distinguished classifications from the classifications of the Ministry of Education for the year 1439 AH.

**Human limits:** represented by the community of female students who suffer from learning disabilities, specifically in reading, and who are enrolled in resource rooms in the third primary grade in the Kingdom of Saudi Arabia.

**Objective limits:** The number of students in the classes in which the study was applied ranges between (23-25) students, sitting in four parallel rows with (6) seats for each row, with a space of one meter separating each seat for movement and exit. The student Tala was sitting in the front but in the far left of her class. As for Shahd, she was sitting in the front row opposite the teacher in the middle. As for Lamar, she was sitting in the back because of her height and large physical

structure. The classroom is considered traditional in distribution and includes tables and chairs. In addition to beautifying the classroom wall with some colorful banners and teaching aids (sometimes a source of distraction), it also includes a learning and entertainment corner (recorders, educational games) and a library corner (stories, books, and pamphlets).

### 3 Study definitions

The teaching strategy is “a group of actions, performance, and activities that the teacher performs with the intent of making the students achieve specific educational goals. In addition, the actions that the teacher performs do not take place in isolation from the behavior of the students, because the overlap between the teacher’s actions and the activity of the students is great, which determines the form of educational work” [4].

The researcher defines it procedurally: it is a comprehensive plan for the teaching process based on a specific methodology and applying specific activities in order to achieve clear long-term educational goals.

Reciprocal teaching is an educational activity that takes the form of a dialogue between teachers and students, or between students with each other, where they switch roles in accordance with the sub-strategies included (predicting, questioning, clarifying, and summarizing), with the goal of understanding the material read and controlling this understanding by monitoring it [5]. While [6] believes that the reciprocal teaching strategy is nothing, but a teaching method based on the positive participation of the learner, and the interaction between him and the teacher and his peers with each other. It is carried out within the framework of four integrated and sequential stages, which are the summarization stage, the question generation stage, the clarification stage, and the prediction stage.

Reading Comprehension: It is “the correct linking between the symbol and the meaning, taking the meaning out of the context, choosing the appropriate meaning, organizing the ideas read, remembering these ideas and using them in some of the present and future activities” [7]. The researcher defines reading comprehension procedurally as: understanding the meaning through verbal symbols and the ability to analyze the context and understand the content and rephrase it or reuse it in expression. Reading comprehension in the current study means answering the questions that fall in the levels: literal, reorganization, deductive, and assessment, and it is expressed by the mark obtained by the student in the reading comprehension test prepared for this purpose.

Reciprocal teaching strategy relationship with reading comprehension: [8] indicates that there is a correlation between the reciprocal teaching strategy and reading comprehension. This relationship is evident in the fact that the four strategies of the reciprocal teaching strategy are a set of mental operations that the reader exercises during his interaction with what he reads, given that comprehension is essentially an interactive constructive mental process. The reciprocal teaching strategy helps students with learning disabilities to understand the subject of reading and to build a clear meaning about what is being read. It also activates their previous knowledge about the subject of reading. Moreover, it offers students with learning disabilities the opportunity to observe thought processes while reading, and to interact with the subject of reading by making predictions of what will happen next. The researcher explains that the reciprocal teaching strategy as an interactive strategy works to activate the group of basic mental operations in the reading process, which stimulates the reading comprehension processes in the students’ brain.

Student with learning disabilities in reading: Conventionally, the student who has learning disabilities in reading is the one whose level of performance in reading, whether aloud or silent, falls below the level of her expected achievement based on her mental abilities and compared to her normal peers, with the exclusion of any retardation. That is, the student’s inability to read at a level that corresponds to their mental age and chronological age, while having the opportunity to learn in comparison to their classmates. [9]. Or the student who has difficulty in reading comprehension is able to read properly, but there is no or little understanding of what is being read” [10].

The researcher defined it procedurally as: the student who suffers from a decrease in the level of reading comprehension ability because of the emergence of symptoms of learning disabilities in the regular school. And she is diagnosed by the Learning Disabilities Program team as having reading disabilities, and she has an individual educational plan in the resource room.

### 4 Methodology

In this study, the researcher used one of the multiple baseline designs. As the name indicates, this design allows simultaneous analysis of the effect of an independent variable on more than one individual, whereby the teacher can do an experimental test to find out the effects of interference (the independent variable) on:

1. Two or more behaviors associated with a single student in a single setting, such as the behavior of a student when leaving their seat or speaking in class. (multiple baselines across behaviors).
2. Two or more students displaying the same behavior in an individual setting, such as reading disabilities, which we

will address in this study. (multiple baselines across individuals).

3. Two or more environments in which a student exhibits the same behavior, such as swearing during recess and at school. (multiple baselines across different environments).

The study included three types of variables: the independent variable represented by Reciprocal Teaching Strategy; the dependent variable that is Developing of Reading Comprehension; and the intervening variables such as the characteristics of the sample, the teacher, and the place of applying the study.

## 5 Population and Sampling

The study was applied to three female students from the third primary grade in (250) primary school for girls in Al-Olaya, KSA.

### 5-1 Study Tools

- 1) The approved mechanism for diagnosing reading disabilities for female students.

The students (sample) Shahad, Tala and Lamar were diagnosed as students with reading disabilities, through the official channels in force, and through the learning disabilities program attached to the general education teacher, that is, through the diagnosis of the resource room through a learning disabilities teacher who applies the standards to the student informal. In addition to developmental tests and the parallel curriculum, data are collected, strengths and weaknesses are identified, and the individual educational plan for the student is formulated based on the student's points of need.

As for the timeline in diagnosing cases of learning disabilities for the three female students and conducting the academic intervention, it was as follows: Shahad was in the third grade of primary school (second semester), after she repeated the school year for the second grade of primary school, while Lamar was in the second grade of primary school (semester second study). The three girls continue to receive resource room services on a weekly basis.

- 2) The researcher's experiences with the reciprocal teaching strategy

The researcher holds a PhD in special education, learning disabilities track, and has previous experience as a teacher in resource rooms for nine years. Through daily work with students with learning disabilities in various academic fields, the researcher sensed the effectiveness of the reciprocal teaching strategy through daily interaction with the students. If this strategy is applied inside the resource room during group teaching or auxiliary activities, or even in cooperation sessions with the regular classroom teacher, we will see the benefit and positivity of reciprocal teaching. This was the motive for choosing such a strategy, as we want to prove, through Single Subject Research designs, the extent of realism and positivity of reciprocal teaching in reading comprehension. During her work as a field training supervisor for three years, the researcher witnessed experiences confirming that this strategy is one of the effective strategies in teaching students with learning disabilities. It gives students the opportunity to participate in the lesson, in addition to the confidence of the students that the teacher gains by assigning each student to carry out a specific task in the lesson (such as summarizing).

There is no doubt that the one-case design (designing baselines across individuals) here was able to answer our hypotheses regarding the extent of the impact of the reciprocal teaching strategy on the reading comprehension of students with reading disabilities. It may be a motive for many researchers to exert more effort in conducting such designs on the educational level.

- 3) Definition of reading comprehension scale dimensions:

Abdel Bari (2009) defined the dimensions of the reading comprehension scale as follows:

1. The literal or Apparent or surface comprehension level: This level refers to the reader's comprehension of the writer's argument and places the emphasis on the text's surface structure.
2. The Inferential comprehension level: In this level, the reader can identify deep meanings within a text without the writer directly stating them. This level is called reading between the lines.
3. The Critical/evaluative comprehension level: This level includes the reader's ability to judge the ideas and information presented by the writer in his subject, as well as the reader's determination of the information he knows about this subject, and his response to it, whether by acceptance or rejection.
4. The Creative comprehension level: After the reader has practiced the act of reading the specified text, and after he has understood its apparent and hidden meanings, he has issued his judgment on it. The reader begins to change some of his impressions, behaviors, or attitudes based on the information he gained from the new topic, then he melts or merges this information with his previous knowledge and information. Thus, he has new knowledge or experiences other than what he has read or possessed before, meaning that understanding at this level is a kind of integration

between the new knowledge and the previous knowledge of the individual.

## 5-2 Building the reading comprehension scale

A reading comprehension scale was built for students with learning disabilities in the third grade of primary school. The researcher benefited from building the scale through the following:

- a. Reviewing the literature and previous studies related to the development of reading comprehension among students with learning disabilities, including the study of [11], and the study of [12] and [13], to define the steps for building the scale.
- b. Reviewing previous scales that measure reading comprehension for students with learning disabilities, including the scale that was prepared by [8].
- c. The second unit, entitled Health and Nutrition, was selected from the Arabic language textbook for students of the third primary grade.
- d. Based on these pillars, the reading comprehension scale was designed, which consisted of (14) items distributed over four dimensions: the literal comprehension dimension, which consisted of (4) items, and the Inferential comprehension dimension, which consisted of (4) items. Likewise, the dimension of critical understanding consists of (3) paragraphs. As for the dimension of creative understanding, it consists of (11) paragraphs.
- e. Presenting the reading comprehension scale in its initial form to a group of arbitrators to verify the surface validity of the scale.
- f. Make the appropriate adjustments to the scale and produce it in its final form after ensuring the validity and reliability of the scale.

### The Validity and the Reliability of the Procedures of the Study

#### First: Validity

The validity of Single Subject Research Designs falls into two categories:

- A. **Internal Validity:** It is synonymous with stability of effect. In the sense that it has been confirmed through many procedures that the independent variable is solely responsible for the changes that occurred to the dependent variable. It cannot be explained by the presence of extraneous factors or emergency circumstances.
- B. **External Validity:** It refers to the extent to which identical outcomes may be reached when applying the independent variable to the dependent variable to other persons, similar behaviors, or in different contexts. Because it was conducted on three female students, external validity and procedural control were validated in this study.

#### Second: Reliability

Single Subject Research Designs often contain three types of stability that should be achieved as much as possible, and they are as follows:

- A. **The reliability of the Effect:** It means the extent of confidence to verify and ensure that the independent variable (intervention) has induced an effective change in the dependent variable (reading comprehension). This means that using the same independent variable intervention will achieve similar results if applied to the same target behavior. This became clear to us by repeating the same effect of the independent variable on the dependent variable across three female students, which is called experimental exactingness.
- B. **The reliability of the measure:** It means the accuracy of the measurement that can be developed and improved through the clear procedural definition of the behavior targeted by the intervention, which is what we call the dependent variable. Through this study, the accuracy and reliability of the data collected by direct observation was confirmed, and the agreement between the observations of the researcher teacher and the cooperating teacher was verified by 80% during a third of the sessions (30%) during the baseline and intervention phase for the three female students.
- C. **The agreement of the observations:** Care has been taken to achieve the agreement of the observers, by formulating and proposing the procedural definition of the dependent variable target behavior, as well as trying to define it and make it clear to all the observers. This is due to the possibility of unintentional human error, the likelihood of contradiction in the process of collecting information, and the possibility of differing visions among observers about the students' responses despite defining behavior procedurally. Several procedures have been used to measure the percentage of agreement between observations such as:
  1. The cooperating teacher recorded data about the dependent variable (reading comprehension) in more than one

piece of reading and across the three different students.

2. The class teacher recorded the observations for the same session in which the cooperating teacher recorded the observations, and the percentage of agreement was calculated.
3. The cooperating teacher recorded data about the dependent variable (reading comprehension) for the student Shahad after two lessons.
4. The percentage of agreement across the consistent results was calculated by dividing the number of agreements on each note and multiplying by 100.

Measuring the stability of application procedures (intervention accuracy): The accuracy of the treatment was obtained according to a minimum of 25% of all intervention sessions, and after training the female teachers on how to implement it appropriately. Approximately 99% of processing accuracy was recorded in the intervention accuracy measure, ensuring stability of the intervention to prove experimental control.

**Table 1:** Measuring the stability of application procedures (intervention accuracy)

Student: Tala Teacher: Asma'a Al-Harbi	Steps of Intervention Program 1439 / 7 / 29								
	Trials								
Program Steps	1	2	3	4	5	6	7	8	9
1. Beginning a learning experience at predetermined times or when the opportunity naturally arises	+	+	+	+	+	+	+	+	+
2. Diversifying educational materials	+	+	+	+	+	+	+	+	+
3. Drawing the student's attention	+	+	+	0	+	+	+	+	+
4. Sending educational signals	+	+	+	+	+	+	+	+	+
5. Making certain postponements	+	+	+	+	+	0	+	+	+
6. Sending control triggers	+	+	+	+	+	+	+	+	+
7. Providing an appropriate level of reinforcement or implementing error correction procedures	+	+	+	+	+	+	+	+	+
8. Recording of experiments in tracking forms	+	+	+	+	+	+	+	+	+
Accuracy Percentage (Sum of the correct steps/sum of all steps)*100	70 / 72 * 100 97.2 =								

**Table 2:** Data of the baseline stage for the female students Shahad, Lamar and Tala

Students	Session	No. of Questions	Correct responses	Verification Percentage
Shahad	1	5	0	% 0
	2	5	1	% 20
	3	5	1	% 20
Tala	1	5	1	% 20
	2	5	1	% 20
	3	5	2	% 40
Lamar	1	5	1	% 20
	2	5	1	% 20
	3	5	1	% 20

**Table 3:** Stability of data points at the baseline stage

Name	Skill	Arithmetic Average	The actual range of Data points	The acceptable range of Data points
Shahad	Answering Reading	0.6	2-0	2-0
Tala	Comprehension questions	1.3	2-0	2-0
Lamar		1	2-0	2-0

### 5-3 Comment on recording baseline data.

The student Shahad: The baseline data of the student Shahad were recorded in the above form, which was used by the researcher, the cooperating teacher's observation, and the class teacher's review. The student was able to answer (4) questions out of (15) questions that were presented to her in three sessions during three days in the first week of applying the study. The study questions were divided into (5) questions every day according to the standard previously agreed upon, and by providing (3) reading passages. The student obtained an average of 0.6 in the baseline stage.

The student Tala: The baseline data of the student Tala were recorded in the above form, which was used by the researcher, the cooperating teacher's observation, and the class teacher's review. The student was able to answer (4) questions out of (15) questions that were presented to her in three sessions during three days in the first week of applying the study. The study questions were divided into (5) questions every day according to the standard previously agreed upon, and by providing (3) reading passages. The student obtained an average of 1.3 in the baseline stage.

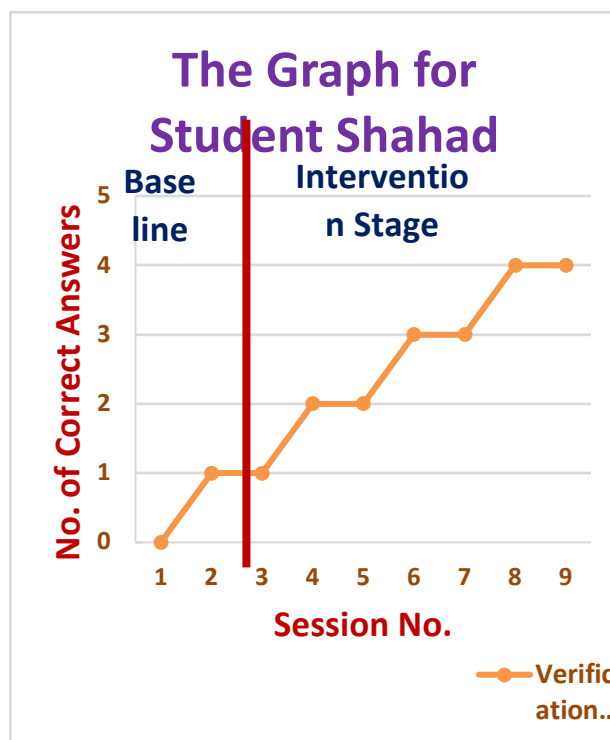
The student Lamar: The baseline data of the student Lamar were recorded in the above form, which was used by the researcher, the cooperating teacher's observation, and the class teacher's review. The student was able to answer (3) questions out of (15) questions that were presented to her in three sessions during three days in the first week of applying the study. The study questions were divided into (5) questions every day according to the standard previously agreed upon, and by providing (3) reading passages. The student obtained an average of 1 in the baseline stage.

**Table 4:** Intervention stage data for the student Shahad

Student	Session	No. of Questions	Correct Answers	Verification Percentage
Shahad	1	5	2	% 40
	2	5	2	% 40
	3	5	3	% 60
	4	5	3	% 60
	5	5	4	% 80
	6	5	4	% 80

**Table 5:** Stability of data points at the baseline stage for Student Shahad

Name	Skill	Arithmetic Average	The actual range of Data points	The acceptable range of Data points
Shahad	Answering questions Reading Comprehension	3	5-3	4-3



**Fig. 1:** Graph for the student Shahad in the baseline and intervention phases

Commenting on the results for the student Shahad:

The data of the intervention stage were recorded, and after applying the reciprocal teaching strategy, the student S the above form, which was used by the researcher, the cooperating teacher, and the class teacher's review. The student was able to answer (18) out of (30) questions presented to her in six sessions during six days in the second and third weeks of applying the study. The study questions were divided into (5) questions every day according to the standard previously

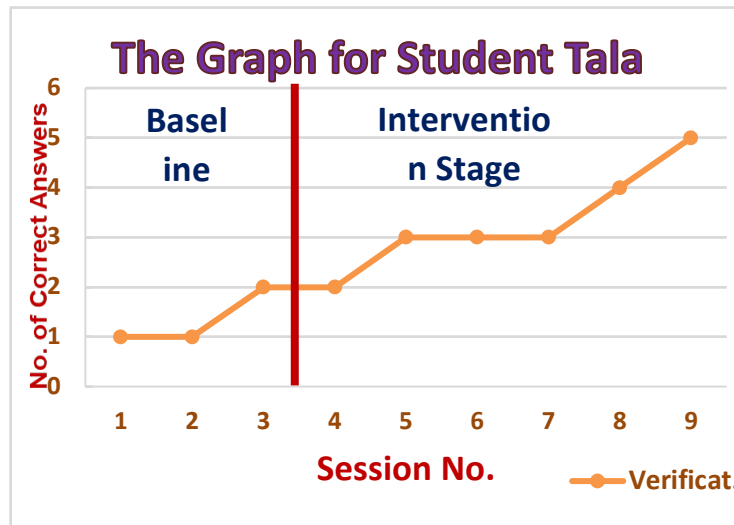
agreed upon, and by providing (6) reading pieces.

**Table 6:** Intervention stage data for the student Tala

Student	Session	No. of Questions	Correct Answers	Verification Percentage
<b>Tala</b>	1	5	2	% 40
	2	5	3	% 60
	3	5	3	% 60
	4	5	3	% 60
	5	5	4	% 80
	6	5	4	% 80

**Table 7:** Stability of data points at the baseline stage for Student Tala

Name	Skill	Arithmetic Average	The actual range of Data points	The acceptable range of Data points
Tala	Answering Reading Comprehension questions	3.1	5-3	4-3



**Fig. 2:** Graph for the student Tala in the baseline and intervention phases

Commenting on the results for the student Tala:

The data of the intervention stage were recorded, and after applying the reciprocal teaching strategy, the student Tala the above form, which was used by the researcher, the cooperating teacher, and the class teacher's review. The student was able to answer (19) out of (30) questions presented to her in six sessions during six days in the third and fourth weeks of applying the study. The study questions were divided into (5) questions every day according to the standard previously agreed upon, and by providing (6) reading pieces.

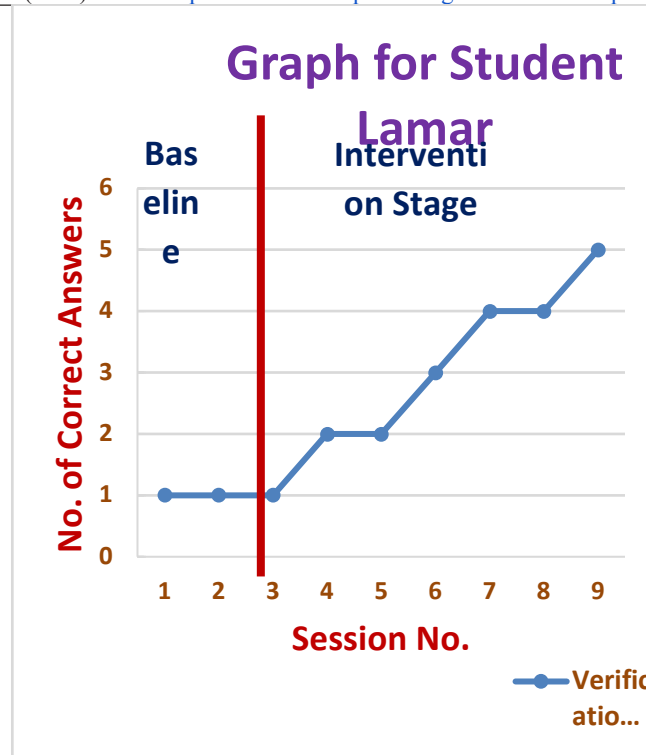
**Table 8:** Intervention stage data for the student Lamar

Student	Session	No. of Questions	Correct Answers	Verification Percentage
<b>Lamar</b>	1	5	2	% 40
	2	5	2	% 40
	3	5	3	% 60
	4	5	3	% 60
	5	5	4	% 80
	6	5	5	% 100

**Table 9:** Stability of data points at the baseline stage for Student Lamar

Name	Skill	Arithmetic Average	The actual range of Data points	The acceptable range of Data points
Lamar	Answering Reading Comprehension questions	3.1	5-3	4-3





**Fig. 3:** Graph for the student Lamar in the baseline and intervention phases

Commenting on the results for the student Lamar:

The data of the intervention stage were recorded, and after applying the reciprocal teaching strategy, the student Lamar the above form, which was used by the researcher, the cooperating teacher, and the class teacher's review. The student was able to answer (19) out of (30) questions presented to her in six sessions during six days in the third and fourth weeks of applying the study. The study questions were divided into (5) questions every day according to the standard previously agreed upon, and by providing (6) reading pieces.

## 6 Discussion

It is clear from the previous results, which were received through the application of the design of multiple baselines across individuals to develop reading comprehension, that the strategy of reciprocal teaching is effective, as this strategy contributed to improving the level of reading comprehension of reading material in the third grade of primary school for a sample of students with reading disabilities.

From the foregoing, the results showed that there is a functional relationship between the dependent variable (reciprocal teaching strategy) and the independent variable (reading comprehension) among the study samples of students with reading disabilities in the third grade of primary school, who are (Lamar, Tala, Shahad).

This strategy, applied in the form of applying the design of multiple baselines across individuals, influenced increasing motivation, raising the self-level, and improving social relations among the female students under study. This is done through paper or verbal reports from individuals who have direct and daily contact with female students (mother, regular class teacher, student counsellor, class educator, colleagues).

By reviewing several previous studies as mentioned in the second chapter, it is clear that the results of this study are consistent with the results of previous studies. It is clear from the previous studies the importance of reciprocal teaching in the development of achievement and the survival of the impact of learning, and the development of scientific reasoning skills, metacognitive skills, mathematical communication skills, reading comprehension, and the development of thinking abilities in various educational materials. By comparing Arabic studies first due to the similarity of the educational environment and cultural backgrounds and standardization of the target Arabic language, then foreign studies, the followings could be indicated:

- Most of the previously presented studies agreed on the use of reciprocal teaching as an independent variable, and the current study agreed with these studies in this aspect.

- The current study differed from previous studies in focusing on female students with learning disabilities and applying the learning disabilities program applied in Saudi Arabia, and the curriculum is Loghati (my language) in the Saudi Ministry of Education.

### Social Validity

The researcher concluded that it is possible in this study to generalize the use of the reciprocal teaching strategy to male and female students with learning disabilities in all academic problems (reading and spelling, mathematics, calligraphy) that may appear to them. It is also very possible to apply this strategy in the regular classroom, and in all subjects. It can be applied to certain groups that have academic problems, provided that social acceptance must be available in this sample. This is done through the application of the social validity scale, which was built on a five-point Likert scale in six phrases. The result was very close, with a percentage of 99%, indicating the quality and effectiveness of the reciprocal teaching strategy as an appropriate intervention to improve reading comprehension.

Several steps were followed in this study to achieve social validity:

1. Determine the groups of study individuals accurately to collect information from them through interviews, monitoring observations, and the exploratory visit. The individuals who were in contact with the students varied, such as the mother and the student counselor, and the teachers implementing the intervention, in natural environments.
2. Care was taken in choosing the methods of collecting information and data from cross-off forms, interviews, notes, files, and free interviews.
3. Accuracy in analyzing data and issuing reports on it, from the first steps of the study, and selecting participants, targets, and study tools.

### Generalization of results

The results of applying the design of multiple baselines across individuals to develop reading comprehension confirmed that the strategy of reciprocal teaching is effective, as this strategy contributed to improving the level of reading comprehension of reading material in the third grade of primary school for a sample of students with reading disabilities.

From the foregoing, the results showed that there is a functional relationship between the dependent variable (reciprocal teaching strategy) and the independent variable (reading comprehension) among the study samples of students with reading disabilities in the third grade of primary school, who are (Lamar, Tala, Shahd).

This strategy, applied in the form of applying the design of multiple baselines across individuals, influenced increasing motivation, raising the self-level, and improving social relations among the female students under study. This is done through paper or verbal reports from individuals who have direct and daily contact with female students (mother, regular class teacher, student counsellor, class educator, colleagues).

It means that the independent variable a similar impact on the dependent variable when applied to other individuals, or in other environments. In this study, external validity and procedural control were confirmed because it was applied to three female students.

### Study features (application)

The researcher chose this design for several reasons.

1. It was easy to see the effects of the intervention across individuals using this design.
2. The inappropriateness of other designs, for example, the withdrawal design would have been impossible, when the students have reading comprehension, it is impossible to reverse this behavior so that we can show the functional-performance relationship.
3. The progressive introduction of the intervention helped to emphasize validation within the design itself. And this was more effective.
4. It was expected before the study that there would be a functional relationship between the intervention and the performance of the individuals based on the researcher's experiences as a former teacher, and the previous research that was done in the relationship between reciprocal teaching and the development of reading comprehension.

### Study features (results)

This study demonstrated the effectiveness of the strategy of reciprocal teaching for people with learning disabilities in developing reading comprehension for the third grade of primary school, and for the primary stage, and the acceptance of the study individuals for this strategy because of the element of competition, approximation of meanings, saving effort,

and the element of novelty as well.

1. The effective effect of using the strategy of reciprocal teaching appeared to increase the development of reading comprehension significantly among the female students (Shahd, Walmar and Tala), as confirmed by the results of the study.
2. Coming up with a practical scientific application, on the effective impact of using the reciprocal teaching strategy in developing reading comprehension, which enriches the library of learning disabilities and special education in general with valuable educational experiences and applications.
3. Providing proven and useful experiences for parents and teachers and enriching their experience with more applied strategies and techniques, which have an effective impact in improving many academic skills of students in the classroom or at home.
4. Opening the door to questions about the possibility of using strategies of an applied nature to modify and solve many academic, reading, writing or mathematical problems.

#### Recommendations

1. The need to use the strategy of (reciprocal teaching) for students with learning disabilities, by the teachers and students of the regular class.
2. Providing each learning disabilities program with (a training workshop on reciprocal teaching) to be applied to all male and female teachers in public schools.
3. Codifying the training workshop on the reciprocal teaching of various academic skills to the mothers of the female students.
4. Adapting educational curricula in general education to apply the strategy (reciprocal teaching). And make it one of the accompanying activities for some lessons.

#### References

- [1] R. S. Al-Mawadiah and M. A. Al-Zu'bi, "The degree of availability of the standards of the national framework for academic qualifications in early childhood in Jordan from the point of view of female teachers," *International Journal of Childhood, Counselling and Special Education (CCSE)*, vol. 2, pp. 103-112, 2021.
- [2] K. I. Al-Mseidin and M. A. Al-Zu'bi, "THE EFFECTS OF COGNITIVE BEHAVIORAL THERAPY ON ACADEMIC ADJUSTMENT AMONG JORDANIAN STUDENTS," *Journal of Evidence-Based Psychotherapies*, vol. 21, 2021.
- [3] Abu Ghanima, Adel. (2010). Dyslexia and treatment methods. Cairo, Egypt: Academic House of Science
- [4] Hadidi, Mona; Khatib, Jamal. (2005). Strategies for teaching students with special needs. Jordan: Dar Al-Fikr.
- [5] Mohammed, Nora. (2009). Reciprocal teaching. Retrieved from the link: <http://homeeconomics.mountada.biz/montada-f19/topic-t397.htm>
- [6] Hamada, Faiza. (2009). The use of reciprocal teaching to develop mathematical thinking and written communication in the preparatory stage in the light of some school mathematics standards. Retrieved from the link: <http://homeeconomics.mountada.biz/montada->
- [7] Abdel Hamid, Amani Helmy (2002). A proposed remedial program to overcome difficulties in reading comprehension for first grade middle school students, Knowledge Reading Journal, Issue 16: Faculty of Education, Ain Shams University.
- [8] Abdul Bari, Maher. (2010). Reading Comprehension Strategies Theoretical Foundations and Practical Applications. (First edition), Amman, Jordan: Dar Al Masirah.
- [9] Sayed Ahmed Al-Bahi. (2009). The effect of using some remedial teaching strategies on improving the level of reading comprehension among fourth-grade pupils with reading difficulties. Retrieved from the link: <http://ksu.opac.mandumah.com>.
- [10] Al-Sawy, Ismail. (2009). Cognitive and metacognitive reading comprehension difficulties "Theoretical concepts, diagnosis, and proposed program". Cairo, Egypt: Dar Al-Fikr Al-Arabi. P: 56.
- [11] M. A. Al-Zu'bi, K. I. Al-Mseidin, A. F. Almajali, R. S. Al-Mawadieh, H. Khafajeh, and N. Abutayeh, "Motivating Pre-School Children to Learn Creative Thinking in Jordan Using iPad Applications: A Mixed-Methods Approach,"

- [12] M. Al-Zu'bi, M. S. Omar-Fauzee, and A. Kaur, "The Relationship between Creative Thinking and Motivation to Learn Creative Thinking Among Pre-Schoolers in Jordan," *European Journal of Education Studies*, 2017.
- [13] M. Al-Zu'bi, M. S. Omar Fauzee, and A. Kaur, "The effect of iPad apps on creative thinking among preschoolers in Jordan," *International Journal of Multidisciplinary Education and Research*, vol. 2, pp. 29-35, 2017.